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FIREGUARD

Flame Retardant Cables

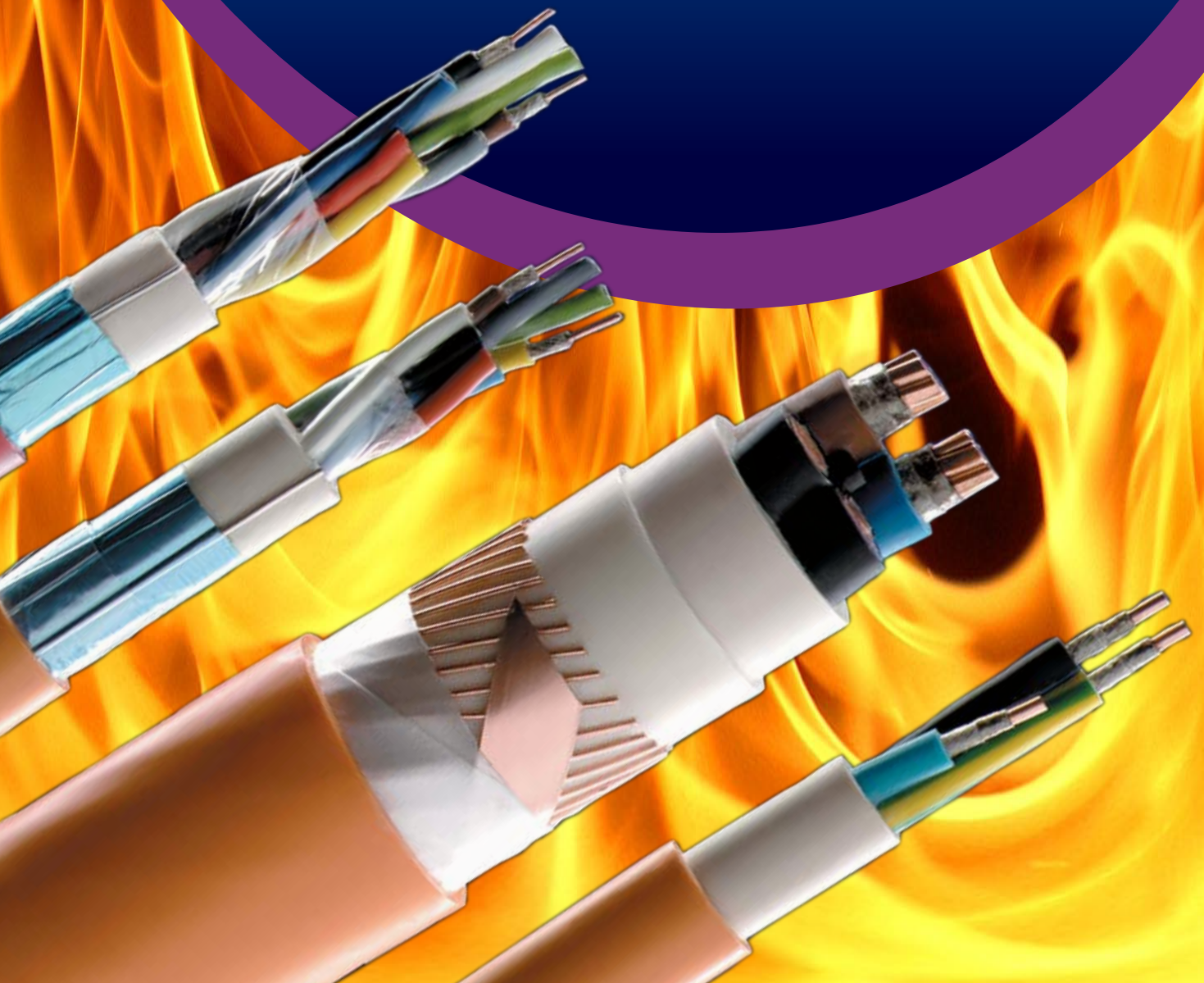


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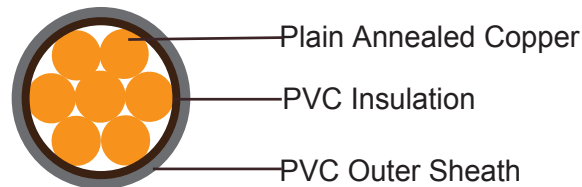
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300/500V PVC Insulated, PVC Sheathed Power Cables (Single Core)

FGD300 05VV-U/R (CU/PVC/PVC 300/500V Class 1/2)
BS Code: 6181Y (CU/PVC/PVC)



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS 6004: 2012

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 60332-1-2 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

300/500V

CABLE CONSTRUCTION

Conductor: Annealed copper conductor, class 1 (1.0mm² to 2.5mm²) or class 2 (4mm² to 35mm²) according to BS EN 60228.

Insulation: PVC Type TI 1 according to BS EN 50363-3.

Outer Sheath: PVC Type 6 according to BS 7655-4.2.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Brown or blue.

Sheath Colour: Grey (other colours upon request)



PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (PVC): 70°C

Maximum short circuit temperature (5 Seconds): 160°C

Minimum bending radius:

Up to 10mm² - Fixed: 3 x overall diameter

10mm² to 25mm² - Fixed: 4 x overall diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD300 05VV-U/R | | | |
|-----------------------------|--------------------|------------------------------|--------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Maximum Overall Diameter | Approx. Weight |
| No. x mm ² | | mm | mm | mm | kg/km |
| 1x1.0 | 1 | 0.6 | 0.8 | 4.5 | 27 |
| 1x1.5 | 1 | 0.7 | 0.8 | 5.0 | 36 |
| 1x2.5 | 1 | 0.8 | 0.8 | 5.7 | 52 |
| 1x4.0 | 2 | 0.8 | 0.9 | 6.7 | 76 |
| 1x6.0 | 2 | 0.8 | 0.9 | 7.3 | 100 |
| 1x10 | 2 | 1.0 | 0.9 | 8.8 | 160 |
| 1x16 | 2 | 1.0 | 1.0 | 10.1 | 230 |
| 1x25 | 2 | 1.2 | 1.1 | 12.1 | 340 |
| 1x35 | 2 | 1.2 | 1.1 | 13.5 | 440 |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 70°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671:2008 table 4D1A

| Conductor cross-sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc) | | Reference Method B (enclosed in conduit on a wall or in trunking etc) | | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray horizontal or vertical etc) | | | | | |
|--------------------------------|---------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------|---------------------------------|-------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------|------------------------------------|-----------------------------------------------------------------------|------------|----------|
| | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. flat and touching | 3 or 4 cables, three-phase a.c. flat and touching or trefoil | Touching | | | Spaced by one cable diameter | | |
| | | | | | | | 2 cables, single-phase a.c. or d.c. flat | 3 cables, three-phase a.c. flat | 3 cables, three-phase a.c. trefoil | 2 cables, single-phase a.c. or d.c. or 3 cables three-phase a.c. flat | Horizontal | Vertical |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| mm ² | A | A | A | A | A | A | A | A | A | A | A | A |
| 1.0 | 11.0 | 10.5 | 13.5 | 12.0 | 15.5 | 14 | - | - | - | - | - | - |
| 1.5 | 14.5 | 13.5 | 17.5 | 15.5 | 20 | 18 | - | - | - | - | - | - |
| 2.5 | 20 | 18 | 24 | 21 | 27 | 25 | - | - | - | - | - | - |
| 4 | 26 | 24 | 32 | 28 | 37 | 33 | - | - | - | - | - | - |
| 6 | 34 | 31 | 41 | 36 | 47 | 43 | - | - | - | - | - | - |
| 10 | 46 | 42 | 57 | 50 | 65 | 59 | - | - | - | - | - | - |

| Conductor cross-sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc) | | Reference Method B (enclosed in conduit on a wall or in trunking etc) | | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray horizontal or vertical etc) | | | | |
|--------------------------------|---------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------|---------------------------------|-------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------|------------------------------------|-----------------------------------------------------------------------|----------|
| | | | | | | | Touching | | | Spaced by one cable diameter | |
| | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. flat and touching | 3 or 4 cables, three-phase a.c. flat and trefoil | 2 cables, single-phase a.c. or d.c. flat | 3 cables, three-phase a.c. flat | 3 cables, three-phase a.c. trefoil | 2 cables, single-phase a.c. or d.c. or 3 cables three-phase a.c. flat | |
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Horizontal | Vertical |
| mm ² | A | A | A | A | A | A | A | A | A | A | A |
| 16 | 61 | 56 | 76 | 68 | 87 | 79 | - | - | - | - | - |
| 25 | 80 | 73 | 101 | 89 | 114 | 104 | 131 | 114 | 110 | 146 | 130 |
| 35 | 99 | 89 | 125 | 110 | 141 | 129 | 162 | 143 | 137 | 181 | 162 |

Voltage Drop (Per Amp Per Meter) according to BS 7671:2008 table 4D1B

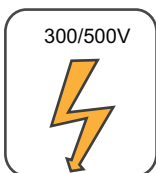
| Nominal Cross Section Area | 2 cables d.c. | 2 cables, single-phase a.c. | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | | | | | | | | | |
|----------------------------|---------------|--------------------------------------------------------|------|--------------------------------------------------------------|------|------------------------------------------------------|--------------------------------------------------------------|--------|-----------------------|------|----------------------|------|--------|------|-------|------|------|------|------|------|------|------|
| | | Ref. Methods A and B (enclosed in conduit or trunking) | | Ref. Methods C & F (clipped direct, on trays or in free air) | | Ref. Methods A & B (enclosed in conduit or trunking) | Ref. Methods C & F (clipped direct, on trays or in free air) | | | | | | | | | | | | | | | |
| | | | | | | | Cables touching, Trefoil | | Cables touching, Flat | | Cables spaced*, Flat | | | | | | | | | | | |
| 1 | 2 | 3 | | 4 | | 5 | | 6 | 7 | | 8 | | 9 | | | | | | | | | |
| mm ² | mV/A/m | mV/A/m | | mV/A/m | | mV/A/m | | mV/A/m | mV/A/m | | mV/A/m | | mV/A/m | | | | | | | | | |
| 1.0 | 44 | 44 | | 44 | | 44 | | 38 | 38 | | 38 | | 38 | | | | | | | | | |
| 1.5 | 29 | 29 | | 29 | | 29 | | 25 | 25 | | 25 | | 25 | | | | | | | | | |
| 2.5 | 18 | 18 | | 18 | | 18 | | 15 | 15 | | 15 | | 15 | | | | | | | | | |
| 4 | 11 | 11 | | 11 | | 11 | | 9.5 | 9.5 | | 9.5 | | 9.5 | | | | | | | | | |
| 6 | 7.3 | 7.3 | | 7.3 | | 7.3 | | 6.4 | 6.4 | | 6.4 | | 6.4 | | | | | | | | | |
| 10 | 4.4 | 4.4 | | 4.4 | | 4.4 | | 3.8 | 3.8 | | 3.8 | | 3.8 | | | | | | | | | |
| 16 | 2.8 | 2.8 | | 2.8 | | 2.8 | | 2.4 | 2.4 | | 2.4 | | 2.4 | | | | | | | | | |
| | | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 25 | 1.75 | 1.80 | 0.33 | 1.80 | 1.75 | 0.20 | 1.75 | 1.75 | 0.29 | 1.80 | 1.50 | 0.29 | 1.55 | 1.50 | 0.175 | 1.50 | 1.50 | 0.25 | 1.55 | 1.50 | 0.32 | 1.55 |
| 35 | 1.25 | 1.30 | 0.31 | 1.30 | 1.25 | 0.195 | 1.25 | 1.25 | 0.28 | 1.30 | 1.10 | 0.27 | 1.10 | 1.10 | 0.170 | 1.10 | 1.10 | 0.24 | 1.10 | 1.10 | 0.32 | 1.15 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



Standard



Flame Retardancy
BS EN 60332-1-2

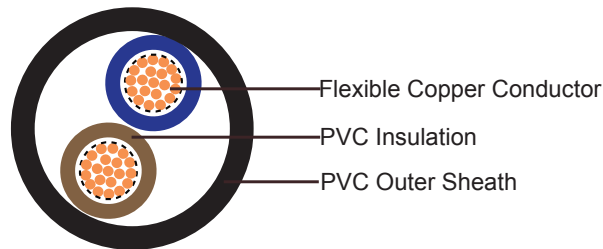
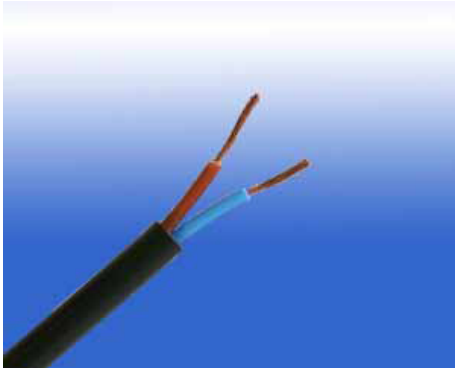


300/500V PVC Insulated, PVC Sheathed Power Cables (2-5 Cores)

FGD200 05VV-F (CU/PVC/PVC 300/500V Class 5)

BS Code: 3182Y/3183Y/3184Y/3185Y

HAR Code: H05VV-F



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS EN 50525-2-11(formerly BS 6500)

FIRE PERFORMANCE

| | |
|----------------------------------------------|--------------|
| Flame Retardance (Single Vertical Wire Test) | EN 60332-1-2 |
|----------------------------------------------|--------------|

VOLTAGE RATING

300/500V

CABLE CONSTRUCTION

Conductor: Flexible copper wire according to EN 60228 class 5.

Insulation: PVC Type TI 2 according to EN 50363-3.

Filling: For circular cable having two cores, the space between the cores shall be filled either by separate fillers or by the sheath filling the interstices. For circular cables with three, four or five cores, a centre filler may be used.

Outer Sheath: PVC Type TM 2 according to EN 50363-4-1. A tape may be applied around the core assembly before application of the sheath.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour

Cables and cords with a green-and-yellow cores

| No. of cores | Colour of cores ^b | | | | |
|----------------------|------------------------------|------|-------|-------|------|
| | Protective | Live | | | |
| 3 Cores | Yellow/Green | Blue | Brown | | |
| 4 Cores | Yellow/Green | - | Brown | Black | Grey |
| 4 Cores ^a | Yellow/Green | Blue | Brown | Black | |
| 5 Cores | Yellow/Green | Blue | Brown | Black | Grey |

^a For certain applications only.
^b In this table an uninsulated concentric conductor, such as a metallic sheath, armour or screen wire, is not regarded as a core. A concentric conductor is identified by its position and, therefore, need not be identified by colour.

Cables and cords without a green-and-yellow cores

| No. of cores | Colour of cores ^b | | | | |
|----------------------|------------------------------|-------|-------|------|-------|
| | | | | | |
| 2 Cores | Blue | Brown | | | |
| 3 Cores | - | Brown | Black | Grey | |
| 3 Cores ^a | Blue | Brown | Black | | |
| 4 Cores | Blue | Brown | Black | Grey | |
| 5 Cores | Blue | Brown | Black | Grey | Black |

^a For certain applications only.
^b In this table an uninsulated concentric conductor, such as a metallic sheath, armour or screen wire, is not regarded as a core. A concentric conductor is identified by its position and, therefore, need not be identified by colour.

Sheath Colour: Black (other colours can be offered upon request)

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (PVC): 70°C

Maximum short circuit temperature (5 Seconds): 150°C

Minimum bending radius:

Up to 12mm²: 3 x overall diameter

Above 12mm²: 4 x overall diameter

CONSTRUCTION PARAMETERS

| No. of Core X Cross Section | FGD200 05VV-F | | | |
|-----------------------------|------------------------------|--------------------------|--------------------------|----------------|
| | Nominal Insulation Thickness | Nominal Sheath Thickness | Maximum Overall Diameter | Approx. Weight |
| No. x mm ² | mm | mm | mm | kg/km |
| 2x0.75 | 0.6 | 0.8 | 7.2 | 57 |
| 2x1.0 | 0.6 | 0.8 | 7.5 | 65 |
| 2x1.5 | 0.7 | 0.8 | 8.6 | 87 |
| 2x2.5 | 0.8 | 1.0 | 10.6 | 134 |
| 2x4 | 0.8 | 1.1 | 12.1 | 174 |
| 3x0.75 | 0.6 | 0.8 | 7.6 | 68 |
| 3x1.0 | 0.6 | 0.8 | 8.0 | 79 |
| 3x1.5 | 0.7 | 0.9 | 9.4 | 111 |



| No. of Core X Cross Section | FGD200 05VV-F | | | |
|--------------------------------|---------------------------------|-----------------------------|--------------------------------|-------------------|
| | Nominal Insulation Thickness | Nominal Sheath Thickness | Maximum Overall Diameter | Approx. Weight |
| No. x mm ² | mm | mm | mm | kg/km |
| 3x2.5 | 0.8 | 1.1 | 11.4 | 169 |
| 3x4 | 0.8 | 1.2 | 13.1 | 233 |
| 4x0.75 | 0.6 | 0.8 | 8.3 | 84 |
| 4x1.0 | 0.6 | 0.9 | 9.0 | 101 |
| 4x1.5 | 0.7 | 1.0 | 10.5 | 142 |
| 4x2.5 | 0.8 | 1.1 | 12.5 | 211 |
| 4x4 | 0.8 | 1.2 | 14.3 | 292 |
| 5x0.75 | 0.6 | 0.9 | 9.3 | 106 |
| 5x1.0 | 0.6 | 0.9 | 9.8 | 123 |
| 5x1.5 | 0.7 | 1.1 | 11.6 | 176 |
| 5x2.5 | 0.8 | 1.2 | 13.9 | 262 |
| 5x4 | 0.8 | 1.4 | 16.1 | 369 |

ELECTRICAL PROPERTIES

Current-Carrying Capacities (Amp) according to BS7671:2008 table 4F3A

| Conductor cross-sectional area | Single-phase a.c. | Three-phase a.c. |
|--------------------------------|-------------------|------------------|
| mm ² | A | A |
| 0.75 | 6 | 6 |
| 1.0 | 10 | 10 |
| 1.5 | 16 | 16 |
| 2.5 | 25 | 20 |
| 4 | 32 | 25 |

Voltage Drop (Per Amp Per Meter) according to BS7671:2008 table 4F3B

| Conductor cross-sectional area | d.c. or single-phase a.c. | Three-phase a.c. |
|--------------------------------|---------------------------|------------------|
| mm ² | mV/A/m | mV/A/m |
| 0.75 | 62 | 54 |
| 1.0 | 46 | 40 |
| 1.5 | 32 | 27 |
| 2.5 | 19 | 16 |
| 4 | 12 | 10 |



Rated Voltage



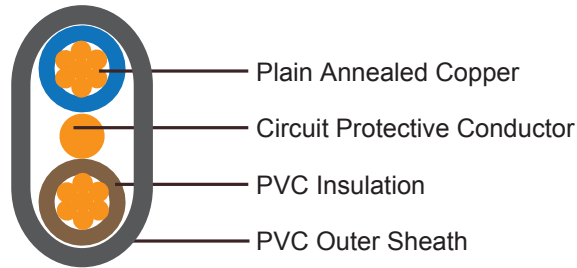
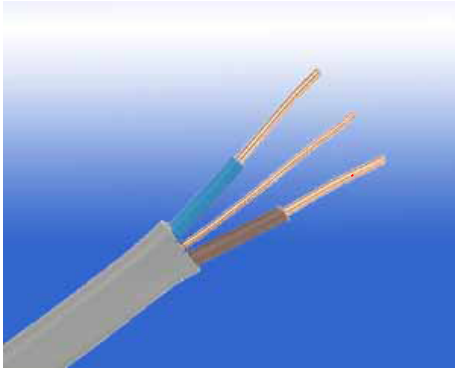
Standard



Flame Retardancy
EN 60332-1-2

300/500V PVC Insulated, PVC Sheathed, Twin & Earth Cables (2-3 Cores)

FGD200 05VV-U/R (CU/PVC/PVC 300/500V Class 1/2)
BS Code:6242Y/6243Y



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS 6004:2012

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 60332-1-2 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

300/500V

CABLE CONSTRUCTION

Conductor: Annealed copper conductor, class 1 (1.0mm² to 2.5mm²) or class 2 (4mm² to 35mm²) according to BS EN 60228.

Insulation: PVC Type TI 1 according to BS EN 50363-3.

Circuit Protective Conductor (CPC): Annealed plain copper (class 1 or 2)

Position of CPC: Centrally placed between cores in same plane (twin); centrally placed between black and grey cores in same plane(3-core).

Outer Sheath: PVC Type 6 according to BS 7655-4.2.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.



COLOUR CODE

Insulation Colour:

Twin: brown and blue, alternatively, for 2 x 1.0 and 2 x 1.5 cables, brown and brown;

3-core: brown, black (centre core), and grey

Sheath Colour: Grey. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (PVC): 70°C

Maximum short circuit temperature (5 Seconds): 160°C

Minimum bending radius: 6 x Overall Diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD200 05VV-U/R | | | | | |
|------------------------------|--------------------|------------------------------|---------------------------|--------------|--------------------------|--------------------------|----------------|
| No. of Cores X Cross Section | Class of Conductor | Nominal Insulation Thickness | Cross-Section Area of CPC | Class of CPC | Nominal Sheath Thickness | Maximum Overall Diameter | Approx. Weight |
| No. x mm ² | | mm | mm ² | | mm | mm | kg/km |
| 2x1.0 | 1 | 0.6 | 1.0 | 1 | 0.9 | 4.8x8.7 | 68 |
| 2x1.5 | 1 | 0.7 | 1.0 | 1 | 0.9 | 5.3x9.7 | 85 |
| 2x2.5 | 1 | 0.8 | 1.5 | 1 | 1.0 | 6.2x11.7 | 120 |
| 2x4.0 | 2 | 0.8 | 1.5 | 1 | 1.0 | 6.9x13.1 | 175 |
| 2x6.0 | 2 | 0.8 | 2.5 | 1 | 1.1 | 7.8x15.0 | 240 |
| 2x10.0 | 2 | 1.0 | 4 | 2 | 1.2 | 9.5x18.9 | 390 |
| 2x16.0 | 2 | 1.0 | 6 | 2 | 1.3 | 10.8x21.9 | 560 |
| 3x1.0 | 1 | 0.6 | 1.0 | 1 | 0.9 | 4.8x11.4 | 91 |
| 3x1.5 | 1 | 0.7 | 1.0 | 1 | 0.9 | 5.3x12.9 | 115 |
| 3x2.5 | 1 | 0.8 | 1.5 | 1 | 1.0 | 6.2x15.3 | 170 |
| 3x4.0 | 2 | 0.8 | 1.5 | 1 | 1.1 | 7.1x17.9 | 250 |
| 3x6.0 | 2 | 0.8 | 2.5 | 1 | 1.1 | 7.8x20.2 | 340 |
| 3x10.0 | 2 | 1.0 | 4 | 2 | 1.2 | 9.5x25.7 | 540 |
| 3x16.0 | 2 | 1.0 | 6 | 2 | 1.3 | 10.8x29.7 | 790 |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 70°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) and Voltage Drop (Per Amp Per Meter) according to BS7671:2008 table 4D5

| Conductor cross-sectional area | Reference Method 100# (above a plasterboard ceiling covered by thermal insulation not exceeding 100 mm in thickness) | Reference Method 101# (above a plasterboard ceiling covered by thermal insulation exceeding 100 mm in thickness) | Reference Method 102# (in a stud wall with thermal insulation with cable touching the inner wall surface) | Reference Method 103# (in a stud wall with thermal insulation with cable not touching the inner wall surface) | Reference Method C* (clipped direct) | Reference Method A* (enclosed in conduit in an insulated wall) | Voltage Drop (per ampere per meter) |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------------------------------|-------------------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| mm ² | A | A | A | A | A | A | mV/A/m |
| 1.0 | 13 | 10.5 | 13 | 8 | 16 | 11.5 | 44 |
| 1.5 | 16 | 13 | 16 | 10 | 20 | 14.5 | 29 |
| 2.5 | 21 | 17 | 21 | 13.5 | 27 | 20 | 18 |
| 4 | 27 | 22 | 27 | 17.5 | 37 | 26 | 11 |
| 6 | 34 | 27 | 35 | 23.5 | 47 | 32 | 7.3 |
| 10 | 45 | 36 | 47 | 32 | 64 | 44 | 4.4 |
| 16 | 57 | 46 | 63 | 42.5 | 85 | 57 | 2.8 |

A* For full installation method refer to Table 4A2 (BS 7671-2008) Installation Method 2 but for flat twin and earth cable

C* For full installation method refer to Table 4A2 (BS 7671-2008) Installation Method 20 but for flat twin and earth cable

100# For full installation method refer to Table 4A2 (BS 7671-2008) Installation Method 100

102# For full installation method refer to Table 4A2 (BS 7671-2008) Installation Method 102

103# For full installation method refer to Table 4A2 (BS 7671-2008) Installation Method 103

Wherever practicable, a cable is to be fixed in a position such that it will not be covered with thermal insulation.

Regulation 523.7, BS 5803-5 Appendix C: Avoidance of overheating of electric cables, Building Regulations

Approved document B and Thermal insulation: avoiding risks, BR 262, BRE, 2001 refer.



Rated Voltage



Standard



Flame Retardancy
BS EN 60332-1-2

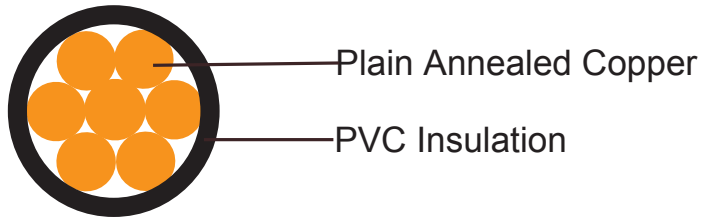


300/500V PVC Insulated, Non-sheathed Power Cables (Single Core)

FGD100 05V-U/R/K (CU/PVC 300/500V Class 1/2/5)

BS Code: 2491X

HAR Code: H05V-U, H05V-R, H05V-K



APPLICATION

This cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS EN 50525-2-31(formerly BS 6004:2000)

FIRE PERFORMANCE

| | |
|----------------------------------------------|--------------|
| Flame Retardance (Single Vertical Wire Test) | EN 60332-1-2 |
|----------------------------------------------|--------------|

VOLTAGE RATING

300/500V

CABLE CONSTRUCTION

Conductor:

H05V-U: Class 1 solid copper conductor to BS EN 60228.

H05V-R: Class 2 stranded copper conductor to BS EN 60228.

H05V-K: Class 5 stranded copper conductor to BS EN 60228.

Insulation: PVC Type TI 1 according to BS EN 50363-3.

COLOUR CODE

Black, Blue, Brown, Grey, Orange, Pink, Red, Turquoise, Violet, White, Green and Yellow. Bi-colours of any combination of the above mono-colours are permitted.

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (PVC): 70°C

Maximum short circuit temperature (5 Seconds): 160°C

Minimum bending radius:

Up to 8mm²: 4 x overall diameter

8mm² to 12mm²: 5 x overall diameter

Above 12mm²: 6 x overall diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD100 05V-U/R/K | | |
|-----------------------------|--------------------|------------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Maximum Overall Diameter | Approx. Weight |
| No. x mm ² | | mm | mm | kg/km |
| 1x0.5 | 1 | 0.6 | 2.3 | 8 |
| 1x0.75 | 1 | 0.6 | 2.5 | 11 |
| 1x1.0 | 1 | 0.6 | 2.7 | 14 |
| 1x0.5 | 2 | 0.6 | 2.4 | 9 |
| 1x0.75 | 2 | 0.6 | 2.6 | 12 |
| 1x1.0 | 2 | 0.6 | 2.8 | 14 |
| 1x0.5 | 5 | 0.6 | 2.5 | 8 |
| 1x0.75 | 5 | 0.6 | 2.7 | 11 |
| 1x1.0 | 5 | 0.6 | 2.8 | 13 |

ELECTRICAL PROPERTIES

Current-Carrying Capacities (Amp) according to BS 7671:2008 table 4D1A

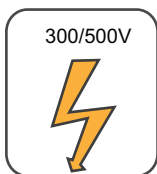
| Conductor cross-sectional area | PVC insulated types (HD 21) | |
|--------------------------------|-----------------------------|------------------|
| | single-phase a.c. | three-phase a.c. |
| mm ² | A | A |
| 0.5 | 3 | 3 |
| 0.75 | 6 | 6 |
| 1.0 | 10 | 10 |

Note: These values apply to the majority of cases. Further information should be sought in unusual cases eg.:

- (i) When high ambient temperatures are involved, ie. above 30°C
- (ii) Where long lengths are used
- (iii) Where ventilation is restricted
- (iv) Where the cords are used for other purposes, eg. internal wiring of apparatus.

Voltage Drop (Per Amp Per Meter) according to BS 7671:2008 table 4D1B

| Conductor cross-sectional area | d.c. or single-phase a.c. | Three-phase a.c. |
|--------------------------------|---------------------------|------------------|
| | mV/A/m | mV/A/m |
| mm ² | | |
| 0.5 | 93 | 80 |
| 0.75 | 62 | 54 |
| 1.0 | 46 | 40 |



Rated Voltage



Standard



Flame Retardancy
EN 60332-1-2

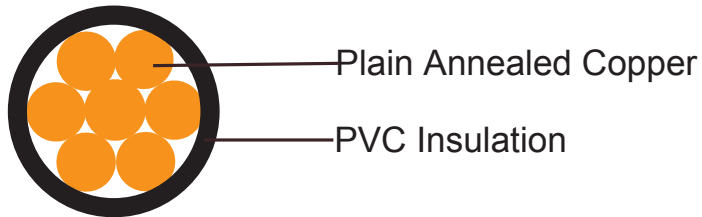


300/500V PVC Insulated, Non-sheathed Power Cables (Single Core 90°C)

FGD100 05V2-U/R/K (CU/PVC 300/500V Class 1/2/5)

BS Code: 2491XHR

HAR Code: H05V2-U, H05V2-R, H05V2-K



APPLICATION

This cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS EN 50525-2-31(formerly BS 6004:2000)

FIRE PERFORMANCE

| | |
|----------------------------------------------|--------------|
| Flame Retardance (Single Vertical Wire Test) | EN 60332-1-2 |
|----------------------------------------------|--------------|

VOLTAGE RATING

300/500V

CABLE CONSTRUCTION

Conductor:

H05V2-U: Class 1 solid copper conductor to BS EN 60228.

H05V2-R: Class 2 stranded copper conductor to BS EN 60228.

H05V2-K: Class 5 stranded copper conductor to BS EN 60228.

Insulation: PVC Type TI 3 according to BS EN 50363-3.

COLOUR CODE

Black, Blue, Brown, Grey, Orange, Pink, Red, Turquoise, Violet, White, Green and Yellow. Bi-colours of any combination of the above mono-colours are permitted.

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (PVC): 90°C

Maximum short circuit temperature (5 Seconds): 160°C

Minimum bending radius:

Up to 8mm²: 4 x overall diameter

8mm² to 12mm²: 5 x overall diameter

Above 12mm²: 6 x overall diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD100 05V2-U/R/K | | |
|-----------------------------|--------------------|------------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Maximum Overall Diameter | Approx. Weight |
| No. x mm ² | | mm | mm | kg/km |
| 1x0.5 | 1 | 0.6 | 2.3 | 8 |
| 1x0.75 | 1 | 0.6 | 2.5 | 11 |
| 1x1.0 | 1 | 0.6 | 2.7 | 14 |
| 1x0.5 | 2 | 0.6 | 2.4 | 9 |
| 1x0.75 | 2 | 0.6 | 2.6 | 12 |
| 1x1.0 | 2 | 0.6 | 2.8 | 14 |
| 1x0.5 | 5 | 0.6 | 2.5 | 8 |
| 1x0.75 | 5 | 0.6 | 2.7 | 11 |
| 1x1.0 | 5 | 0.6 | 2.8 | 13 |

ELECTRICAL PROPERTIES

Current-Carrying Capacities (Amp) according to HD516 Table 7 (a)

| Conductor cross-sectional area | PVC insulated types (HD 21) | |
|--------------------------------|-----------------------------|------------------|
| | single-phase a.c. | three-phase a.c. |
| mm ² | A | A |
| 0.5 | 3 | 3 |
| 0.75 | 6 | 6 |
| 1.0 | 10 | 10 |

Note: These values apply to the majority of cases. Further information should be sought in unusual cases eg.:

(i) When high ambient temperatures are involved, ie. above 30°C

(ii) Where long lengths are used

(iii) Where ventilation is restricted

(iv) Where the cords are used for other purposes, e.g. internal wiring of apparatus.



Voltage Drop (Per Amp Per Meter) according to BS 7671:2008 table 4E1B

| Nominal Cross Section Area | 2 cables d.c. | 2 cables, single-phase a.c. | | | 3 or 4 cables, three-phase a.c. | | | |
|----------------------------|---------------|--------------------------------------------------------|-----------------------------------------------------------------|------------------|------------------------------------------------------|-----------------------------------------------------------------|-----------------------|----------------------|
| | | Ref. Methods A and B (enclosed in conduit or trunking) | Ref. Methods C, F & G (clipped direct, on trays or in free air) | | Ref. Methods A & B (enclosed in conduit or trunking) | Ref. Methods C, F & G (clipped direct, on trays or in free air) | | |
| | | | Cables touching 4 | Cables spaced* 5 | | Cables touching, Trefoil | Cables touching, Flat | Cables spaced*, Flat |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| mm ² | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m |
| 0.5 | 93 | 93 | 93 | 93 | 80 | 80 | 80 | 80 |
| 0.75 | 62 | 62 | 62 | 62 | 54 | 54 | 54 | 54 |
| 1.0 | 46 | 46 | 46 | 46 | 40 | 40 | 40 | 40 |



Rated Voltage



Standard



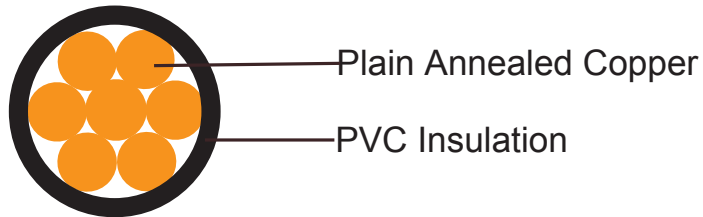
Flame Retardancy
EN 60332-1-2

450/750V PVC Insulated, Non-sheathed Power Cables (Single Core)

FGD100 07V-U/R/K (CU/PVC 450/750V Class 1/2/5)

BS Code: 6491X

HAR Code: H07V-U, H07V-R, H07V-K



APPLICATION

This cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS EN 50525-2-31(formerly BS 6004:2000)

FIRE PERFORMANCE

| | |
|----------------------------------------------|--------------|
| Flame Retardance (Single Vertical Wire Test) | EN 60332-1-2 |
|----------------------------------------------|--------------|

VOLTAGE RATING

450/750V

CABLE CONSTRUCTION

Conductor:

H07V-U: Class 1 solid copper conductor to BS EN 60228.

H07V-R: Class 2 stranded copper conductor to BS EN 60228.

H07V-K: Class 5 stranded copper conductor to BS EN 60228.

Insulation: PVC Type TI 1 according to BS EN 50363-3.

COLOUR CODE

Black, Blue, Brown, Grey, Orange, Pink, Red, Turquoise, Violet, White, Green/Yellow.

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (PVC): 70°C



Maximum short circuit temperature (5 Seconds): 160°C

Minimum bending radius:

Up to 8mm²: 4 x overall diameter

8mm² to 12mm²: 5 x overall diameter

Above 12mm²: 6 x overall diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD100 07V-U/R/K | | |
|-----------------------------|--------------------|------------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Maximum Overall Diameter | Approx. Weight |
| No. x mm ² | | mm | mm | kg/km |
| 1x1.5 | 1 | 0.7 | 3.2 | 21 |
| 1x2.5 | 1 | 0.8 | 3.9 | 33 |
| 1x4.0 | 1 | 0.8 | 4.4 | 49 |
| 1x6.0 | 1 | 0.8 | 5.0 | 69 |
| 1x10 | 1 | 1.0 | 6.4 | 115 |
| 1x1.5 | 2 | 0.7 | 3.3 | 23 |
| 1x2.5 | 2 | 0.8 | 4.0 | 35 |
| 1x4.0 | 2 | 0.8 | 4.6 | 51 |
| 1x6.0 | 2 | 0.8 | 5.2 | 71 |
| 1x10 | 2 | 1.0 | 6.7 | 120 |
| 1x16 | 2 | 1.0 | 7.8 | 170 |
| 1x25 | 2 | 1.2 | 9.7 | 260 |
| 1x35 | 2 | 1.2 | 10.9 | 350 |
| 1x50 | 2 | 1.4 | 12.8 | 480 |
| 1x70 | 2 | 1.4 | 14.6 | 680 |
| 1x95 | 2 | 1.6 | 17.1 | 930 |
| 1x120 | 2 | 1.6 | 18.8 | 1160 |
| 1x150 | 2 | 1.8 | 20.9 | 1430 |
| 1x185 | 2 | 2.0 | 23.3 | 1780 |
| 1x240 | 2 | 2.2 | 26.6 | 2360 |
| 1x300 | 2 | 2.4 | 29.6 | 2940 |
| 1x400 | 2 | 2.6 | 33.2 | 3740 |
| 1x500 | 2 | 2.8 | 36.9 | 4950 |
| 1x630 | 2 | 2.8 | 41.1 | 6300 |
| 1x800 | 2 | 2.8 | 45.7 | 8610 |
| 1x1000 | 2 | 3.0 | 51.0 | 10820 |
| 1x1.5 | 5 | 0.7 | 3.4 | 20 |

| Conductor | | FGD100 07V-U/R/K | | |
|-----------------------------|--------------------|------------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Maximum Overall Diameter | Approx. Weight |
| No. x mm ² | | mm | mm | kg/km |
| 1x2.5 | 5 | 0.8 | 4.1 | 31 |
| 1x4.0 | 5 | 0.8 | 4.8 | 48 |
| 1x6.0 | 5 | 0.8 | 5.3 | 69 |
| 1x10 | 5 | 1.0 | 6.8 | 121 |
| 1x16 | 5 | 1.0 | 8.1 | 211 |
| 1x25 | 5 | 1.2 | 10.2 | 303 |
| 1x35 | 5 | 1.2 | 11.7 | 417 |
| 1x50 | 5 | 1.4 | 13.9 | 539 |
| 1x70 | 5 | 1.4 | 16.0 | 730 |
| 1x95 | 5 | 1.6 | 18.2 | 900 |
| 1x120 | 5 | 1.6 | 20.2 | 1135 |
| 1x150 | 5 | 1.8 | 22.5 | 1410 |
| 1x185 | 5 | 2.0 | 24.9 | 1845 |
| 1x240 | 5 | 2.2 | 28.4 | 2270 |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 70°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671:2008 table 4D1A

| Conductor cross-sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc) | | Reference Method B (enclosed in conduit on a wall or in trunking etc) | | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray horizontal or vertical etc) | | | | |
|--------------------------------|---------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------|---------------------------------|-------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------|------------------------------------|-----------------------------------------------------------------------|----|
| | | | | | | | Touching | | | Spaced by one cable diameter | |
| | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. flat and touching | 3 or 4 cables, three-phase a.c. flat and touching or trefoil | 2 cables, single-phase a.c. or d.c. flat | 3 cables, three-phase a.c. flat | 3 cables, three-phase a.c. trefoil | 2 cables, single-phase a.c. or d.c. or 3 cables three-phase a.c. flat | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| mm ² | A | A | A | A | A | A | A | A | A | A | A |
| 1.5 | 14.5 | 13.5 | 17.5 | 15.5 | 20 | 18 | - | - | - | - | - |
| 2.5 | 20 | 18 | 24 | 21 | 27 | 25 | - | - | - | - | - |



Caledonian

Flame Retardant Power & Control Cables

www.caledonian-cables.co.uk www.addison-cables.com



| Conductor cross-sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc) | | Reference Method B (enclosed in conduit on a wall or in trunking etc) | | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray horizontal or vertical etc) | | | | |
|--------------------------------|---------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------|---------------------------------|-------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------|------------------------------------|-----------------------------------------------------------------------|----------|
| | | | | | | | Touching | | | Spaced by one cable diameter | |
| | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. flat and touching | 3 or 4 cables, three-phase a.c. flat and touching or trefoil | 2 cables, single-phase a.c. or d.c. flat | 3 cables, three-phase a.c. flat | 3 cables, three-phase a.c. trefoil | 2 cables, single-phase a.c. or d.c. or 3 cables three-phase a.c. flat | |
| | | | | | | | | | | Horizontal | Vertical |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| mm ² | A | A | A | A | A | A | A | A | A | A | A |
| 4 | 26 | 24 | 32 | 28 | 37 | 33 | - | - | - | - | - |
| 6 | 34 | 31 | 41 | 36 | 47 | 43 | - | - | - | - | - |
| 10 | 46 | 42 | 57 | 50 | 65 | 59 | - | - | - | - | - |
| 16 | 61 | 56 | 76 | 68 | 87 | 79 | - | - | - | - | - |
| 25 | 80 | 73 | 101 | 89 | 114 | 104 | 131 | 114 | 110 | 146 | 130 |
| 35 | 99 | 89 | 125 | 110 | 141 | 129 | 162 | 143 | 137 | 181 | 162 |
| 50 | 119 | 108 | 151 | 134 | 182 | 167 | 196 | 174 | 167 | 219 | 197 |
| 70 | 151 | 136 | 192 | 171 | 234 | 214 | 251 | 225 | 216 | 281 | 254 |
| 95 | 182 | 164 | 232 | 207 | 284 | 261 | 304 | 275 | 264 | 341 | 311 |
| 120 | 210 | 188 | 269 | 239 | 330 | 303 | 352 | 321 | 308 | 396 | 362 |
| 150 | 240 | 216 | 300 | 262 | 381 | 349 | 406 | 372 | 356 | 456 | 419 |
| 185 | 273 | 245 | 341 | 296 | 436 | 400 | 463 | 427 | 409 | 521 | 480 |
| 240 | 321 | 286 | 400 | 346 | 515 | 472 | 546 | 507 | 485 | 615 | 569 |
| 300 | 367 | 328 | 458 | 394 | 594 | 545 | 629 | 587 | 561 | 709 | 659 |
| 400 | - | - | 546 | 467 | 694 | 634 | 754 | 689 | 656 | 852 | 795 |
| 500 | - | - | 626 | 533 | 792 | 723 | 868 | 789 | 749 | 982 | 920 |
| 630 | - | - | 720 | 611 | 904 | 826 | 1005 | 905 | 855 | 1138 | 1070 |
| 800 | - | - | - | - | 1030 | 943 | 1086 | 1020 | 971 | 1265 | 1188 |
| 1000 | - | - | - | - | 1154 | 1058 | 1216 | 1149 | 1079 | 1420 | 1337 |

Voltage Drop (Per Amp Per Meter) according to BS 7671:2008 table 4D1B

| Nominal Cross Section Area | 2 cables d.c. | 2 cables, single-phase a.c. | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | | | | | | | | | | |
|----------------------------|---------------|--------------------------------------------------------|------|------|--------------------------------------------------------------|-------|-------|------------------------------------------------------|--------------------------------------------------------------|------|--------|-----------------------|------|-------|----------------------|-------|-------|--------|------|-------|------|------|-------|------|------|
| | | Ref. Methods A and B (enclosed in conduit or trunking) | | | Ref. Methods C & F (clipped direct, on trays or in free air) | | | Ref. Methods A & B (enclosed in conduit or trunking) | Ref. Methods C & F (clipped direct, on trays or in free air) | | | | | | | | | | | | | | | | |
| | | Cables touching | | | Cables spaced* | | | | Cables touching, Trefoil | | | Cables touching, Flat | | | Cables spaced*, Flat | | | | | | | | | | |
| 1 | 2 | 3 | | | 4 | | | 5 | | | 6 | 7 | | | 8 | | | 9 | | | | | | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | | | | | |
| 1.5 | 29 | 29 | | | 29 | | | 29 | | | 25 | 25 | | | 25 | | | 25 | | | | | | | |
| 2.5 | 18 | 18 | | | 18 | | | 18 | | | 15 | 15 | | | 15 | | | 15 | | | | | | | |
| 4 | 11 | 11 | | | 11 | | | 11 | | | 9.5 | 9.5 | | | 9.5 | | | 9.5 | | | | | | | |
| 6 | 7.3 | 7.3 | | | 7.3 | | | 7.3 | | | 6.4 | 6.4 | | | 6.4 | | | 6.4 | | | | | | | |
| 10 | 4.4 | 4.4 | | | 4.4 | | | 4.4 | | | 3.8 | 3.8 | | | 3.8 | | | 3.8 | | | | | | | |
| 16 | 2.8 | 2.8 | | | 2.8 | | | 2.8 | | | 2.4 | 2.4 | | | 2.4 | | | 2.4 | | | | | | | |
| | | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 25 | 1.75 | 1.80 | 0.33 | 1.80 | 1.75 | 0.20 | 1.75 | 1.75 | 0.29 | 1.80 | 1.50 | 0.29 | 1.55 | 1.50 | 0.175 | 1.50 | 1.50 | 0.25 | 1.55 | 1.50 | 0.32 | 1.55 | 1.50 | 0.32 | 1.55 |
| 35 | 1.25 | 1.30 | 0.31 | 1.30 | 1.25 | 0.195 | 1.25 | 1.25 | 0.28 | 1.30 | 1.10 | 0.27 | 1.10 | 1.10 | 0.170 | 1.10 | 1.10 | 0.24 | 1.10 | 1.10 | 0.32 | 1.15 | 1.10 | 0.32 | 1.15 |
| 50 | 0.93 | 0.95 | 0.3 | 1.0 | 0.93 | 0.19 | 0.95 | 0.93 | 0.28 | 0.97 | 0.81 | 0.26 | 0.85 | 0.8 | 0.165 | 0.82 | 0.8 | 0.24 | 0.84 | 0.8 | 0.32 | 0.86 | 0.8 | 0.32 | 0.86 |
| 70 | 0.63 | 0.65 | 0.29 | 0.72 | 0.63 | 0.185 | 0.66 | 0.63 | 0.27 | 0.69 | 0.56 | 0.25 | 0.61 | 0.55 | 0.16 | 0.57 | 0.55 | 0.24 | 0.6 | 0.55 | 0.31 | 0.63 | 0.55 | 0.31 | 0.63 |
| 95 | 0.46 | 0.49 | 0.28 | 0.56 | 0.47 | 0.18 | 0.5 | 0.47 | 0.27 | 0.54 | 0.42 | 0.24 | 0.48 | 0.41 | 0.155 | 0.43 | 0.41 | 0.23 | 0.47 | 0.4 | 0.31 | 0.51 | 0.4 | 0.31 | 0.51 |
| 120 | 0.36 | 0.39 | 0.27 | 0.47 | 0.37 | 0.175 | 0.41 | 0.37 | 0.26 | 0.45 | 0.33 | 0.23 | 0.41 | 0.32 | 0.15 | 0.36 | 0.32 | 0.23 | 0.4 | 0.32 | 0.3 | 0.44 | 0.32 | 0.3 | 0.44 |
| 150 | 0.29 | 0.31 | 0.27 | 0.41 | 0.3 | 0.175 | 0.34 | 0.29 | 0.26 | 0.39 | 0.27 | 0.23 | 0.36 | 0.26 | 0.15 | 0.3 | 0.26 | 0.23 | 0.34 | 0.26 | 0.3 | 0.4 | 0.26 | 0.3 | 0.4 |
| 185 | 0.23 | 0.25 | 0.27 | 0.37 | 0.24 | 0.17 | 0.29 | 0.24 | 0.26 | 0.35 | 0.22 | 0.23 | 0.32 | 0.21 | 0.145 | 0.26 | 0.21 | 0.22 | 0.31 | 0.21 | 0.3 | 0.36 | 0.21 | 0.3 | 0.36 |
| 240 | 0.18 | 0.195 | 0.26 | 0.33 | 0.185 | 0.165 | 0.25 | 0.185 | 0.25 | 0.31 | 0.17 | 0.23 | 0.29 | 0.16 | 0.145 | 0.22 | 0.16 | 0.22 | 0.27 | 0.16 | 0.29 | 0.34 | 0.16 | 0.29 | 0.34 |
| 300 | 0.145 | 0.16 | 0.26 | 0.31 | 0.15 | 0.165 | 0.22 | 0.15 | 0.25 | 0.29 | 0.14 | 0.23 | 0.27 | 0.13 | 0.14 | 0.19 | 0.13 | 0.22 | 0.25 | 0.13 | 0.29 | 0.32 | 0.13 | 0.29 | 0.32 |
| 400 | 0.105 | 0.13 | 0.26 | 0.29 | 0.12 | 0.16 | 0.2 | 0.115 | 0.25 | 0.27 | 0.12 | 0.22 | 0.25 | 0.105 | 0.14 | 0.175 | 0.105 | 0.21 | 0.24 | 0.1 | 0.29 | 0.31 | 0.1 | 0.29 | 0.31 |
| 500 | 0.086 | 0.11 | 0.26 | 0.28 | 0.098 | 0.155 | 0.185 | 0.093 | 0.24 | 0.26 | 0.1 | 0.22 | 0.25 | 0.086 | 0.135 | 0.16 | 0.086 | 0.21 | 0.23 | 0.081 | 0.29 | 0.3 | 0.081 | 0.29 | 0.3 |
| 630 | 0.068 | 0.094 | 0.25 | 0.27 | 0.081 | 0.155 | 0.175 | 0.076 | 0.24 | 0.25 | 0.08 | 0.22 | 0.24 | 0.072 | 0.135 | 0.15 | 0.072 | 0.21 | 0.22 | 0.066 | 0.28 | 0.29 | 0.066 | 0.28 | 0.29 |
| 800 | 0.053 | - | - | - | 0.068 | 0.15 | 0.165 | 0.061 | 0.24 | 0.25 | - | - | - | 0.06 | 0.13 | 0.145 | 0.06 | 0.21 | 0.22 | 0.053 | 0.28 | 0.29 | 0.053 | 0.28 | 0.29 |
| 1000 | 0.042 | - | - | - | 0.059 | 0.15 | 0.16 | 0.05 | 0.24 | 0.24 | - | - | - | 0.052 | 0.13 | 0.14 | 0.052 | 0.2 | 0.21 | 0.044 | 0.28 | 0.28 | 0.044 | 0.28 | 0.28 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



Standard



Flame Retardancy
EN 60332-1-2

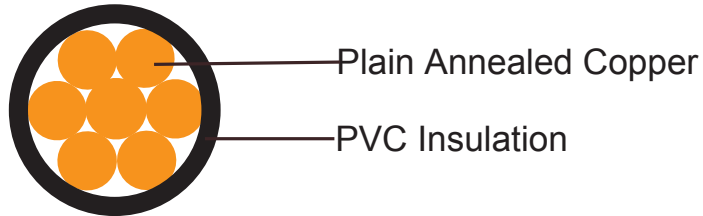


450/750V PVC Insulated, Non-sheathed Power Cables (Single Core 90°C)

FGD100 07V2-U/R/K (CU/PVC 450/750V Class 1/2/5)

BS Code: 6491XHR

HAR Code: H07V2-U, H07V2-R, H07V2-K



APPLICATION

This cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS EN 50525-2-31(formerly BS 6004:2000)

FIRE PERFORMANCE

| | |
|----------------------------------------------|--------------|
| Flame Retardance (Single Vertical Wire Test) | EN 60332-1-2 |
|----------------------------------------------|--------------|

VOLTAGE RATING

450/750V

CABLE CONSTRUCTION

Conductor:

H07V2-U: Class 1 solid copper conductor to BS EN 60228.

H07V2-R: Class 2 stranded copper conductor to BS EN 60228.

H07V2-K: Class 5 stranded copper conductor to BS EN 60228.

Insulation: PVC Type TI 3 according to BS EN 50363-3.

COLOUR CODE

Black, Blue, Brown, Grey, Orange, Pink, Red, Turquoise, Violet, White, Green/Yellow.

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (PVC): 90°C

Maximum short circuit temperature (5 Seconds): 160°C

Minimum bending radius:

Up to 8mm²: 4 x overall diameter

8mm² to 12mm²: 5 x overall diameter

Above 12mm²: 6 x overall diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD100 07V2-U/R/K | | |
|-----------------------------|--------------------|------------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Maximum Overall Diameter | Approx. Weight |
| No. x mm ² | | mm | mm | kg/km |
| 1x1.5 | 1 | 0.7 | 3.2 | 21 |
| 1x2.5 | 1 | 0.8 | 3.9 | 33 |
| 1x4.0 | 1 | 0.8 | 4.4 | 49 |
| 1x6.0 | 1 | 0.8 | 5.0 | 69 |
| 1x10 | 1 | 1.0 | 6.4 | 115 |
| 1x1.5 | 2 | 0.7 | 3.3 | 23 |
| 1x2.5 | 2 | 0.8 | 4.0 | 35 |
| 1x4.0 | 2 | 0.8 | 4.6 | 51 |
| 1x6.0 | 2 | 0.8 | 5.2 | 71 |
| 1x10 | 2 | 1.0 | 6.7 | 120 |
| 1x16 | 2 | 1.0 | 7.8 | 170 |
| 1x25 | 2 | 1.2 | 9.7 | 260 |
| 1x35 | 2 | 1.2 | 10.9 | 350 |
| 1x50 | 2 | 1.4 | 12.8 | 480 |
| 1x70 | 2 | 1.4 | 14.6 | 680 |
| 1x95 | 2 | 1.6 | 17.1 | 930 |
| 1x120 | 2 | 1.6 | 18.8 | 1160 |
| 1x150 | 2 | 1.8 | 20.9 | 1430 |
| 1x185 | 2 | 2.0 | 23.3 | 1780 |
| 1x240 | 2 | 2.2 | 26.6 | 2360 |
| 1x300 | 2 | 2.4 | 29.6 | 2940 |
| 1x400 | 2 | 2.6 | 33.2 | 3740 |
| 1x500 | 2 | 2.8 | 36.9 | 4950 |
| 1x630 | 2 | 2.8 | 41.1 | 6300 |
| 1x800 | 2 | 2.8 | 45.7 | 8610 |
| 1x1000 | 2 | 3.0 | 51.0 | 10820 |



| Conductor | | FGD100 07V2-U/R/K | | |
|-----------------------------|--------------------|------------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Maximum Overall Diameter | Approx. Weight |
| No. x mm ² | | mm | mm | kg/km |
| 1x1.5 | 5 | 0.7 | 3.4 | 20 |
| 1x2.5 | 5 | 0.8 | 4.1 | 31 |
| 1x4.0 | 5 | 0.8 | 4.8 | 48 |
| 1x6.0 | 5 | 0.8 | 5.3 | 69 |
| 1x10 | 5 | 1.0 | 6.8 | 121 |
| 1x16 | 5 | 1.0 | 8.1 | 211 |
| 1x25 | 5 | 1.2 | 10.2 | 303 |
| 1x35 | 5 | 1.2 | 11.7 | 417 |
| 1x50 | 5 | 1.4 | 13.9 | 539 |
| 1x70 | 5 | 1.4 | 16.0 | 730 |
| 1x95 | 5 | 1.6 | 18.2 | 900 |
| 1x120 | 5 | 1.6 | 20.2 | 1135 |
| 1x150 | 5 | 1.8 | 22.5 | 1410 |
| 1x185 | 5 | 2.0 | 24.9 | 1845 |
| 1x240 | 5 | 2.2 | 28.4 | 2270 |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671:2008 table 4E1A

| Conductor cross-sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc) | | Reference Method B (enclosed in conduit on a wall or in trunking etc) | | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray, horizontal or vertical etc) Touching | | | Reference Method G (in free air) Spaced by one cable diameter | |
|--------------------------------|---------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------|---------------------------------|-------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------|-----------------------------------------------------------------------|----|
| | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. flat and touching | 3 or 4 cables, three-phase a.c. flat and touching or trefoil | 2 cables, single-phase a.c. or d.c. flat | 3 cables, three-phase a.c. flat | 3 cables, three-phase a.c. trefoil | 2 cables, single-phase a.c. or d.c. or 3 cables three-phase a.c. flat | |
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| mm ² | A | A | A | A | A | A | A | A | A | A | A |
| 1.5 | 19 | 17 | 23 | 20 | 25 | 23 | - | - | - | - | - |

| Conductor cross-sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc) | | Reference Method B (enclosed in conduit on a wall or in trunking etc) | | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray, horizontal or vertical etc) Touching | | | Reference Method G (in free air) Spaced by one cable diameter | |
|--------------------------------|---------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------|---------------------------------|-------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------|-----------------------------------------------------------------------|----------|
| | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. flat and touching | 3 or 4 cables, three-phase a.c. flat and touching or trefoil | 2 cables, single-phase a.c. or d.c. flat | 3 cables, three-phase a.c. flat | 3 cables, three-phase a.c. trefoil | 2 cables, single-phase a.c. or d.c. or 3 cables three-phase a.c. flat | |
| | | | | | | | | | | Horizontal | Vertical |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| mm ² | A | A | A | A | A | A | A | A | A | A | A |
| 2.5 | 26 | 23 | 31 | 28 | 34 | 31 | - | - | - | - | - |
| 4.0 | 35 | 31 | 42 | 37 | 46 | 41 | - | - | - | - | - |
| 6.0 | 45 | 40 | 54 | 48 | 59 | 54 | - | - | - | - | - |
| 10 | 61 | 54 | 75 | 66 | 81 | 74 | - | - | - | - | - |
| 16 | 81 | 73 | 100 | 88 | 109 | 99 | - | - | - | - | - |
| 25 | 106 | 95 | 133 | 117 | 143 | 130 | 161 | 141 | 135 | 182 | 161 |
| 35 | 131 | 117 | 164 | 144 | 176 | 161 | 200 | 176 | 169 | 226 | 201 |
| 50 | 158 | 141 | 198 | 175 | 228 | 209 | 242 | 216 | 207 | 275 | 246 |
| 70 | 200 | 179 | 253 | 222 | 293 | 268 | 310 | 279 | 268 | 353 | 318 |
| 95 | 241 | 216 | 306 | 269 | 355 | 326 | 377 | 342 | 328 | 430 | 389 |
| 120 | 278 | 249 | 354 | 312 | 413 | 379 | 437 | 400 | 383 | 500 | 454 |
| 150 | 318 | 285 | 393 | 342 | 476 | 436 | 504 | 464 | 444 | 577 | 527 |
| 185 | 362 | 324 | 449 | 384 | 545 | 500 | 575 | 533 | 510 | 661 | 605 |
| 240 | 424 | 380 | 528 | 450 | 644 | 590 | 679 | 634 | 607 | 781 | 719 |

Voltage Drop (Per Amp Per Meter) according to BS 7671:2008 table 4E1B

| Nominal Cross Section Area | 2 cables d.c. | 2 cables, single-phase a.c. | | | 3 or 4 cables, three-phase a.c. | | | |
|----------------------------|---------------|--------------------------------------------------------|-----------------------------------------------------------------|------------------|------------------------------------------------------|-----------------------------------------------------------------|-----------------------|----------------------|
| | | Ref. Methods A and B (enclosed in conduit or trunking) | Ref. Methods C, F & G (clipped direct, on trays or in free air) | | Ref. Methods A & B (enclosed in conduit or trunking) | Ref. Methods C, F & G (clipped direct, on trays or in free air) | | |
| | | | Cables touching | Cables spaced* 5 | | Cables touching, Trefoil | Cables touching, Flat | Cables spaced*, Flat |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| mm ² | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m |
| 1.5 | 31 | 31 | 31 | 31 | 27 | 27 | 27 | 27 |



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| Nominal Cross Section Area | 2 cables d.c. | 2 cables, single-phase a.c. | | | | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | | | | |
|----------------------------|---------------|--------------------------------------------------------|------|------|-----------------------------------------------------------------|-------|------|------------------|------|------|------------------------------------------------------|-----------------------------------------------------------------|------|------|-----------------------|------|------|----------------------|------|------|------|------|
| | | Ref. Methods A and B (enclosed in conduit or trunking) | | | Ref. Methods C, F & G (clipped direct, on trays or in free air) | | | | | | Ref. Methods A & B (enclosed in conduit or trunking) | Ref. Methods C, F & G (clipped direct, on trays or in free air) | | | | | | | | | | |
| | | | | | Cables touching 4 | | | Cables spaced* 5 | | | | Cables touching, Trefoil | | | Cables touching, Flat | | | Cables spaced*, Flat | | | | |
| 1 | 2 | 3 | | | 4 | | | 5 | | | 6 | 7 | | | 8 | | | 9 | | | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | | |
| 2.5 | 19 | 19 | | | 19 | | | 19 | | | 16 | 16 | | | 16 | | | 16 | | | | |
| 4.0 | 12 | 12 | | | 12 | | | 12 | | | 10 | 10 | | | 10 | | | 10 | | | | |
| 6.0 | 7.9 | 7.9 | | | 7.9 | | | 7.9 | | | 6.8 | 6.8 | | | 6.8 | | | 6.8 | | | | |
| 10 | 4.7 | 4.7 | | | 4.7 | | | 4.7 | | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | | | | |
| 16 | 2.9 | 2.9 | | | 2.9 | | | 2.9 | | | 2.5 | 2.5 | | | 2.5 | | | 2.5 | | | | |
| | | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 25 | 1.85 | 1.85 | 0.31 | 1.90 | 1.85 | 0.190 | 1.85 | 1.85 | 0.28 | 1.85 | 1.60 | 0.27 | 1.65 | 1.60 | 0.165 | 1.60 | 1.60 | 0.190 | 1.60 | 1.6 | 0.27 | 1.65 |
| 35 | 1.35 | 1.35 | 0.29 | 1.35 | 1.35 | 0.180 | 1.35 | 1.35 | 0.27 | 1.35 | 1.15 | 0.25 | 1.15 | 1.15 | 0.155 | 1.15 | 1.15 | 0.180 | 1.15 | 1.15 | 0.26 | 1.20 |
| 50 | 0.99 | 1.00 | 0.29 | 1.05 | 0.99 | 0.180 | 1.00 | 0.99 | 0.27 | 1.00 | 0.87 | 0.25 | 0.90 | 0.86 | 0.155 | 0.87 | 0.86 | 0.180 | 0.87 | 0.86 | 0.26 | 0.89 |
| 70 | 0.68 | 0.70 | 0.28 | 0.75 | 0.68 | 0.175 | 0.71 | 0.68 | 0.26 | 0.73 | 0.60 | 0.24 | 0.65 | 0.59 | 0.150 | 0.61 | 0.59 | 0.175 | 0.62 | 0.59 | 0.25 | 0.65 |
| 95 | 0.49 | 0.51 | 0.27 | 0.58 | 0.49 | 0.170 | 0.52 | 0.49 | 0.26 | 0.56 | 0.44 | 0.23 | 0.50 | 0.43 | 0.145 | 0.45 | 0.43 | 0.170 | 0.46 | 0.43 | 0.25 | 0.49 |
| 120 | 0.39 | 0.41 | 0.26 | 0.48 | 0.39 | 0.165 | 0.43 | 0.39 | 0.25 | 0.47 | 0.35 | 0.23 | 0.42 | 0.34 | 0.140 | 0.37 | 0.34 | 0.165 | 0.38 | 0.34 | 0.24 | 0.42 |
| 150 | 0.32 | 0.33 | 0.26 | 0.43 | 0.32 | 0.165 | 0.36 | 0.32 | 0.25 | 0.41 | 0.29 | 0.23 | 0.37 | 0.28 | 0.140 | 0.31 | 0.28 | 0.165 | 0.32 | 0.28 | 0.24 | 0.37 |
| 185 | 0.25 | 0.27 | 0.26 | 0.37 | 0.26 | 0.165 | 0.30 | 0.25 | 0.25 | 0.36 | 0.23 | 0.23 | 0.32 | 0.22 | 0.140 | 0.26 | 0.22 | 0.165 | 0.28 | 0.22 | 0.24 | 0.33 |
| 240 | 0.190 | 0.21 | 0.26 | 0.33 | 0.20 | 0.160 | 0.25 | 0.195 | 0.25 | 0.31 | 0.185 | 0.22 | 0.29 | 0.17 | 0.140 | 0.22 | 0.17 | 0.165 | 0.24 | 0.17 | 0.24 | 0.29 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



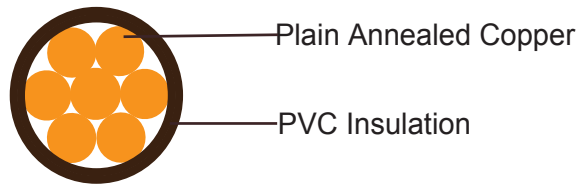
Standard



Flame Retardancy
EN 60332-1-2

600/1000V PVC Insulated, Non-sheathed Flexible Cables (Single Core)

FGD300 1V-F (CU/PVC 600/1000V Class 5)
BS Code: TYPE BK / TYPE CK(CU/PVC)



APPLICATION

The cables are intended for use in the wiring of switch, control, metering, relay and instrument panels of power switchgear, and for such purposes as internal connections in rectifier equipment and its motor starters and controllers.

STANDARDS

Basic design to BS 6231: 2006

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 60332-1-2 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed copper conductor, class 5 according to BS EN 60228.

Insulation: PVC Type TI 1 according to BS EN 50363-3 for cable type BK, and type TI 3 according to BS EN 50363-3 for cable type CK.

COLOUR CODE

Insulation Colour: Black, Blue, Brown, Red, White, Grey, Violet, Pink, Green/Yellow. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (PVC): 70°C (TYPE BK); 90°C (TYPE CK)

Maximum short circuit temperature (5 Seconds): 160°C

Minimum bending radius: 6 x overall diameter



CONSTRUCTION PARAMETERS

| Conductor | | FGD300 1V-F | | |
|-----------------------------|--------------------|------------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Maximum Overall Diameter | Approx. Weight |
| No. x mm ² | | mm | mm | kg/km |
| 1x0.5 | 5 | 0.8 | 3.0 | 12 |
| 1x0.75 | 5 | 0.8 | 3.1 | 15 |
| 1x1.0 | 5 | 0.8 | 3.3 | 18 |
| 1x1.5 | 5 | 0.8 | 3.6 | 23 |
| 1x2.5 | 5 | 0.8 | 4.1 | 34 |
| 1x4.0 | 5 | 0.8 | 4.8 | 48 |
| 1x6.0 | 5 | 0.8 | 5.3 | 67 |
| 1x10 | 5 | 1.0 | 7.2 | 119 |
| 1x16 | 5 | 1.0 | 9.0 | 187 |
| 1x25 | 5 | 1.2 | 11.5 | 291 |
| 1x35 | 5 | 1.2 | 12.5 | 406 |
| 1x50 | 5 | 1.4 | 15.4 | 580 |
| 1x70 | 5 | 1.4 | 17.5 | 780 |
| 1x95 | 5 | 1.6 | 19.2 | 1055 |
| 1x120 | 5 | 1.6 | 21.2 | 1175 |
| 1x150 | 5 | 1.8 | 23.9 | 1425 |
| 1x185 | 5 | 2.0 | 25.9 | 1735 |
| 1x240 | 5 | 2.2 | 28.9 | 2310 |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 70°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671:2008 table 4D1A

| Conductor cross-sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc) | | Reference Method B (enclosed in conduit on a wall or in trunking etc) | | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray horizontal or vertical etc) | | | | |
|--------------------------------|---------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------|---------------------------------|-------------------------------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------|------------------------------------|-----------------------------------------------------------------------|----------|
| | | | | | | | Touching | | | Spaced by one cable diameter | |
| | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. flat and touching | 3 or 4 cables, three-phase a.c. flat and touching or trefoil | 2 cables, single-phase a.c. or d.c. flat | 3 cables, three-phase a.c. flat | 3 cables, three-phase a.c. trefoil | 2 cables, single-phase a.c. or d.c. or 3 cables three-phase a.c. flat | |
| | | | | | | | | | | Horizontal | Vertical |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| mm ² | A | A | A | A | A | A | A | A | A | A | A |
| 1.0 | 11.0 | 10.5 | 13.5 | 12.0 | 15.5 | 14 | - | - | - | - | - |
| 1.5 | 14.5 | 13.5 | 17.5 | 15.5 | 20 | 18 | - | - | - | - | - |
| 2.5 | 20 | 18 | 24 | 21 | 27 | 25 | - | - | - | - | - |
| 4 | 26 | 24 | 32 | 28 | 37 | 33 | - | - | - | - | - |
| 6 | 34 | 31 | 41 | 36 | 47 | 43 | - | - | - | - | - |
| 10 | 46 | 42 | 57 | 50 | 65 | 59 | - | - | - | - | - |
| 16 | 61 | 56 | 76 | 68 | 87 | 79 | - | - | - | - | - |
| 25 | 80 | 73 | 101 | 89 | 114 | 104 | 131 | 114 | 110 | 146 | 130 |
| 35 | 99 | 89 | 125 | 110 | 141 | 129 | 162 | 143 | 137 | 181 | 162 |
| 50 | 119 | 108 | 151 | 134 | 182 | 167 | 196 | 174 | 167 | 219 | 197 |
| 70 | 151 | 136 | 192 | 171 | 234 | 214 | 251 | 225 | 216 | 281 | 254 |
| 95 | 182 | 164 | 232 | 207 | 284 | 261 | 304 | 275 | 264 | 341 | 311 |
| 120 | 210 | 188 | 269 | 239 | 330 | 303 | 352 | 321 | 308 | 396 | 362 |
| 150 | 240 | 216 | 300 | 262 | 381 | 349 | 406 | 372 | 356 | 456 | 419 |
| 185 | 273 | 245 | 341 | 296 | 436 | 400 | 463 | 427 | 409 | 521 | 480 |
| 240 | 321 | 286 | 400 | 346 | 515 | 472 | 546 | 507 | 485 | 615 | 569 |

Voltage Drop (Per Amp Per Meter) according to BS 7671:2008 table 4D1B

| Nominal Cross Section Area | 2 cables d.c. | 2 cables, single-phase a.c. | | | 3 or 4 cables, three-phase a.c. | | | |
|----------------------------|---------------|--------------------------------------------------------|--------------------------------------------------------------|------------------|------------------------------------------------------|--------------------------------------------------------------|-----------------------|----------------------|
| | | Ref. Methods A and B (enclosed in conduit or trunking) | Ref. Methods C & F (clipped direct, on trays or in free air) | | Ref. Methods A & B (enclosed in conduit or trunking) | Ref. Methods C & F (clipped direct, on trays or in free air) | | |
| | | | Cables touching | Cables spaced* 5 | | Cables touching, Trefoil | Cables touching, Flat | Cables spaced*, Flat |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| mm ² | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m | mV/A/m |
| 1.0 | 44 | 44 | 44 | 44 | 38 | 38 | 38 | 38 |
| 1.5 | 29 | 29 | 29 | 29 | 25 | 25 | 25 | 25 |



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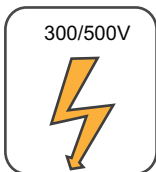
| Nominal Cross Section Area | 2 cables d.c. | 2 cables, single-phase a.c. | | | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | | | | | | | | | | | |
|----------------------------|---------------|--------------------------------------------------------|------|------|--------------------------------------------------------------|-------|------------------|-------|------|------------------------------------------------------|--------------------------------------------------------------|------|------|------|-----------------------|------|------|------|----------------------|------|------|------|---|---|---|---|---|---|
| | | Ref. Methods A and B (enclosed in conduit or trunking) | | | Ref. Methods C & F (clipped direct, on trays or in free air) | | | | | Ref. Methods A & B (enclosed in conduit or trunking) | Ref. Methods C & F (clipped direct, on trays or in free air) | | | | | | | | | | | | | | | | | |
| | | | | | Cables touching 4 | | Cables spaced* 5 | | | | Cables touching, Trefoil | | | | Cables touching, Flat | | | | Cables spaced*, Flat | | | | | | | | | |
| 1 | 2 | 3 | | | 4 | | 5 | | | 6 | 7 | | | | 8 | | | | 9 | | | | | | | | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | mV/A/m | | | mV/A/m | mV/A/m | | | | mV/A/m | | | | mV/A/m | | | | | | | | | |
| 2.5 | 18 | 18 | | | 18 | | 18 | | | 15 | 15 | | | | 15 | | | | 15 | | | | | | | | | |
| 4 | 11 | 11 | | | 11 | | 11 | | | 9.5 | 9.5 | | | | 9.5 | | | | 9.5 | | | | | | | | | |
| 6 | 7.3 | 7.3 | | | 7.3 | | 7.3 | | | 6.4 | 6.4 | | | | 6.4 | | | | 6.4 | | | | | | | | | |
| 10 | 4.4 | 4.4 | | | 4.4 | | 4.4 | | | 3.8 | 3.8 | | | | 3.8 | | | | 3.8 | | | | | | | | | |
| 16 | 2.8 | 2.8 | | | 2.8 | | 2.8 | | | 2.4 | 2.4 | | | | 2.4 | | | | 2.4 | | | | | | | | | |
| | | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 25 | 1.75 | 1.80 | 0.33 | 1.80 | 1.75 | 0.20 | 1.75 | 1.75 | 0.29 | 1.80 | 1.50 | 0.29 | 1.55 | 1.50 | 0.175 | 1.50 | 1.50 | 0.25 | 1.55 | 1.50 | 0.32 | 1.55 | | | | | | |
| 35 | 1.25 | 1.30 | 0.31 | 1.30 | 1.25 | 0.195 | 1.25 | 1.25 | 0.28 | 1.30 | 1.10 | 0.27 | 1.10 | 1.10 | 0.170 | 1.10 | 1.10 | 0.24 | 1.10 | 1.10 | 0.32 | 1.15 | | | | | | |
| 50 | 0.93 | 0.95 | 0.3 | 1.0 | 0.93 | 0.19 | 0.95 | 0.93 | 0.28 | 0.97 | 0.81 | 0.26 | 0.85 | 0.8 | 0.165 | 0.82 | 0.8 | 0.24 | 0.84 | 0.8 | 0.32 | 0.86 | | | | | | |
| 70 | 0.63 | 0.65 | 0.29 | 0.72 | 0.63 | 0.185 | 0.66 | 0.63 | 0.27 | 0.69 | 0.56 | 0.25 | 0.61 | 0.55 | 0.16 | 0.57 | 0.55 | 0.24 | 0.6 | 0.55 | 0.31 | 0.63 | | | | | | |
| 95 | 0.46 | 0.49 | 0.28 | 0.56 | 0.47 | 0.18 | 0.5 | 0.47 | 0.27 | 0.54 | 0.42 | 0.24 | 0.48 | 0.41 | 0.155 | 0.43 | 0.41 | 0.23 | 0.47 | 0.4 | 0.31 | 0.51 | | | | | | |
| 120 | 0.36 | 0.39 | 0.27 | 0.47 | 0.37 | 0.175 | 0.41 | 0.37 | 0.26 | 0.45 | 0.33 | 0.23 | 0.41 | 0.32 | 0.15 | 0.36 | 0.32 | 0.23 | 0.4 | 0.32 | 0.3 | 0.44 | | | | | | |
| 150 | 0.29 | 0.31 | 0.27 | 0.41 | 0.3 | 0.175 | 0.34 | 0.29 | 0.26 | 0.39 | 0.27 | 0.23 | 0.36 | 0.26 | 0.15 | 0.3 | 0.26 | 0.23 | 0.34 | 0.26 | 0.3 | 0.4 | | | | | | |
| 185 | 0.23 | 0.25 | 0.27 | 0.37 | 0.24 | 0.17 | 0.29 | 0.24 | 0.26 | 0.35 | 0.22 | 0.23 | 0.32 | 0.21 | 0.145 | 0.26 | 0.21 | 0.22 | 0.31 | 0.21 | 0.3 | 0.36 | | | | | | |
| 240 | 0.18 | 0.195 | 0.26 | 0.33 | 0.185 | 0.165 | 0.25 | 0.185 | 0.25 | 0.31 | 0.17 | 0.23 | 0.29 | 0.16 | 0.145 | 0.22 | 0.16 | 0.22 | 0.27 | 0.16 | 0.29 | 0.34 | | | | | | |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



Standard

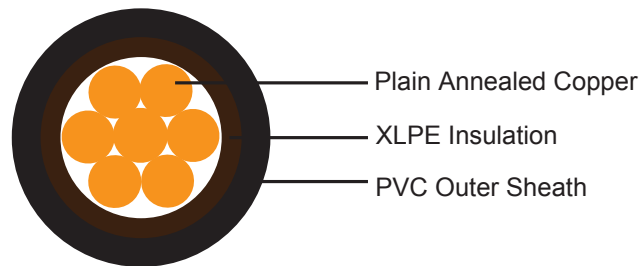
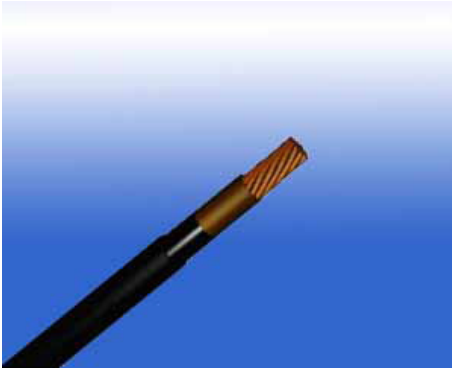


Flame Retardancy
BS EN 60332-1-2

600/1000V XLPE Insulated, PVC Sheathed, Unarmoured Power Cables (Single Core)

FGD300 1RV-R (CU/XLPE/PVC 600/1000V Class 2)

BS Code: 6181X



APPLICATION

The cables are mainly use in fixed installations in industrial areas, buildings and similar applications but not for burial in the ground, either directly or in ducts.

STANDARDS

Basic design to BS 7889:2012

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 60332-1-2 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed copper wire, stranded according to BS EN 60228 class 2.

Insulation: XLPE type GP8 according to BS 7655-1.3.

Optional Inner Covering: The optional inner covering, where used, shall consist of an extruded layer of synthetic polymeric material. It shall surround the single core and the laid-up two, three, four or five cores, giving the assembly a practically circular shape.

Outer Sheath: PVC Type 9 according to BS 7655-4.2.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Brown or blue

Sheath Colour: Black (other colours upon request)



PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (XLPE): 90°C

Maximum short circuit temperature (5 Seconds): 250°C

Minimum bending radius:

Circular copper conductor (OD ≤ 25mm): 4 x Overall Diameter

Circular copper conductor (OD > 25mm): 6 x Overall Diameter

Shaped copper conductor: 8 x Overall Diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD300 1RV-R | | | |
|--------------------------------|-----------------------|------------------------------------|--------------------------------|--------------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | kg/km |
| 1x1.5 | 2 | 0.7 | 1.4 | 6.1 | 36 |
| 1x2.5 | 2 | 0.7 | 1.4 | 6.8 | 52 |
| 1x4 | 2 | 0.7 | 1.4 | 7.4 | 76 |
| 1x6 | 2 | 0.7 | 1.4 | 8.2 | 100 |
| 1x10 | 2 | 0.7 | 1.4 | 9.2 | 160 |
| 1x16 | 2 | 0.7 | 1.4 | 10.7 | 230 |
| 1x25 | 2 | 0.9 | 1.4 | 12.5 | 340 |
| 1x35 | 2 | 0.9 | 1.4 | 13.5 | 440 |
| 1x50 | 2 | 1.0 | 1.4 | 13.7 | 541 |
| 1x70 | 2 | 1.1 | 1.4 | 15.8 | 749 |
| 1x95 | 2 | 1.1 | 1.5 | 17.5 | 1000 |
| 1x120 | 2 | 1.2 | 1.5 | 19.3 | 1241 |
| 1x150 | 2 | 1.4 | 1.6 | 21.5 | 1523 |
| 1x185 | 2 | 1.6 | 1.6 | 24.7 | 1942 |
| 1x240 | 2 | 1.7 | 1.7 | 27.7 | 2514 |
| 1x300 | 2 | 1.8 | 1.8 | 30.6 | 3125 |
| 1x400 | 2 | 2.0 | 1.9 | 34.2 | 3967 |
| 1x500 | 2 | 2.2 | 2.0 | 38.0 | 5063 |
| 1x630 | 2 | 2.4 | 2.2 | 42.9 | 6491 |
| 1x800 | 2 | 2.6 | 2.3 | 46.0 | 8075 |
| 1x1000 | 2 | 2.8 | 2.4 | 63.0 | 9860 |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671:2008 table 4E1A

| Conductor cross-sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc) | | Reference Method B (enclosed in conduit on a wall or in trunking etc) | | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray, horizontal or vertical etc) Touching | | | Reference Method G (in free air) Spaced by one cable diameter | |
|--------------------------------|---------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------|---------------------------------|-------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------|-----------------------------------------------------------------------|----------|
| | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. flat and touching | 3 or 4 cables, three-phase a.c. flat and touching or trefoil | 2 cables, single-phase a.c. or d.c. flat | 3 cables, three-phase a.c. flat | 3 cables, three-phase a.c. trefoil | 2 cables, single-phase a.c. or d.c. or 3 cables three-phase a.c. flat | |
| | | | | | | | | | | Horizontal | Vertical |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| mm ² | A | A | A | A | A | A | A | A | A | A | A |
| 1.5 | 19 | 17 | 23 | 20 | 25 | 23 | - | - | - | - | - |
| 2.5 | 26 | 23 | 31 | 28 | 34 | 31 | - | - | - | - | - |
| 4 | 35 | 31 | 42 | 37 | 46 | 41 | - | - | - | - | - |
| 6 | 45 | 40 | 54 | 48 | 59 | 54 | - | - | - | - | - |
| 10 | 61 | 54 | 75 | 66 | 81 | 74 | - | - | - | - | - |
| 16 | 81 | 73 | 100 | 88 | 109 | 99 | - | - | - | - | - |
| 25 | 106 | 95 | 133 | 117 | 143 | 130 | 161 | 141 | 135 | 182 | 161 |
| 35 | 131 | 117 | 164 | 144 | 176 | 161 | 200 | 176 | 169 | 226 | 201 |
| 50 | 158 | 141 | 198 | 175 | 228 | 209 | 242 | 216 | 207 | 275 | 246 |
| 70 | 200 | 179 | 253 | 222 | 293 | 268 | 310 | 279 | 268 | 353 | 318 |
| 95 | 241 | 216 | 306 | 269 | 355 | 326 | 377 | 342 | 328 | 430 | 389 |
| 120 | 278 | 249 | 354 | 312 | 413 | 379 | 437 | 400 | 383 | 500 | 454 |
| 150 | 318 | 285 | 393 | 342 | 476 | 436 | 504 | 464 | 444 | 577 | 527 |
| 185 | 362 | 324 | 449 | 384 | 545 | 500 | 575 | 533 | 510 | 661 | 605 |
| 240 | 424 | 380 | 528 | 450 | 644 | 590 | 679 | 634 | 607 | 781 | 719 |
| 300 | 486 | 435 | 603 | 514 | 743 | 681 | 783 | 736 | 703 | 902 | 833 |
| 400 | - | - | 683 | 584 | 868 | 793 | 940 | 868 | 823 | 1085 | 1008 |
| 500 | - | - | 783 | 666 | 990 | 904 | 1083 | 998 | 946 | 1253 | 1169 |
| 630 | - | - | 900 | 764 | 113 | 1033 | 1254 | 1151 | 1088 | 1454 | 1362 |
| 800 | - | - | - | - | 1288 | 1179 | 1358 | 1275 | 1214 | 1581 | 1485 |
| 1000 | - | - | - | - | 1443 | 1323 | 1520 | 1436 | 1349 | 1775 | 1671 |



Voltage Drop (Per Amp Per Meter) according to BS 7671:2008 table 4E1B

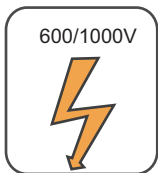
| Nominal Cross Section Area | 2 cables d.c. | 2 cables, single-phase a.c. | | | | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | | | | | | | | | | |
|----------------------------|---------------|--------------------------------------------------------|------|------|-----------------------------------------------------------------|-------|-------|------------------|------|------|-----------------------------------------------------------------|--------|------|-------|-----------------------|--------|-------|-------|----------------------|--------|------|------|-------|------|------|-------|------|------|
| | | Ref. Methods A and B (enclosed in conduit or trunking) | | | Ref. Methods C, F & G (clipped direct, on trays or in free air) | | | | | | Ref. Methods C, F & G (clipped direct, on trays or in free air) | | | | | | | | | | | | | | | | | |
| | | | | | Cables touching | | | Cables spaced* 5 | | | Cables touching, Trefoil | | | | Cables touching, Flat | | | | Cables spaced*, Flat | | | | | | | | | |
| 1 | 2 | 3 | | | 4 | | | 5 | | | 6 | 7 | | | | 8 | | | | 9 | | | | | | | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | mV/A/m | | | | mV/A/m | | | | mV/A/m | | | | | | | | |
| 1.5 | 31 | 31 | | | 31 | | | 31 | | | 27 | 27 | | | | 27 | | | | 27 | | | | | | | | |
| 2.5 | 19 | 19 | | | 19 | | | 19 | | | 16 | 16 | | | | 16 | | | | 16 | | | | | | | | |
| 4 | 12 | 12 | | | 12 | | | 12 | | | 10 | 10 | | | | 10 | | | | 10 | | | | | | | | |
| 6 | 7.9 | 7.9 | | | 7.9 | | | 7.9 | | | 6.8 | 6.8 | | | | 6.8 | | | | 6.8 | | | | | | | | |
| 10 | 4.7 | 4.7 | | | 4.7 | | | 4.7 | | | 4.0 | 4.0 | | | | 4.0 | | | | 4.0 | | | | | | | | |
| 16 | 2.9 | 2.9 | | | 2.9 | | | 2.9 | | | 2.5 | 2.5 | | | | 2.5 | | | | 2.5 | | | | | | | | |
| | | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 25 | 1.85 | 1.85 | 0.31 | 1.90 | 1.85 | 0.190 | 1.85 | 1.85 | 0.28 | 1.85 | 1.60 | 0.27 | 1.65 | 1.60 | 0.165 | 1.60 | 1.60 | 0.190 | 1.60 | 1.60 | 0.27 | 1.65 | 1.60 | 0.27 | 1.65 | 1.60 | 0.27 | 1.65 |
| 35 | 1.35 | 1.35 | 0.29 | 1.35 | 1.35 | 0.180 | 1.35 | 1.35 | 0.27 | 1.35 | 1.15 | 0.25 | 1.15 | 1.15 | 0.155 | 1.15 | 1.15 | 0.180 | 1.15 | 1.15 | 0.26 | 1.20 | 1.15 | 0.26 | 1.20 | 1.15 | 0.26 | 1.20 |
| 50 | 0.99 | 1.00 | 0.29 | 1.05 | 0.99 | 0.180 | 1.00 | 0.99 | 0.27 | 1.00 | 0.87 | 0.25 | 0.90 | 0.86 | 0.155 | 0.87 | 0.86 | 0.180 | 0.87 | 0.86 | 0.26 | 0.89 | 0.86 | 0.26 | 0.89 | 0.86 | 0.26 | 0.89 |
| 70 | 0.68 | 0.70 | 0.28 | 0.75 | 0.68 | 0.175 | 0.71 | 0.68 | 0.26 | 0.73 | 0.60 | 0.24 | 0.65 | 0.59 | 0.150 | 0.61 | 0.59 | 0.175 | 0.62 | 0.59 | 0.25 | 0.65 | 0.59 | 0.25 | 0.65 | 0.59 | 0.25 | 0.65 |
| 95 | 0.49 | 0.51 | 0.27 | 0.58 | 0.49 | 0.170 | 0.52 | 0.49 | 0.26 | 0.56 | 0.44 | 0.23 | 0.50 | 0.43 | 0.145 | 0.45 | 0.43 | 0.170 | 0.46 | 0.43 | 0.25 | 0.49 | 0.43 | 0.25 | 0.49 | 0.43 | 0.25 | 0.49 |
| 120 | 0.39 | 0.41 | 0.26 | 0.48 | 0.39 | 0.165 | 0.43 | 0.39 | 0.25 | 0.47 | 0.35 | 0.23 | 0.42 | 0.34 | 0.140 | 0.37 | 0.34 | 0.165 | 0.38 | 0.34 | 0.24 | 0.42 | 0.34 | 0.24 | 0.42 | 0.34 | 0.24 | 0.42 |
| 150 | 0.32 | 0.33 | 0.26 | 0.43 | 0.32 | 0.165 | 0.36 | 0.32 | 0.25 | 0.41 | 0.29 | 0.23 | 0.37 | 0.28 | 0.140 | 0.31 | 0.28 | 0.165 | 0.32 | 0.28 | 0.24 | 0.37 | 0.28 | 0.24 | 0.37 | 0.28 | 0.24 | 0.37 |
| 185 | 0.25 | 0.27 | 0.26 | 0.37 | 0.26 | 0.165 | 0.30 | 0.25 | 0.25 | 0.36 | 0.23 | 0.23 | 0.32 | 0.22 | 0.140 | 0.26 | 0.22 | 0.165 | 0.28 | 0.22 | 0.24 | 0.33 | 0.22 | 0.24 | 0.33 | 0.22 | 0.24 | 0.33 |
| 240 | 0.190 | 0.21 | 0.26 | 0.33 | 0.20 | 0.160 | 0.25 | 0.195 | 0.25 | 0.31 | 0.185 | 0.22 | 0.29 | 0.170 | 0.140 | 0.22 | 0.170 | 0.165 | 0.24 | 0.170 | 0.24 | 0.29 | 0.170 | 0.24 | 0.29 | 0.170 | 0.24 | 0.29 |
| 300 | 0.155 | 0.175 | 0.25 | 0.31 | 0.160 | 0.160 | 0.22 | 0.155 | 0.25 | 0.29 | 0.150 | 0.22 | 0.27 | 0.140 | 0.140 | 0.195 | 0.135 | 0.160 | 0.21 | 0.135 | 0.24 | 0.27 | 0.135 | 0.24 | 0.27 | 0.135 | 0.24 | 0.27 |
| 400 | 0.120 | 0.140 | 0.25 | 0.29 | 0.130 | 0.155 | 0.20 | 0.125 | 0.24 | 0.27 | 0.125 | 0.22 | 0.25 | 0.110 | 0.135 | 0.175 | 0.110 | 0.160 | 0.195 | 0.110 | 0.24 | 0.26 | 0.110 | 0.24 | 0.26 | 0.110 | 0.24 | 0.26 |
| 500 | 0.093 | 0.120 | 0.25 | 0.28 | 0.105 | 0.155 | 0.185 | 0.098 | 0.24 | 0.26 | 0.100 | 0.22 | 0.24 | 0.090 | 0.135 | 0.160 | 0.088 | 0.160 | 0.180 | 0.085 | 0.24 | 0.25 | 0.085 | 0.24 | 0.25 | 0.085 | 0.24 | 0.25 |
| 630 | 0.072 | 0.100 | 0.25 | 0.27 | 0.086 | 0.155 | 0.175 | 0.078 | 0.24 | 0.25 | 0.088 | 0.21 | 0.23 | 0.074 | 0.135 | 0.150 | 0.071 | 0.160 | 0.170 | 0.068 | 0.23 | 0.24 | 0.068 | 0.23 | 0.24 | 0.068 | 0.23 | 0.24 |
| 800 | 0.056 | - | - | - | 0.072 | 0.150 | 0.170 | 0.064 | 0.24 | 0.25 | - | - | - | 0.062 | 0.130 | 0.145 | 0.059 | 0.155 | 0.165 | 0.055 | 0.23 | 0.24 | 0.055 | 0.23 | 0.24 | 0.055 | 0.23 | 0.24 |
| 1000 | 0.045 | - | - | - | 0.063 | 0.150 | 0.165 | 0.054 | 0.24 | 0.24 | - | - | - | 0.055 | 0.130 | 0.140 | 0.050 | 0.155 | 0.165 | 0.047 | 0.23 | 0.24 | 0.047 | 0.23 | 0.24 | 0.047 | 0.23 | 0.24 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



Standard

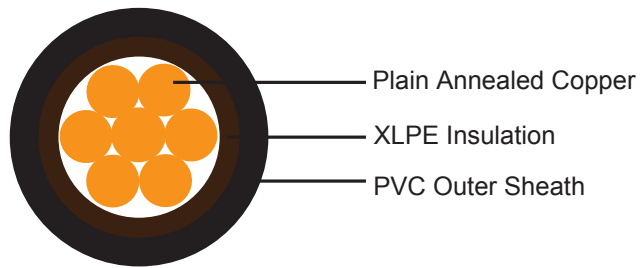
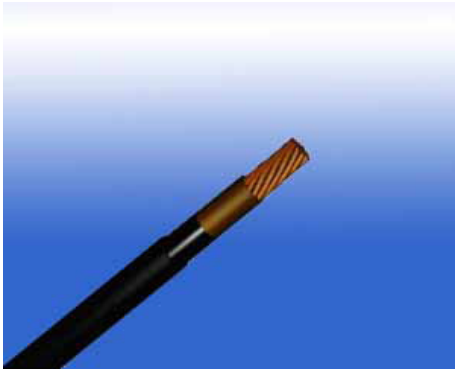


Flame Retardancy
BS EN 60332-1-2

600/1000V XLPE Insulated, PVC Sheathed, Unarmoured Power Cables (Single Core)

FGD300 1RV-R (CU/XLPE/PVC 600/1000V Class 2)

VDE Code: N2XY



APPLICATION

The cables are mainly use in fixed installations in industrial areas, buildings and similar applications but not for burial in the ground, either directly or in ducts.

STANDARDS

Basic design to IEC 60502-1

FIRE PERFORMANCE

| | |
|----------------------------------------------|-------------|
| Flame Retardance (Single Vertical Wire Test) | IEC 60332-1 |
|----------------------------------------------|-------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Plain annealed copper, stranded according to IEC 60228 class 2.

Insulation: XLPE according to IEC 60502-1.

Outer Sheath: Extruded PVC Type ST₁/ST₂ according to IEC 60502-1.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Brown or Blue

Other colours can be manufactured upon request.

Sheath Colour: Black (other colours upon request)



PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation: 80°C (For ST₁ Sheath); 90°C (For ST₂ Sheath)

Maximum short circuit temperature (5 Seconds): 250°C

Minimum bending radius:

Circular copper conductor (OD ≤ 25mm): 4 x Overall Diameter

Circular copper conductor (OD > 25mm): 6 x Overall Diameter

Shaped copper conductor: 8 x Overall Diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD300 1RV-R | | | |
|-----------------------------|--------------------|------------------------------|--------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | kg/km |
| 1x1.5 | 2 | 0.7 | 1.4 | 6.1 | 36 |
| 1x2.5 | 2 | 0.7 | 1.4 | 6.8 | 52 |
| 1x4 | 2 | 0.7 | 1.4 | 7.4 | 76 |
| 1x6 | 2 | 0.7 | 1.4 | 8.2 | 100 |
| 1x10 | 2 | 0.7 | 1.4 | 9.2 | 160 |
| 1x16 | 2 | 0.7 | 1.4 | 10.7 | 230 |
| 1x25 | 2 | 0.9 | 1.4 | 12.5 | 340 |
| 1x35 | 2 | 0.9 | 1.4 | 13.5 | 440 |
| 1x50 | 2 | 1.0 | 1.4 | 13.7 | 541 |
| 1x70 | 2 | 1.1 | 1.4 | 15.8 | 749 |
| 1x95 | 2 | 1.1 | 1.5 | 17.5 | 1000 |
| 1x120 | 2 | 1.2 | 1.5 | 19.3 | 1241 |
| 1x150 | 2 | 1.4 | 1.6 | 21.5 | 1523 |
| 1x185 | 2 | 1.6 | 1.6 | 24.7 | 1942 |
| 1x240 | 2 | 1.7 | 1.7 | 27.7 | 2514 |
| 1x300 | 2 | 1.8 | 1.8 | 30.6 | 3125 |
| 1x400 | 2 | 2.0 | 1.9 | 34.2 | 3967 |
| 1x500 | 2 | 2.2 | 2.0 | 38.0 | 5063 |
| 1x630 | 2 | 2.4 | 2.2 | 42.9 | 6491 |
| 1x800 | 2 | 2.6 | 2.3 | 46.0 | 8075 |
| 1x1000 | 2 | 2.8 | 2.4 | 63.0 | 9860 |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671:2008 table 4E1A

| Conductor cross-sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc) | | Reference Method B (enclosed in conduit on a wall or in trunking etc) | | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray, horizontal or vertical etc) Touching | | | Reference Method G (in free air) Spaced by one cable diameter | |
|--------------------------------|---------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------|---------------------------------|-------------------------------------------------------|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------|-----------------------------------------------------------------------|----------|
| | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. flat and touching | 3 or 4 cables, three-phase a.c. flat and touching or trefoil | 2 cables, single-phase a.c. or d.c. flat | 3 cables, three-phase a.c. flat | 3 cables, three-phase a.c. trefoil | 2 cables, single-phase a.c. or d.c. or 3 cables three-phase a.c. flat | |
| | | | | | | | | | | Horizontal | Vertical |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| mm ² | A | A | A | A | A | A | A | A | A | A | A |
| 1.5 | 19 | 17 | 23 | 20 | 25 | 23 | - | - | - | - | - |
| 2.5 | 26 | 23 | 31 | 28 | 34 | 31 | - | - | - | - | - |
| 4 | 35 | 31 | 42 | 37 | 46 | 41 | - | - | - | - | - |
| 6 | 45 | 40 | 54 | 48 | 59 | 54 | - | - | - | - | - |
| 10 | 61 | 54 | 75 | 66 | 81 | 74 | - | - | - | - | - |
| 16 | 81 | 73 | 100 | 88 | 109 | 99 | - | - | - | - | - |
| 25 | 106 | 95 | 133 | 117 | 143 | 130 | 161 | 141 | 135 | 182 | 161 |
| 35 | 131 | 117 | 164 | 144 | 176 | 161 | 200 | 176 | 169 | 226 | 201 |
| 50 | 158 | 141 | 198 | 175 | 228 | 209 | 242 | 216 | 207 | 275 | 246 |
| 70 | 200 | 179 | 253 | 222 | 293 | 268 | 310 | 279 | 268 | 353 | 318 |
| 95 | 241 | 216 | 306 | 269 | 355 | 326 | 377 | 342 | 328 | 430 | 389 |
| 120 | 278 | 249 | 354 | 312 | 413 | 379 | 437 | 400 | 383 | 500 | 454 |
| 150 | 318 | 285 | 393 | 342 | 476 | 436 | 504 | 464 | 444 | 577 | 527 |
| 185 | 362 | 324 | 449 | 384 | 545 | 500 | 575 | 533 | 510 | 661 | 605 |
| 240 | 424 | 380 | 528 | 450 | 644 | 590 | 679 | 634 | 607 | 781 | 719 |
| 300 | 486 | 435 | 603 | 514 | 743 | 681 | 783 | 736 | 703 | 902 | 833 |
| 400 | - | - | 683 | 584 | 868 | 793 | 940 | 868 | 823 | 1085 | 1008 |
| 500 | - | - | 783 | 666 | 990 | 904 | 1083 | 998 | 946 | 1253 | 1169 |
| 630 | - | - | 900 | 764 | 113 | 1033 | 1254 | 1151 | 1088 | 1454 | 1362 |
| 800 | - | - | - | - | 1288 | 1179 | 1358 | 1275 | 1214 | 1581 | 1485 |
| 1000 | - | - | - | - | 1443 | 1323 | 1520 | 1436 | 1349 | 1775 | 1671 |



Voltage Drop (Per Amp Per Meter) according to BS 7671:2008 table 4E1B

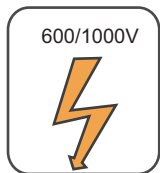
| Nominal Cross Section Area | 2 cables d.c. | 2 cables, single-phase a.c. | | | | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | | | | |
|----------------------------|---------------|--------------------------------------------------------|------|------|-----------------------------------------------------------------|-------|-------|------------------|------|------|-----------------------------------------------------------------|--------|------|-------|-----------------------|-------|-------|--------|----------------------|-------|------|------|
| | | Ref. Methods A and B (enclosed in conduit or trunking) | | | Ref. Methods C, F & G (clipped direct, on trays or in free air) | | | | | | Ref. Methods C, F & G (clipped direct, on trays or in free air) | | | | | | | | | | | |
| | | | | | Cables touching | | | Cables spaced* 5 | | | Cables touching, Trefoil | | | | Cables touching, Flat | | | | Cables spaced*, Flat | | | |
| 1 | 2 | 3 | | | 4 | | | 5 | | | 6 | 7 | | | 8 | | | 9 | | | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | | |
| 1.5 | 31 | 31 | | | 31 | | | 31 | | | 27 | 27 | | | 27 | | | 27 | | | | |
| 2.5 | 19 | 19 | | | 19 | | | 19 | | | 16 | 16 | | | 16 | | | 16 | | | | |
| 4 | 12 | 12 | | | 12 | | | 12 | | | 10 | 10 | | | 10 | | | 10 | | | | |
| 6 | 7.9 | 7.9 | | | 7.9 | | | 7.9 | | | 6.8 | 6.8 | | | 6.8 | | | 6.8 | | | | |
| 10 | 4.7 | 4.7 | | | 4.7 | | | 4.7 | | | 4.0 | 4.0 | | | 4.0 | | | 4.0 | | | | |
| 16 | 2.9 | 2.9 | | | 2.9 | | | 2.9 | | | 2.5 | 2.5 | | | 2.5 | | | 2.5 | | | | |
| | | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 25 | 1.85 | 1.85 | 0.31 | 1.90 | 1.85 | 0.190 | 1.85 | 1.85 | 0.28 | 1.85 | 1.60 | 0.27 | 1.65 | 1.60 | 0.165 | 1.60 | 1.60 | 0.190 | 1.60 | 1.60 | 0.27 | 1.65 |
| 35 | 1.35 | 1.35 | 0.29 | 1.35 | 1.35 | 0.180 | 1.35 | 1.35 | 0.27 | 1.35 | 1.15 | 0.25 | 1.15 | 1.15 | 0.155 | 1.15 | 1.15 | 0.180 | 1.15 | 1.15 | 0.26 | 1.20 |
| 50 | 0.99 | 1.00 | 0.29 | 1.05 | 0.99 | 0.180 | 1.00 | 0.99 | 0.27 | 1.00 | 0.87 | 0.25 | 0.90 | 0.86 | 0.155 | 0.87 | 0.86 | 0.180 | 0.87 | 0.86 | 0.26 | 0.89 |
| 70 | 0.68 | 0.70 | 0.28 | 0.75 | 0.68 | 0.175 | 0.71 | 0.68 | 0.26 | 0.73 | 0.60 | 0.24 | 0.65 | 0.59 | 0.150 | 0.61 | 0.59 | 0.175 | 0.62 | 0.59 | 0.25 | 0.65 |
| 95 | 0.49 | 0.51 | 0.27 | 0.58 | 0.49 | 0.170 | 0.52 | 0.49 | 0.26 | 0.56 | 0.44 | 0.23 | 0.50 | 0.43 | 0.145 | 0.45 | 0.43 | 0.170 | 0.46 | 0.43 | 0.25 | 0.49 |
| 120 | 0.39 | 0.41 | 0.26 | 0.48 | 0.39 | 0.165 | 0.43 | 0.39 | 0.25 | 0.47 | 0.35 | 0.23 | 0.42 | 0.34 | 0.140 | 0.37 | 0.34 | 0.165 | 0.38 | 0.34 | 0.24 | 0.42 |
| 150 | 0.32 | 0.33 | 0.26 | 0.43 | 0.32 | 0.165 | 0.36 | 0.32 | 0.25 | 0.41 | 0.29 | 0.23 | 0.37 | 0.28 | 0.140 | 0.31 | 0.28 | 0.165 | 0.32 | 0.28 | 0.24 | 0.37 |
| 185 | 0.25 | 0.27 | 0.26 | 0.37 | 0.26 | 0.165 | 0.30 | 0.25 | 0.25 | 0.36 | 0.23 | 0.23 | 0.32 | 0.22 | 0.140 | 0.26 | 0.22 | 0.165 | 0.28 | 0.22 | 0.24 | 0.33 |
| 240 | 0.190 | 0.21 | 0.26 | 0.33 | 0.20 | 0.160 | 0.25 | 0.195 | 0.25 | 0.31 | 0.185 | 0.22 | 0.29 | 0.170 | 0.140 | 0.22 | 0.170 | 0.165 | 0.24 | 0.170 | 0.24 | 0.29 |
| 300 | 0.155 | 0.175 | 0.25 | 0.31 | 0.160 | 0.160 | 0.22 | 0.155 | 0.25 | 0.29 | 0.150 | 0.22 | 0.27 | 0.140 | 0.140 | 0.195 | 0.135 | 0.160 | 0.21 | 0.135 | 0.24 | 0.27 |
| 400 | 0.120 | 0.140 | 0.25 | 0.29 | 0.130 | 0.155 | 0.20 | 0.125 | 0.24 | 0.27 | 0.125 | 0.22 | 0.25 | 0.110 | 0.135 | 0.175 | 0.110 | 0.160 | 0.195 | 0.110 | 0.24 | 0.26 |
| 500 | 0.093 | 0.120 | 0.25 | 0.28 | 0.105 | 0.155 | 0.185 | 0.098 | 0.24 | 0.26 | 0.100 | 0.22 | 0.24 | 0.090 | 0.135 | 0.160 | 0.088 | 0.160 | 0.180 | 0.085 | 0.24 | 0.25 |
| 630 | 0.072 | 0.100 | 0.25 | 0.27 | 0.086 | 0.155 | 0.175 | 0.078 | 0.24 | 0.25 | 0.088 | 0.21 | 0.23 | 0.074 | 0.135 | 0.150 | 0.071 | 0.160 | 0.170 | 0.068 | 0.23 | 0.24 |
| 800 | 0.056 | - | - | - | 0.072 | 0.150 | 0.170 | 0.064 | 0.24 | 0.25 | - | - | - | 0.062 | 0.130 | 0.145 | 0.059 | 0.155 | 0.165 | 0.055 | 0.23 | 0.24 |
| 1000 | 0.045 | - | - | - | 0.063 | 0.150 | 0.165 | 0.054 | 0.24 | 0.24 | - | - | - | 0.055 | 0.130 | 0.140 | 0.050 | 0.155 | 0.165 | 0.047 | 0.23 | 0.24 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



Standard

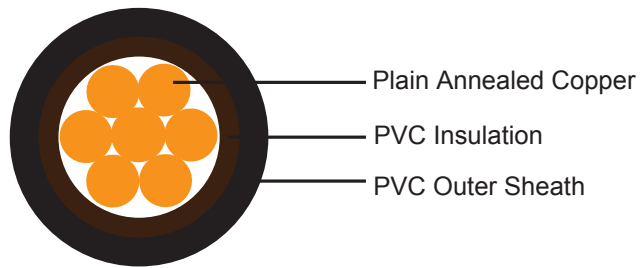
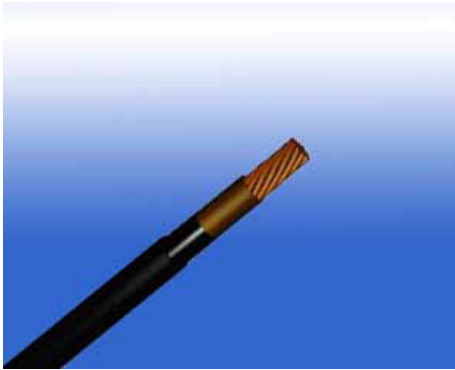


Flame Retardancy
IEC 60332-1

600/1000V PVC Insulated, PVC Sheathed, Unarmoured Power Cables (Single Core)

FGD300 1VV-R (CU/PVC/PVC 600/1000V Class 2)

VDE Code: NYY



APPLICATION

The cables are mainly use in fixed installations in industrial areas, buildings and similar applications but not for burial in the ground, either directly or in ducts.

STANDARDS

Basic design to IEC 60502-1

FIRE PERFORMANCE

| | |
|----------------------------------------------|-------------|
| Flame Retardance (Single Vertical Wire Test) | IEC 60332-1 |
|----------------------------------------------|-------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Plain annealed copper, stranded according to IEC 60228 class 2.

Insulation: PVC/A according to IEC 60502-1.

Outer Sheath: Extruded PVC Type ST₁/ST₂ according to IEC 60502-1.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Brown or Blue

Other colours can be manufactured upon request.

Sheath Colour: Black (other colours upon request)



PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation: 70°C

Maximum short circuit temperature (5 Seconds):

Conductor cross-section ≤300 mm²:160°C

Conductor cross-section >300 mm²:140°C

Minimum bending radius:

Circular copper conductor (OD ≤ 25mm): 4 x Overall Diameter

Circular copper conductor (OD > 25mm): 6 x Overall Diameter

Shaped copper conductor: 8 x Overall Diameter

CONSTRUCTION PARAMETERS

| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
|--------------------------------|-----------------------|------------------------------------|--------------------------------|--------------------------------|----------------|
| mm ² | | mm | mm | mm | kg/km |
| 1x1.5 | 2 | 0.8 | 1.4 | 5.8 | 55 |
| 1x2.5 | 2 | 0.8 | 1.4 | 6.2 | 70 |
| 1x4.0 | 2 | 1.0 | 1.4 | 7.1 | 98 |
| 1x6.0 | 2 | 1.0 | 1.4 | 7.6 | 124 |
| 1x10 | 2 | 1.0 | 1.4 | 8.4 | 173 |
| 1x16 | 2 | 1.0 | 1.4 | 9.3 | 240 |
| 1x25 | 2 | 1.2 | 1.4 | 10.8 | 350 |
| 1x35 | 2 | 1.2 | 1.4 | 11.9 | 468 |
| 1x50 | 2 | 1.4 | 1.4 | 13.6 | 646 |
| 1x70 | 2 | 1.4 | 1.4 | 15.0 | 854 |
| 1x95 | 2 | 1.6 | 1.5 | 17.2 | 1154 |
| 1x120 | 2 | 1.6 | 1.5 | 18.6 | 1428 |
| 1x150 | 2 | 1.8 | 1.6 | 20.6 | 1764 |
| 1x185 | 2 | 2.0 | 1.7 | 22.7 | 2160 |
| 1x240 | 2 | 2.2 | 1.8 | 25.5 | 2796 |
| 1x300 | 2 | 2.4 | 1.9 | 28.1 | 3449 |
| 1x400 | 2 | 2.6 | 2.0 | 31.8 | 4570 |
| 1x500 | 2 | 2.8 | 2.1 | 35.0 | 5641 |
| 1x630 | 2 | 2.8 | 2.2 | 38.3 | 7015 |
| 1x800 | 2 | 2.8 | 2.3 | 42.1 | 8798 |
| 1x1000 | 2 | 3.0 | 2.5 | 46.7 | 10970 |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 70°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671:2008 table 4D1A

| Conductor cross-sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc) | | Reference Method B (enclosed in conduit on a wall or in trunking etc) | | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray horizontal or vertical) | | | | |
|--------------------------------|---------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------|---------------------------------|-------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|------------------------------------|-----------------------------------------------------------------------|----------|
| | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. | 3 or 4 cables, three-phase a.c. | 2 cables, single-phase a.c. or d.c. flat and touching | 3 or 4 cables, three-phase a.c. flat and touching or trefoil | 2 cables, single-phase a.c. or d.c. flat | 3 cables, three-phase a.c. flat | 3 cables, three-phase a.c. trefoil | 2 cables, single-phase a.c. or d.c. or 3 cables three-phase a.c. flat | |
| | | | | | | | | | | Horizontal | Vertical |
| 1 mm ² | 2 A | 3 A | 4 A | 5 A | 6 A | 7 A | 8 A | 9 A | 10 A | 11 A | 12 A |
| 1.5 | 14.5 | 13.5 | 17.5 | 15.5 | 20 | 18 | - | - | - | - | - |
| 2.5 | 20 | 18 | 24 | 21 | 27 | 25 | - | - | - | - | - |
| 4 | 26 | 24 | 32 | 28 | 37 | 33 | - | - | - | - | - |
| 6 | 34 | 31 | 41 | 36 | 47 | 43 | - | - | - | - | - |
| 10 | 46 | 42 | 57 | 50 | 65 | 59 | - | - | - | - | - |
| 16 | 61 | 56 | 76 | 68 | 87 | 79 | - | - | - | - | - |
| 25 | 80 | 73 | 101 | 89 | 114 | 104 | 131 | 114 | 110 | 146 | 130 |
| 35 | 99 | 89 | 125 | 110 | 141 | 129 | 162 | 143 | 137 | 181 | 162 |
| 50 | 119 | 108 | 151 | 134 | 182 | 167 | 196 | 174 | 167 | 219 | 197 |
| 70 | 151 | 136 | 192 | 171 | 234 | 214 | 251 | 225 | 216 | 281 | 254 |
| 95 | 182 | 164 | 232 | 207 | 284 | 261 | 304 | 275 | 264 | 341 | 311 |
| 120 | 210 | 188 | 269 | 239 | 330 | 303 | 352 | 321 | 308 | 396 | 362 |
| 150 | 240 | 216 | 300 | 262 | 381 | 349 | 406 | 372 | 356 | 456 | 419 |
| 185 | 273 | 245 | 341 | 296 | 436 | 400 | 463 | 427 | 409 | 521 | 480 |
| 240 | 321 | 286 | 400 | 346 | 515 | 472 | 546 | 507 | 485 | 615 | 569 |
| 300 | 367 | 328 | 458 | 394 | 594 | 545 | 629 | 587 | 561 | 709 | 659 |
| 400 | - | - | 546 | 467 | 694 | 634 | 754 | 689 | 656 | 852 | 795 |
| 500 | - | - | 626 | 533 | 792 | 723 | 868 | 789 | 749 | 982 | 920 |
| 630 | - | - | 720 | 611 | 904 | 826 | 1005 | 905 | 855 | 1138 | 1070 |
| 800 | - | - | - | - | 1030 | 943 | 1086 | 1020 | 971 | 1265 | 1188 |
| 1000 | - | - | - | - | 1154 | 1058 | 1216 | 1149 | 1079 | 1420 | 1337 |



Voltage Drop (Per Amp Per Meter) according to BS 7671:2008 table 4D1B

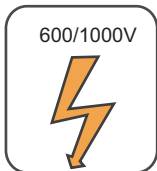
| Nominal Cross Section Area | 2 cables d.c. | 2 cables, single-phase a.c. | | | | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | | | | | | | |
|----------------------------|---------------|--------------------------------------------------------|------|------|--------------------------------------------------------------|-------|-------|------------------------------------------------------|-----------------------------------------------------------------|------|---------------------------------|-----------------------|------|-------|----------------------|-------|-------|--------|------|-------|------|------|-------|------|------|
| | | Ref. Methods A and B (enclosed in conduit or trunking) | | | Ref. Methods C & F (clipped direct, on trays or in free air) | | | Ref. Methods A & B (enclosed in conduit or trunking) | Ref. Methods C, F & G (clipped direct, on trays or in free air) | | | | | | | | | | | | | | | | |
| | | Cables touching | | | Cables spaced* 5 | | | | Cables touching, Trefoil | | | Cables touching, Flat | | | Cables spaced*, Flat | | | | | | | | | | |
| 1 | 2 | 3 | | | 4 | | | 5 | | | 6 | 7 | | | 8 | | | 9 | | | | | | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | | | | | |
| 1.5 | 29 | 29 | | | 29 | | | 25 | | | 25 | 25 | | | 25 | | | 25 | | | | | | | |
| 2.5 | 18 | 18 | | | 18 | | | 18 | | | 15 | 15 | | | 15 | | | 15 | | | | | | | |
| 4 | 11 | 11 | | | 11 | | | 11 | | | 9.5 | 9.5 | | | 9.5 | | | 9.5 | | | | | | | |
| 6 | 7.3 | 7.3 | | | 7.3 | | | 7.3 | | | 6.4 | 6.4 | | | 6.4 | | | 6.4 | | | | | | | |
| 10 | 4.4 | 4.4 | | | 4.4 | | | 4.4 | | | 3.8 | 3.8 | | | 3.8 | | | 3.8 | | | | | | | |
| 16 | 2.8 | 2.8 | | | 2.8 | | | 2.8 | | | 2.4 | 2.4 | | | 2.4 | | | 2.4 | | | | | | | |
| | | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 25 | 1.75 | 1.80 | 0.33 | 1.80 | 1.75 | 0.20 | 1.75 | 1.75 | 0.29 | 1.80 | 1.50 | 0.29 | 1.55 | 1.50 | 0.175 | 1.50 | 1.50 | 0.25 | 1.55 | 1.50 | 0.32 | 1.55 | 1.50 | 0.32 | 1.55 |
| 35 | 1.25 | 1.30 | 0.31 | 1.30 | 1.25 | 0.195 | 1.25 | 1.25 | 0.28 | 1.30 | 1.10 | 0.27 | 1.10 | 1.10 | 0.170 | 1.10 | 1.10 | 0.24 | 1.10 | 1.10 | 0.32 | 1.15 | 1.10 | 0.32 | 1.15 |
| 50 | 0.93 | 0.95 | 0.30 | 1.00 | 0.93 | 0.190 | 0.95 | 0.93 | 0.28 | 0.97 | 0.81 | 0.26 | 0.85 | 0.80 | 0.165 | 0.82 | 0.80 | 0.24 | 0.84 | 0.80 | 0.32 | 0.86 | 0.80 | 0.32 | 0.86 |
| 70 | 0.63 | 0.65 | 0.29 | 0.72 | 0.63 | 0.185 | 0.66 | 0.63 | 0.27 | 0.69 | 0.56 | 0.25 | 0.61 | 0.55 | 0.160 | 0.57 | 0.55 | 0.24 | 0.60 | 0.55 | 0.31 | 0.63 | 0.55 | 0.31 | 0.63 |
| 95 | 0.46 | 0.49 | 0.28 | 0.56 | 0.47 | 0.180 | 0.50 | 0.47 | 0.27 | 0.54 | 0.42 | 0.24 | 0.48 | 0.41 | 0.155 | 0.43 | 0.41 | 0.23 | 0.47 | 0.40 | 0.31 | 0.51 | 0.40 | 0.31 | 0.51 |
| 120 | 0.36 | 0.39 | 0.27 | 0.47 | 0.37 | 0.175 | 0.41 | 0.37 | 0.26 | 0.45 | 0.33 | 0.23 | 0.41 | 0.32 | 0.150 | 0.36 | 0.32 | 0.23 | 0.40 | 0.32 | 0.30 | 0.44 | 0.32 | 0.30 | 0.44 |
| 150 | 0.29 | 0.31 | 0.27 | 0.41 | 0.30 | 0.175 | 0.34 | 0.29 | 0.26 | 0.39 | 0.27 | 0.23 | 0.36 | 0.26 | 0.150 | 0.30 | 0.26 | 0.23 | 0.34 | 0.26 | 0.30 | 0.40 | 0.26 | 0.30 | 0.40 |
| 185 | 0.23 | 0.25 | 0.27 | 0.37 | 0.24 | 0.170 | 0.29 | 0.24 | 0.26 | 0.35 | 0.22 | 0.23 | 0.32 | 0.21 | 0.145 | 0.26 | 0.21 | 0.22 | 0.31 | 0.21 | 0.30 | 0.36 | 0.21 | 0.30 | 0.36 |
| 240 | 0.180 | 0.195 | 0.26 | 0.33 | 0.185 | 0.165 | 0.25 | 0.185 | 0.25 | 0.31 | 0.17 | 0.23 | 0.29 | 0.160 | 0.145 | 0.22 | 0.160 | 0.22 | 0.27 | 0.160 | 0.29 | 0.34 | 0.160 | 0.29 | 0.34 |
| 300 | 0.145 | 0.160 | 0.26 | 0.31 | 0.150 | 0.165 | 0.22 | 0.150 | 0.25 | 0.29 | 0.14 | 0.23 | 0.27 | 0.130 | 0.140 | 0.190 | 0.130 | 0.22 | 0.25 | 0.130 | 0.29 | 0.32 | 0.130 | 0.29 | 0.32 |
| 400 | 0.105 | 0.130 | 0.26 | 0.29 | 0.120 | 0.160 | 0.20 | 0.115 | 0.25 | 0.27 | 0.12 | 0.22 | 0.25 | 0.105 | 0.140 | 0.175 | 0.105 | 0.21 | 0.24 | 0.100 | 0.29 | 0.31 | 0.100 | 0.29 | 0.31 |
| 500 | 0.086 | 0.110 | 0.26 | 0.28 | 0.098 | 0.155 | 0.185 | 0.093 | 0.24 | 0.26 | 0.10 | 0.22 | 0.25 | 0.086 | 0.135 | 0.160 | 0.086 | 0.21 | 0.23 | 0.081 | 0.29 | 0.30 | 0.081 | 0.29 | 0.30 |
| 630 | 0.068 | 0.094 | 0.25 | 0.27 | 0.081 | 0.155 | 0.175 | 0.076 | 0.24 | 0.25 | 0.08 | 0.22 | 0.24 | 0.072 | 0.135 | 0.150 | 0.072 | 0.21 | 0.22 | 0.066 | 0.28 | 0.29 | 0.066 | 0.28 | 0.29 |
| 800 | 0.053 | - | - | - | 0.068 | 0.150 | 0.165 | 0.061 | 0.24 | 0.25 | - | - | - | 0.060 | 0.130 | 0.145 | 0.060 | 0.21 | 0.22 | 0.053 | 0.28 | 0.29 | 0.053 | 0.28 | 0.29 |
| 1000 | 0.042 | - | - | - | 0.059 | 0.150 | 0.160 | 0.050 | 0.24 | 0.24 | - | - | - | 0.052 | 0.130 | 0.140 | 0.052 | 0.20 | 0.21 | 0.044 | 0.28 | 0.28 | 0.044 | 0.28 | 0.28 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



Standard

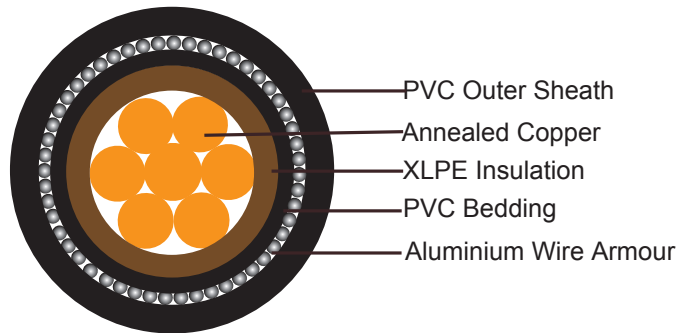
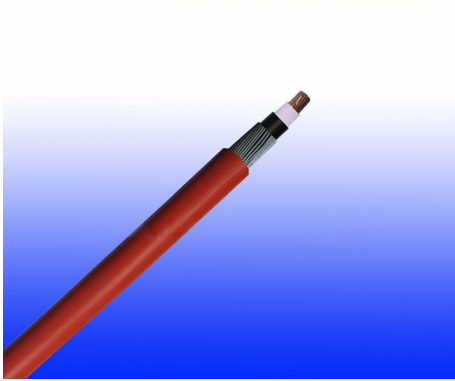


Flame Retardancy
IEC 60332-1

600/1000V XLPE Insulated, PVC Sheathed, Armoured Power Cables (Single Core)

FGD300 1RVMAV-R (CU/XLPE/PVC/AWA/PVC 600/1000V Class 2)

BS Code:6941X



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS 5467

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 60332-1-2 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed copper wire, stranded according to BS EN 60228 class 2.

Insulation: Extruded XLPE GP 8 according to BS 7655-1.3.

Bedding: PVC or polymeric compound.

Armouring: Aluminium Wire

Outer Sheath: PVC Type 9 according to BS 7655-4.2.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.



COLOUR CODE

Insulation Colour: Brown or blue

Sheath Colour: Black (other colours upon request)

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (XLPE): 90°C

Maximum short circuit temperature (5 Seconds): 250°C

Minimum bending radius:

Circular copper conductors: 6 x Overall Diameter

Shaped copper conductors: 8 x Overall Diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD300 1RVMAV-R | | | | | |
|-----------------------------|--------------------|------------------------------|---------------------------|------------------------------|--------------------------|--------------------------|---------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Bedding Thickness | Nominal Armour Wire Diameter | Nominal Sheath Thickness | Approx. Overall Diameter | Approx Weight |
| No. x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 1x50 | 2 | 1.0 | 0.8 | 0.9 | 1.5 | 17.5 | 800 |
| 1x70 | 2 | 1.1 | 0.8 | 1.25 | 1.5 | 20.2 | 990 |
| 1x95 | 2 | 1.1 | 0.8 | 1.25 | 1.6 | 22.3 | 1280 |
| 1x120 | 2 | 1.2 | 0.8 | 1.25 | 1.6 | 24.2 | 1550 |
| 1x150 | 2 | 1.4 | 1.0 | 1.6 | 1.7 | 27.4 | 1900 |
| 1x185 | 2 | 1.6 | 1.0 | 1.6 | 1.8 | 30 | 2320 |
| 1x240 | 2 | 1.7 | 1.0 | 1.6 | 1.8 | 32.8 | 2930 |
| 1x300 | 2 | 1.8 | 1.0 | 1.6 | 1.9 | 35.6 | 3580 |
| 1x400 | 2 | 2.0 | 1.2 | 2.0 | 2.0 | 40.5 | 4600 |
| 1x500 | 2 | 2.2 | 1.2 | 2.0 | 2.1 | 44.2 | 5680 |
| 1x630 | 2 | 2.4 | 1.2 | 2.0 | 2.2 | 48.8 | 7160 |
| 1x800 | 2 | 2.6 | 1.4 | 2.5 | 2.4 | 55.4 | 9315 |
| 1x1000 | 2 | 2.8 | 1.4 | 2.5 | 2.5 | 60.6 | 11490 |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671: 2008 table 4E3A

| Conductor cross-sectional area | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray, horizontal or vertical) | | | | | | | | |
|--------------------------------|------------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------|-----------------------------|----------|-----------------------------|----------|---------------------------------|----------|
| | Touching | | Touching | | | Spaced by on cable diameter | | | | | |
| | 2 cables, single-phase a.c. or d.c. flat | 3 or 4 cables, three-phase a.c. flat | 2 cables, single-phase a.c. or d.c. flat | 3 or 4 cables, three-phase a.c. flat | 3 cables three-phase a.c. trefoil | 2 cables, d.c. | | 2 cables, single-phase a.c. | | 3 or 4 cables, three-phase a.c. | |
| | | | | | | Horizontal | Vertical | Horizontal | Vertical | Horizontal | Vertical |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| mm ² | A | A | A | A | A | A | A | A | A | A | A |
| 50 | 237 | 220 | 253 | 232 | 222 | 284 | 270 | 282 | 266 | 288 | 266 |
| 70 | 303 | 277 | 322 | 293 | 285 | 356 | 349 | 357 | 337 | 358 | 331 |
| 95 | 367 | 333 | 389 | 352 | 346 | 446 | 426 | 436 | 412 | 425 | 393 |
| 120 | 425 | 383 | 449 | 405 | 402 | 519 | 497 | 504 | 477 | 485 | 449 |
| 150 | 488 | 437 | 516 | 462 | 463 | 600 | 575 | 566 | 539 | 549 | 510 |
| 185 | 557 | 496 | 587 | 524 | 529 | 688 | 660 | 643 | 614 | 618 | 574 |
| 240 | 656 | 579 | 689 | 612 | 625 | 815 | 782 | 749 | 714 | 715 | 666 |
| 300 | 755 | 662 | 792 | 700 | 720 | 943 | 906 | 842 | 805 | 810 | 755 |
| 400 | 853 | 717 | 899 | 767 | 815 | 1137 | 1094 | 929 | 889 | 848 | 797 |
| 500 | 962 | 791 | 1016 | 851 | 918 | 1314 | 1266 | 1032 | 989 | 923 | 871 |
| 630 | 1082 | 861 | 1146 | 935 | 1027 | 1528 | 1474 | 1139 | 1092 | 992 | 940 |
| 800 | 1170 | 904 | 1246 | 987 | 1119 | 1809 | 1744 | 1204 | 1155 | 1042 | 978 |
| 1000 | 1261 | 961 | 1345 | 1055 | 1214 | 2100 | 2026 | 1289 | 1238 | 1110 | 1041 |

Voltage Drop (Per Amp Per Meter) according to BS 7671: 2008 table 4E3B

| Nominal Cross Section Area 1 | 2 cables d.c. 2 | Ref. Methods C&F (clipped direct, on trays or in free air) | | | | | | | | | | | | | | |
|------------------------------|-----------------|------------------------------------------------------------|-------|------|-----------|------|------|---------------------------------|-------|------|---------------------|------|------|--------------------|------|------|
| | | 2 cables, single-phase a.c. | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | |
| | | Touching 3 | | | Spaced* 4 | | | Trefoil and touching 5 | | | Flat and touching 6 | | | Flat and spaced* 7 | | |
| | | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | |
| mm ² | mV/A/m | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 50 | 0.98 | 0.99 | 0.21 | 1.0 | 0.98 | 0.29 | 1.0 | 0.86 | 0.18 | 0.87 | 0.64 | 0.25 | 0.88 | 0.84 | 0.33 | 0.9 |
| 70 | 0.67 | 0.68 | 0.20 | 0.71 | 0.69 | 0.29 | 0.75 | 0.59 | 0.170 | 0.62 | 0.60 | 0.25 | 0.65 | 0.62 | 0.32 | 0.70 |
| 95 | 0.49 | 0.51 | 0.195 | 0.55 | 0.53 | 0.28 | 0.60 | 0.44 | 0.170 | 0.47 | 0.46 | 0.24 | 0.52 | 0.49 | 0.31 | 0.58 |
| 120 | 0.39 | 0.41 | 0.190 | 0.45 | 0.43 | 0.27 | 0.51 | 0.35 | 0.165 | 0.39 | 0.38 | 0.24 | 0.44 | 0.41 | 0.30 | 0.51 |



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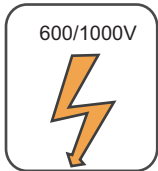
| Nominal Cross Section Area 1 | 2 cables d.c. 2 | Ref. Methods C&F (clipped direct, on trays or in free air) | | | | | | | | | | | | | | |
|---------------------------------|--------------------|------------------------------------------------------------|-------|-------|--------------|------|------|---------------------------------|-------|-------|------------------------|-------|------|-----------------------|-------|------|
| | | 2 cables, single-phase a.c. | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | |
| | | Touching 3 | | | Spaced* 4 | | | Trefoil and touching 5 | | | Flat and touching 6 | | | Flat and spaced* 7 | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | |
| 150 | 0.31 | 0.33 | 0.185 | 0.38 | 0.36 | 0.27 | 0.45 | 0.29 | 0.160 | 0.33 | 0.31 | 0.23 | 0.39 | 0.34 | 0.29 | 0.45 |
| 185 | 0.25 | 0.27 | 0.185 | 0.33 | 0.30 | 0.26 | 0.40 | 0.23 | 0.160 | 0.28 | 0.26 | 0.23 | 0.34 | 0.29 | 0.29 | 0.41 |
| 240 | 0.195 | 0.21 | 0.180 | 0.28 | 0.24 | 0.26 | 0.35 | 0.180 | 0.155 | 0.24 | 0.21 | 0.22 | 0.30 | 0.24 | 0.28 | 0.37 |
| 300 | 0.155 | 0.17 | 0.175 | 0.25 | 0.195 | 0.25 | 0.32 | 0.145 | 0.150 | 0.21 | 0.170 | 0.22 | 0.28 | 0.20 | 0.27 | 0.34 |
| 400 | 0.115 | 0.145 | 0.170 | 0.22 | 0.180 | 0.24 | 0.30 | 0.125 | 0.150 | 0.195 | 0.160 | 0.21 | 0.27 | 0.20 | 0.27 | 0.33 |
| 500 | 0.093 | 0.125 | 0.170 | 0.21 | 0.165 | 0.24 | 0.29 | 0.105 | 0.145 | 0.180 | 0.145 | 0.20 | 0.25 | 0.190 | 0.24 | 0.31 |
| 630 | 0.073 | 0.105 | 0.165 | 0.195 | 0.150 | 0.23 | 0.27 | 0.092 | 0.145 | 0.170 | 0.135 | 0.195 | 0.24 | 0.175 | 0.23 | 0.29 |
| 800 | 0.056 | 0.090 | 0.160 | 0.190 | 0.145 | 0.23 | 0.27 | 0.086 | 0.140 | 0.165 | 0.130 | 0.180 | 0.23 | 0.175 | 0.195 | 0.26 |
| 1000 | 0.045 | 0.092 | 0.155 | 0.180 | 0.140 | 0.21 | 0.25 | 0.080 | 0.135 | 0.155 | 0.125 | 0.170 | 0.21 | 0.165 | 0.180 | 0.24 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



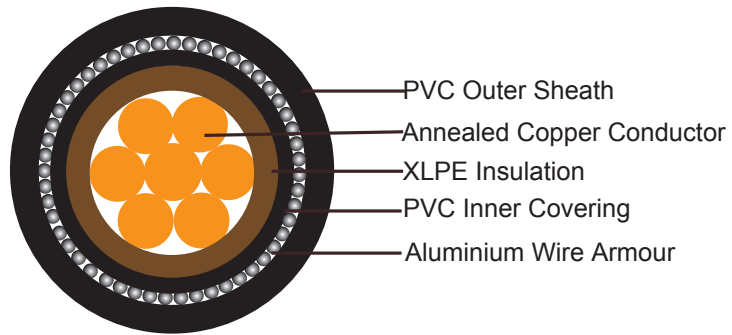
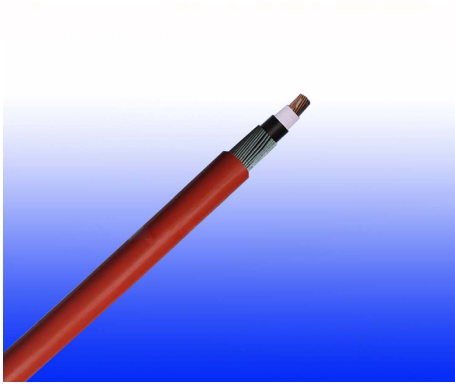
Standard



Flame Retardancy
BS EN 60332-1-2

600/1000V XLPE Insulated, PVC Sheathed, Armoured Power Cables (Single Core)

FGD300 1RVMAV-R (CU/XLPE/PVC/AWA/PVC 600/1000V Class 2)
VDE Code: N2XRY



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to IEC 60502-1

FIRE PERFORMANCE

| | |
|----------------------------------------------|-------------|
| Flame Retardance (Single Vertical Wire Test) | IEC 60332-1 |
|----------------------------------------------|-------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed copper wire, stranded according to IEC 60228 class 2.

Insulation: XLPE according to IEC 60502-1.

Inner Covering: Extruded PVC or polymeric compound.

Armouring: Aluminium Wire

Outer Sheath: Extruded PVC Type ST₁/ST₂ according to IEC 60502-1.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Brown or Blue

Other colours can be manufactured upon request.

Sheath Colour: Black (other colours upon request)



PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation: 80°C (For ST₁ Sheath); 90°C (For ST₂ Sheath)

Maximum short circuit temperature (5 Seconds): 250°C

Minimum bending radius:

Circular copper conductors: 6 x Overall Diameter

Shaped copper conductors: 8 x Overall Diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD300 1RVMAV-R | | | | | |
|-----------------------------|--------------------|------------------------------|----------------------------------|------------------------------|--------------------------|--------------------------|---------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Covering Thickness | Nominal Armour Wire Diameter | Nominal Sheath Thickness | Approx. Overall Diameter | Approx Weight |
| No. x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 1x1.5 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 10.0 | 205 |
| 1x2.5 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 10.4 | 236 |
| 1x4 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 10.9 | 269 |
| 1x6 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 11.4 | 308 |
| 1x10 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 12.2 | 380 |
| 1x16 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 13.1 | 475 |
| 1x25 | 2 | 0.9 | 1.0 | 0.8 | 1.8 | 14.6 | 631 |
| 1x35 | 2 | 0.9 | 1.0 | 1.25 | 1.8 | 16.6 | 900 |
| 1x50 | 2 | 1.0 | 1.0 | 1.25 | 1.8 | 18.1 | 1096 |
| 1x70 | 2 | 1.1 | 1.0 | 1.25 | 1.8 | 19.7 | 1401 |
| 1x95 | 2 | 1.1 | 1.0 | 1.6 | 1.8 | 22.0 | 1901 |
| 1x120 | 2 | 1.2 | 1.0 | 1.6 | 1.8 | 23.6 | 2253 |
| 1x150 | 2 | 1.4 | 1.0 | 1.6 | 1.8 | 25.4 | 2642 |
| 1x185 | 2 | 1.6 | 1.0 | 1.6 | 1.8 | 27.4 | 3156 |
| 1x240 | 2 | 1.7 | 1.0 | 1.6 | 1.9 | 29.9 | 3919 |
| 1x300 | 2 | 1.8 | 1.0 | 2.0 | 2.0 | 33.1 | 4984 |
| 1x400 | 2 | 2.0 | 1.2 | 2.0 | 2.2 | 37.3 | 6172 |
| 1x500 | 2 | 2.2 | 1.2 | 2.0 | 2.3 | 40.5 | 7482 |
| 1x630 | 2 | 2.4 | 1.2 | 2.5 | 2.4 | 45.3 | 9743 |
| 1x800 | 2 | 2.6 | 1.4 | 2.5 | 2.6 | 50.0 | 12065 |
| 1x1000 | 2 | 2.8 | 1.4 | 2.5 | 2.7 | 54.5 | 14680 |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671: 2008 table 4E3A

| Conductor cross-sectional area | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray, horizontal or vertical) | | | | | | | | |
|--------------------------------|------------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------|-----------------------------|----------|-----------------------------|----------|---------------------------------|----------|
| | Touching | | Touching | | | Spaced by on cable diameter | | | | | |
| | 2 cables, single-phase a.c. or d.c. flat | 3 or 4 cables, three-phase a.c. flat | 2 cables, single-phase a.c. or d.c. flat | 3 or 4 cables, three-phase a.c. flat | 3 cables three-phase a.c. trefoil | 2 cables, d.c. | | 2 cables, single-phase a.c. | | 3 or 4 cables, three-phase a.c. | |
| | | | | | | Horizontal | Vertical | Horizontal | Vertical | Horizontal | Vertical |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| mm ² | A | A | A | A | A | A | A | A | A | A | A |
| 50 | 237 | 220 | 253 | 232 | 222 | 284 | 270 | 282 | 266 | 288 | 266 |
| 70 | 303 | 277 | 322 | 293 | 285 | 356 | 349 | 357 | 337 | 358 | 331 |
| 95 | 367 | 333 | 389 | 352 | 346 | 446 | 426 | 436 | 412 | 425 | 393 |
| 120 | 425 | 383 | 449 | 405 | 402 | 519 | 497 | 504 | 477 | 485 | 449 |
| 150 | 488 | 437 | 516 | 462 | 463 | 600 | 575 | 566 | 539 | 549 | 510 |
| 185 | 557 | 496 | 587 | 524 | 529 | 688 | 660 | 643 | 614 | 618 | 574 |
| 240 | 656 | 579 | 689 | 612 | 625 | 815 | 782 | 749 | 714 | 715 | 666 |
| 300 | 755 | 662 | 792 | 700 | 720 | 943 | 906 | 842 | 805 | 810 | 755 |
| 400 | 853 | 717 | 899 | 767 | 815 | 1137 | 1094 | 929 | 889 | 848 | 797 |
| 500 | 962 | 791 | 1016 | 851 | 918 | 1314 | 1266 | 1032 | 989 | 923 | 871 |
| 630 | 1082 | 861 | 1146 | 935 | 1027 | 1528 | 1474 | 1139 | 1092 | 992 | 940 |
| 800 | 1170 | 904 | 1246 | 987 | 1119 | 1809 | 1744 | 1204 | 1155 | 1042 | 978 |
| 1000 | 1261 | 961 | 1345 | 1055 | 1214 | 2100 | 2026 | 1289 | 1238 | 1110 | 1041 |

Voltage Drop (Per Amp Per Meter) according to BS 7671: 2008 table 4E3B

| Nominal Cross Section Area 1 | 2 cables d.c. 2 | Ref. Methods C&F (clipped direct, on trays or in free air) | | | | | | | | | | | | | | |
|------------------------------|-----------------|------------------------------------------------------------|-------|------|-----------|------|------|---------------------------------|-------|------|---------------------|------|------|--------------------|------|------|
| | | 2 cables, single-phase a.c. | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | |
| | | Touching 3 | | | Spaced* 4 | | | Trefoil and touching 5 | | | Flat and touching 6 | | | Flat and spaced* 7 | | |
| | | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | |
| mm ² | mV/A/m | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 50 | 0.98 | 0.99 | 0.21 | 1.0 | 0.98 | 0.29 | 1.0 | 0.86 | 0.18 | 0.87 | 0.64 | 0.25 | 0.88 | 0.84 | 0.33 | 0.9 |
| 70 | 0.67 | 0.68 | 0.20 | 0.71 | 0.69 | 0.29 | 0.75 | 0.59 | 0.170 | 0.62 | 0.60 | 0.25 | 0.65 | 0.62 | 0.32 | 0.70 |
| 95 | 0.49 | 0.51 | 0.195 | 0.55 | 0.53 | 0.28 | 0.60 | 0.44 | 0.170 | 0.47 | 0.46 | 0.24 | 0.52 | 0.49 | 0.31 | 0.58 |
| 120 | 0.39 | 0.41 | 0.190 | 0.45 | 0.43 | 0.27 | 0.51 | 0.35 | 0.165 | 0.39 | 0.38 | 0.24 | 0.44 | 0.41 | 0.30 | 0.51 |
| 150 | 0.31 | 0.33 | 0.185 | 0.38 | 0.36 | 0.27 | 0.45 | 0.29 | 0.160 | 0.33 | 0.31 | 0.23 | 0.39 | 0.34 | 0.29 | 0.45 |



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| Nominal Cross Section Area 1 | 2 cables d.c. 2 | Ref. Methods C&F (clipped direct, on trays or in free air) | | | | | | | | | | | | | | |
|------------------------------|-----------------|------------------------------------------------------------|-------|-------|-----------|------|------|---------------------------------|-------|-------|---------------------|-------|------|--------------------|-------|------|
| | | 2 cables, single-phase a.c. | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | |
| | | Touching 3 | | | Spaced* 4 | | | Trefoil and touching 5 | | | Flat and touching 6 | | | Flat and spaced* 7 | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | |
| 185 | 0.25 | 0.27 | 0.185 | 0.33 | 0.30 | 0.26 | 0.40 | 0.23 | 0.160 | 0.28 | 0.26 | 0.23 | 0.34 | 0.29 | 0.29 | 0.41 |
| 240 | 0.195 | 0.21 | 0.180 | 0.28 | 0.24 | 0.26 | 0.35 | 0.180 | 0.155 | 0.24 | 0.21 | 0.22 | 0.30 | 0.24 | 0.28 | 0.37 |
| 300 | 0.155 | 0.17 | 0.175 | 0.25 | 0.195 | 0.25 | 0.32 | 0.145 | 0.150 | 0.21 | 0.170 | 0.22 | 0.28 | 0.20 | 0.27 | 0.34 |
| 400 | 0.115 | 0.145 | 0.170 | 0.22 | 0.180 | 0.24 | 0.30 | 0.125 | 0.150 | 0.195 | 0.160 | 0.21 | 0.27 | 0.20 | 0.27 | 0.33 |
| 500 | 0.093 | 0.125 | 0.170 | 0.21 | 0.165 | 0.24 | 0.29 | 0.105 | 0.145 | 0.180 | 0.145 | 0.20 | 0.25 | 0.190 | 0.24 | 0.31 |
| 630 | 0.073 | 0.105 | 0.165 | 0.195 | 0.150 | 0.23 | 0.27 | 0.092 | 0.145 | 0.170 | 0.135 | 0.195 | 0.24 | 0.175 | 0.23 | 0.29 |
| 800 | 0.056 | 0.090 | 0.160 | 0.190 | 0.145 | 0.23 | 0.27 | 0.086 | 0.140 | 0.165 | 0.130 | 0.180 | 0.23 | 0.175 | 0.195 | 0.26 |
| 1000 | 0.045 | 0.092 | 0.155 | 0.180 | 0.140 | 0.21 | 0.25 | 0.080 | 0.135 | 0.155 | 0.125 | 0.170 | 0.21 | 0.165 | 0.180 | 0.24 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



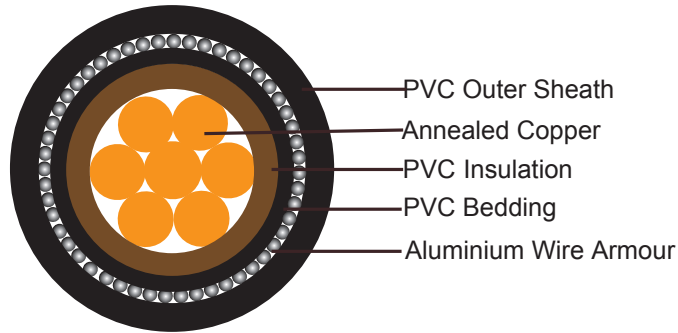
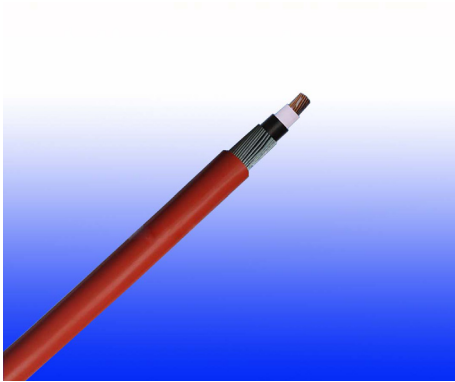
Standard



Flame Retardancy
IEC 60332-1

600/1000V PVC Insulated, PVC Sheathed, Armoured Power Cables (Single Core)

FGD300 1VMAV-R (CU/PVC/PVC/AWA/PVC 600/1000V Class 2)



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS 6346

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 50265-2-1 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed copper wire, stranded according to BS 6360 class 2.

Insulation: PVC TI 1 according to BS 7655-3.1.

Bedding: PVC.

Armouring: Aluminium Wire

Outer Sheath: PVC TM 1 according to BS 7655-4.1.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Brown or blue

Sheath Colour: Black (other colours upon request)



PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (PVC): 70°C

Maximum short circuit temperature (5 Seconds): 160°C

Minimum bending radius:

Circular copper conductors: 6 x Overall Diameter

Shaped copper conductors: 8 x Overall Diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD300 1VVMAV-R | | | | | |
|-----------------------------|--------------------|------------------------------|---------------------------|------------------------------|--------------------------|--------------------------|---------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Bedding Thickness | Nominal Armour Wire Diameter | Nominal Sheath Thickness | Approx. Overall Diameter | Approx Weight |
| No. x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 1x50 | 2 | 1.4 | 0.8 | 1.25 | 1.5 | 19.1 | 820 |
| 1x70 | 2 | 1.4 | 0.8 | 1.25 | 1.6 | 21.1 | 1070 |
| 1x95 | 2 | 1.6 | 0.8 | 1.25 | 1.6 | 23.4 | 1390 |
| 1x120 | 2 | 1.6 | 1.0 | 1.6 | 1.7 | 26.3 | 1600 |
| 1x150 | 2 | 1.8 | 1.0 | 1.6 | 1.7 | 28.3 | 1900 |
| 1x185 | 2 | 2.0 | 1.0 | 1.6 | 1.8 | 30.8 | 2450 |
| 1x240 | 2 | 2.2 | 1.0 | 1.6 | 1.9 | 34.1 | 3100 |
| 1x300 | 2 | 2.4 | 1.0 | 1.6 | 1.9 | 37.0 | 3760 |
| 1x400 | 2 | 2.6 | 1.2 | 2.0 | 2.1 | 42.0 | 4850 |
| 1x500 | 2 | 2.8 | 1.2 | 2.0 | 2.1 | 45.6 | 5930 |
| 1x630 | 2 | 2.8 | 1.2 | 2.0 | 2.2 | 49.7 | 7390 |
| 1x800 | 2 | 2.8 | 1.4 | 2.5 | 2.4 | 55.8 | 9400 |
| 1x1000 | 2 | 3.0 | 1.4 | 2.5 | 2.5 | 61.0 | 11430 |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 70°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671: 2008 table 4D3A

| Conductor cross-sectional area | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray, horizontal or vertical) | | | | | | | | |
|--------------------------------|------------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------|---------------------------------|-----------------------------------|-----------------------------|----------|-----------------------------|----------|---------------------------------|----------|
| | Touching | | Touching | | | Spaced by on cable diameter | | | | | |
| | 2 cables, single-phase a.c. or d.c. flat | 3 or 4 cables, three-phase a.c. flat | 2 cables, single-phase a.c. or d.c. flat | 3 cables, three-phase a.c. flat | 3 cables three-phase a.c. trefoil | 2 cables, d.c. | | 2 cables, single-phase a.c. | | 3 or 4 cables, three-phase a.c. | |
| | | | | | | Horizontal | Vertical | Horizontal | Vertical | Horizontal | Vertical |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| mm ² | A | A | A | A | A | A | A | A | A | A | A |
| 50 | 193 | 179 | 205 | 189 | 181 | 229 | 216 | 229 | 217 | 230 | 212 |
| 70 | 245 | 225 | 259 | 238 | 231 | 294 | 279 | 287 | 272 | 286 | 263 |
| 95 | 296 | 269 | 313 | 285 | 280 | 357 | 340 | 349 | 332 | 338 | 313 |
| 120 | 342 | 309 | 360 | 327 | 324 | 415 | 396 | 401 | 383 | 385 | 357 |
| 150 | 393 | 352 | 413 | 373 | 373 | 479 | 458 | 449 | 429 | 436 | 405 |
| 185 | 447 | 399 | 469 | 422 | 425 | 548 | 525 | 511 | 489 | 490 | 456 |
| 240 | 525 | 465 | 550 | 492 | 501 | 648 | 622 | 593 | 568 | 566 | 528 |
| 300 | 594 | 515 | 624 | 547 | 567 | 748 | 719 | 668 | 640 | 616 | 578 |
| 400 | 687 | 575 | 723 | 618 | 657 | 885 | 851 | 737 | 707 | 674 | 632 |
| 500 | 763 | 622 | 805 | 673 | 731 | 1035 | 997 | 810 | 777 | 721 | 676 |
| 630 | 843 | 669 | 891 | 728 | 809 | 1218 | 1174 | 893 | 856 | 771 | 723 |
| 800 | 919 | 710 | 976 | 777 | 886 | 1441 | 1390 | 943 | 905 | 824 | 772 |
| 1000 | 975 | 737 | 1041 | 808 | 945 | 1685 | 1627 | 1008 | 967 | 872 | 816 |

Voltage Drop (Per Amp Per Meter) according to BS 7671: 2008 table 4D3B

| Nominal Cross Section Area 1 | 2 cables d.c. 2 | Ref. Methods C&F (clipped direct, on trays or in free air) | | | | | | | | | | | | | | |
|------------------------------|-----------------|------------------------------------------------------------|-------|------|-----------|------|------|---------------------------------|-------|------|---------------------|------|------|--------------------|------|------|
| | | 2 cables, single-phase a.c. | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | |
| | | Touching 3 | | | Spaced* 4 | | | Trefoil and touching 5 | | | Flat and touching 6 | | | Flat and spaced* 7 | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | |
| | | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 50 | 0.93 | 0.93 | 0.22 | 0.95 | 0.92 | 0.30 | 0.97 | 0.80 | 0.19 | 0.82 | 0.79 | 0.26 | 0.84 | 0.79 | 0.34 | 0.86 |
| 70 | 0.63 | 0.64 | 0.21 | 0.68 | 0.66 | 0.29 | 0.72 | 0.55 | 0.18 | 0.58 | 0.57 | 0.25 | 0.62 | 0.59 | 0.32 | 0.68 |
| 95 | 0.46 | 0.48 | 0.20 | 0.52 | 0.51 | 0.28 | 0.58 | 0.42 | 0.175 | 0.45 | 0.44 | 0.25 | 0.50 | 0.47 | 0.31 | 0.57 |
| 120 | 0.36 | 0.39 | 0.195 | 0.43 | 0.42 | 0.28 | 0.50 | 0.33 | 0.170 | 0.37 | 0.36 | 0.24 | 0.43 | 0.40 | 0.30 | 0.50 |
| 150 | 0.29 | 0.31 | 0.190 | 0.37 | 0.34 | 0.27 | 0.44 | 0.27 | 0.165 | 0.32 | 0.30 | 0.24 | 0.38 | 0.34 | 0.30 | 0.45 |



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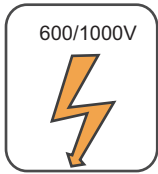
| Nominal Cross Section Area 1 | 2 cables d.c. 2 | Ref. Methods C&F (clipped direct, on trays or in free air) | | | | | | | | | | | | | | |
|---------------------------------|--------------------|------------------------------------------------------------|-------|-------|--------------|------|------|---------------------------------|-------|-------|------------------------|-------|------|-----------------------|-------|------|
| | | 2 cables, single-phase a.c. | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | |
| | | Touching 3 | | | Spaced* 4 | | | Trefoil and touching 5 | | | Flat and touching 6 | | | Flat and spaced* 7 | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | |
| 185 | 0.23 | 0.26 | 0.190 | 0.32 | 0.29 | 0.27 | 0.39 | 0.22 | 0.160 | 0.27 | 0.25 | 0.23 | 0.34 | 0.29 | 0.29 | 0.41 |
| 240 | 0.18 | 0.20 | 0.180 | 0.27 | 0.23 | 0.26 | 0.35 | 0.175 | 0.160 | 0.23 | 0.20 | 0.23 | 0.30 | 0.24 | 0.28 | 0.37 |
| 300 | 0.145 | 0.160 | 0.180 | 0.24 | 0.19 | 0.26 | 0.32 | 0.140 | 0.155 | 0.21 | 0.165 | 0.22 | 0.28 | 0.20 | 0.28 | 0.34 |
| 400 | 0.105 | 0.140 | 0.175 | 0.22 | 0.18 | 0.24 | 0.30 | 0.12 | 0.130 | 0.195 | 0.160 | 0.21 | 0.26 | 0.21 | 0.25 | 0.32 |
| 500 | 0.086 | 0.120 | 0.170 | 0.21 | 0.165 | 0.23 | 0.29 | 0.105 | 0.145 | 0.18 | 0.145 | 0.20 | 0.25 | 0.19 | 0.24 | 0.30 |
| 630 | 0.068 | 0.105 | 0.165 | 0.195 | 0.150 | 0.22 | 0.27 | 0.091 | 0.145 | 0.17 | 0.135 | 0.195 | 0.23 | 0.175 | 0.22 | 0.28 |
| 800 | 0.053 | 0.095 | 0.160 | 0.185 | 0.145 | 0.21 | 0.25 | 0.082 | 0.140 | 0.160 | 0.125 | 0.180 | 0.22 | 0.170 | 0.195 | 0.26 |
| 1000 | 0.042 | 0.091 | 0.155 | 0.180 | 0.140 | 0.19 | 0.24 | 0.079 | 0.135 | 0.155 | 0.125 | 0.165 | 0.21 | 0.165 | 0.170 | 0.24 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



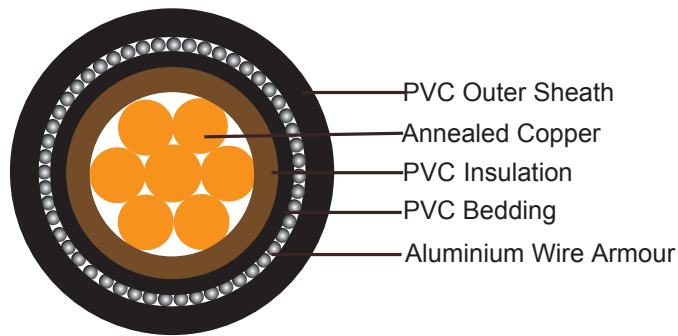
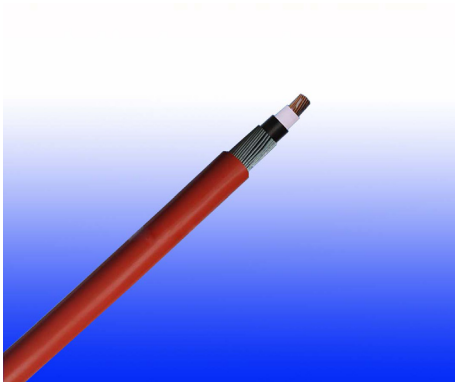
Standard



Flame Retardancy
BS EN 50265-2-1

600/1000V PVC Insulated, PVC Sheathed, Armoured Power Cables (Single Core)

FGD300 1VMAV-R (CU/PVC/PVC/AWA/PVC 600/1000V Class 2)
VDE Code: NYRY



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to IEC 60502-1

FIRE PERFORMANCE

| | |
|----------------------------------------------|-------------|
| Flame Retardance (Single Vertical Wire Test) | IEC 60332-1 |
|----------------------------------------------|-------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed copper wire, stranded according to BS EN 60228 class 2.

Insulation: PVC/A according to IEC 60502-1.

Inner Covering: Extruded PVC or polymeric compound.

Armouring: Aluminium Wire

Outer Sheath: Extruded PVC Type ST₁/ST₂ according to IEC 60502-1.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Brown or Blue

Other colours can be manufactured upon request.



Sheath Colour: Black (other colours upon request)

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (PVC): 70°C

Maximum short circuit temperature (5 Seconds): 160°C(≤300 mm²); 140°C(>300 mm²)

Minimum bending radius:

Circular copper conductors: 6 x Overall Diameter

Shaped copper conductors: 8 x Overall Diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD300 1VVMAV-R | | | | | |
|-----------------------------|--------------------|------------------------------|----------------------------------|------------------------------|--------------------------|--------------------------|---------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Covering Thickness | Nominal Armour Wire Diameter | Nominal Sheath Thickness | Approx. Overall Diameter | Approx Weight |
| No. x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 1x4 | 2 | 1.0 | 1.0 | 0.8 | 1.8 | 11.5 | 213 |
| 1x6 | 2 | 1.0 | 1.0 | 0.8 | 1.8 | 12.0 | 247 |
| 1x10 | 2 | 1.0 | 1.0 | 0.8 | 1.8 | 12.8 | 310 |
| 1x16 | 2 | 1.0 | 1.0 | 0.8 | 1.8 | 13.7 | 394 |
| 1x25 | 2 | 1.2 | 1.0 | 0.8 | 1.8 | 15.2 | 534 |
| 1x35 | 2 | 1.2 | 1.0 | 1.25 | 1.8 | 17.2 | 713 |
| 1x50 | 2 | 1.4 | 1.0 | 1.25 | 1.8 | 18.9 | 893 |
| 1x70 | 2 | 1.4 | 1.0 | 1.25 | 1.8 | 20.3 | 1158 |
| 1x95 | 2 | 1.6 | 1.0 | 1.6 | 1.8 | 23.0 | 1558 |
| 1x120 | 2 | 1.6 | 1.0 | 1.6 | 1.8 | 24.4 | 1863 |
| 1x150 | 2 | 1.8 | 1.0 | 1.6 | 1.8 | 26.2 | 2214 |
| 1x185 | 2 | 2.0 | 1.0 | 1.6 | 1.9 | 28.2 | 2697 |
| 1x240 | 2 | 2.2 | 1.0 | 1.6 | 1.9 | 31.0 | 3402 |
| 1x300 | 2 | 2.4 | 1.0 | 2.0 | 2.1 | 34.4 | 4282 |
| 1x400 | 2 | 2.6 | 1.2 | 2.0 | 2.2 | 38.6 | 5360 |
| 1x500 | 2 | 2.8 | 1.2 | 2.0 | 2.3 | 41.8 | 6583 |
| 1x630 | 2 | 2.8 | 1.2 | 2.5 | 2.4 | 46.2 | 8401 |
| 1x800 | 2 | 2.8 | 1.4 | 2.5 | 2.6 | 50.5 | 10515 |
| 1x1000 | 2 | 3.0 | 1.4 | 2.5 | 2.7 | 55.0 | 12968 |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 70°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) BS 7671: 2008 table 4D3A

| Conductor cross-sectional area | Reference Method C (clipped direct) | | Reference Method F (in free air or on a perforated cable tray, horizontal or vertical) | | | | | | | | |
|--------------------------------|------------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------|---------------------------------|-----------------------------------|-----------------------------|----------|-----------------------------|----------|---------------------------------|----------|
| | Touching | | Touching | | | Spaced by on cable diameter | | | | | |
| | 2 cables, single-phase a.c. or d.c. flat | 3 or 4 cables, three-phase a.c. flat | 2 cables, single-phase a.c. or d.c. flat | 3 cables, three-phase a.c. flat | 3 cables three-phase a.c. trefoil | 2 cables, d.c. | | 2 cables, single-phase a.c. | | 3 or 4 cables, three-phase a.c. | |
| | | | | | | Horizontal | Vertical | Horizontal | Vertical | Horizontal | Vertical |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| mm ² | A | A | A | A | A | A | A | A | A | A | A |
| 50 | 193 | 179 | 205 | 189 | 181 | 229 | 216 | 229 | 217 | 230 | 212 |
| 70 | 245 | 225 | 259 | 238 | 231 | 294 | 279 | 287 | 272 | 286 | 263 |
| 95 | 296 | 269 | 313 | 285 | 280 | 357 | 340 | 349 | 332 | 338 | 313 |
| 120 | 342 | 309 | 360 | 327 | 324 | 415 | 396 | 401 | 383 | 385 | 357 |
| 150 | 393 | 352 | 413 | 373 | 373 | 479 | 458 | 449 | 429 | 436 | 405 |
| 185 | 447 | 399 | 469 | 422 | 425 | 548 | 525 | 511 | 489 | 490 | 456 |
| 240 | 525 | 465 | 550 | 492 | 501 | 648 | 622 | 593 | 568 | 566 | 528 |
| 300 | 594 | 515 | 624 | 547 | 567 | 748 | 719 | 668 | 640 | 616 | 578 |
| 400 | 687 | 575 | 723 | 618 | 657 | 885 | 851 | 737 | 707 | 674 | 632 |
| 500 | 763 | 622 | 805 | 673 | 731 | 1035 | 997 | 810 | 777 | 721 | 676 |
| 630 | 843 | 669 | 891 | 728 | 809 | 1218 | 1174 | 893 | 856 | 771 | 723 |
| 800 | 919 | 710 | 976 | 777 | 886 | 1441 | 1390 | 943 | 905 | 824 | 772 |
| 1000 | 975 | 737 | 1041 | 808 | 945 | 1685 | 1627 | 1008 | 967 | 872 | 816 |

Voltage Drop (Per Amp Per Meter) BS 7671: 2008 table 4D3B

| Nominal Cross Section Area 1 | 2 cables d.c. 2 | Ref. Methods C&F (clipped direct, on trays or in free air) | | | | | | | | | | | | | | |
|------------------------------|-----------------|------------------------------------------------------------|------|------|-----------|------|------|---------------------------------|------|------|---------------------|------|------|--------------------|------|------|
| | | 2 cables, single-phase a.c. | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | |
| | | Touching 3 | | | Spaced* 4 | | | Trefoil and touching 5 | | | Flat and touching 6 | | | Flat and spaced* 7 | | |
| | | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | |
| mm ² | mV/A/m | r | x | z | r | x | z | r | x | z | r | x | z | r | x | z |
| 50 | 0.93 | 0.93 | 0.22 | 0.95 | 0.92 | 0.30 | 0.97 | 0.80 | 0.19 | 0.82 | 0.79 | 0.26 | 0.84 | 0.79 | 0.34 | 0.86 |
| 70 | 0.63 | 0.64 | 0.21 | 0.68 | 0.66 | 0.29 | 0.72 | 0.55 | 0.18 | 0.58 | 0.57 | 0.25 | 0.62 | 0.59 | 0.32 | 0.68 |



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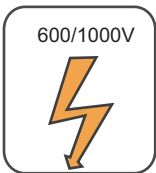
| Nominal Cross Section Area 1 | 2 cables d.c. 2 | Ref. Methods C&F(clipped direct, on trays or in free air) | | | | | | | | | | | | | | |
|------------------------------|-----------------|-----------------------------------------------------------|-------|-------|-----------|------|------|---------------------------------|-------|-------|---------------------|-------|------|--------------------|-------|------|
| | | 2 cables, single-phase a.c. | | | | | | 3 or 4 cables, three-phase a.c. | | | | | | | | |
| | | Touching 3 | | | Spaced* 4 | | | Trefoil and touching 5 | | | Flat and touching 6 | | | Flat and spaced* 7 | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | | mV/A/m | | |
| 95 | 0.46 | 0.48 | 0.20 | 0.52 | 0.51 | 0.28 | 0.58 | 0.42 | 0.175 | 0.45 | 0.44 | 0.25 | 0.50 | 0.47 | 0.31 | 0.57 |
| 120 | 0.36 | 0.39 | 0.195 | 0.43 | 0.42 | 0.28 | 0.50 | 0.33 | 0.170 | 0.37 | 0.36 | 0.24 | 0.43 | 0.40 | 0.30 | 0.50 |
| 150 | 0.29 | 0.31 | 0.190 | 0.37 | 0.34 | 0.27 | 0.44 | 0.27 | 0.165 | 0.32 | 0.30 | 0.24 | 0.38 | 0.34 | 0.30 | 0.45 |
| 185 | 0.23 | 0.26 | 0.190 | 0.32 | 0.29 | 0.27 | 0.39 | 0.22 | 0.160 | 0.27 | 0.25 | 0.23 | 0.34 | 0.29 | 0.29 | 0.41 |
| 240 | 0.18 | 0.20 | 0.180 | 0.27 | 0.23 | 0.26 | 0.35 | 0.175 | 0.160 | 0.23 | 0.20 | 0.23 | 0.30 | 0.24 | 0.28 | 0.37 |
| 300 | 0.145 | 0.160 | 0.180 | 0.24 | 0.19 | 0.26 | 0.32 | 0.140 | 0.155 | 0.21 | 0.165 | 0.22 | 0.28 | 0.20 | 0.28 | 0.34 |
| 400 | 0.105 | 0.140 | 0.175 | 0.22 | 0.18 | 0.24 | 0.30 | 0.12 | 0.130 | 0.195 | 0.160 | 0.21 | 0.26 | 0.21 | 0.25 | 0.32 |
| 500 | 0.086 | 0.120 | 0.170 | 0.21 | 0.165 | 0.23 | 0.29 | 0.105 | 0.145 | 0.18 | 0.145 | 0.20 | 0.25 | 0.19 | 0.24 | 0.30 |
| 630 | 0.068 | 0.105 | 0.165 | 0.195 | 0.150 | 0.22 | 0.27 | 0.091 | 0.145 | 0.17 | 0.135 | 0.195 | 0.23 | 0.175 | 0.22 | 0.28 |
| 800 | 0.053 | 0.095 | 0.160 | 0.185 | 0.145 | 0.21 | 0.25 | 0.082 | 0.140 | 0.160 | 0.125 | 0.180 | 0.22 | 0.170 | 0.195 | 0.26 |
| 1000 | 0.042 | 0.091 | 0.155 | 0.180 | 0.140 | 0.19 | 0.24 | 0.079 | 0.135 | 0.155 | 0.125 | 0.165 | 0.21 | 0.165 | 0.170 | 0.24 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



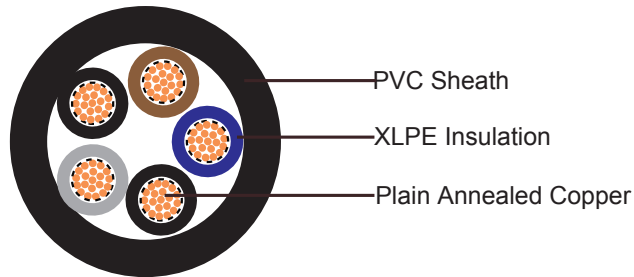
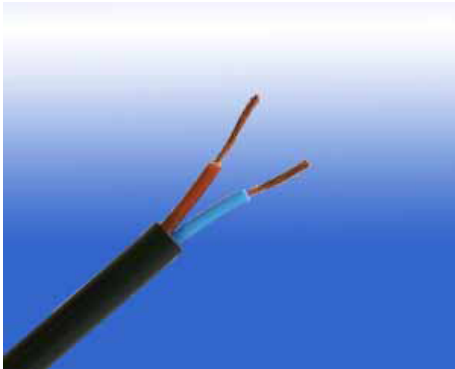
Standard



Flame Retardancy
BS EN 50265-2-1

600/1000V XLPE Insulated, PVC Sheathed, Unarmoured Power Cables (2-5 Cores)

FGD400 1RV-R (CU/XLPE/PVC 600/1000V Class 2)



APPLICATION

The cables are mainly use in fixed installations in industrial areas, buildings and similar applications but not for burial in the ground, either directly or in ducts.

STANDARDS

Basic design to BS 7889:2012

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 60332-1-2 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed copper wire, stranded according to BS EN 60228 class 2.

Insulation: XLPE type GP8 according to BS 7655-1.3.

Filling: If necessary, the formation of a compact and reasonably circular cable shall be achieved by one of the following methods.

- a) The application of synthetic fillers or binder tape(s).
- b) The optional inner covering.
- c) The sheath provided it effectively fills the interstices.
- d) Any combination of the above.

Optional Inner Covering: The optional inner covering, where used, shall consist of an extruded layer of synthetic polymeric material. It shall surround the single core and the laid-up two, three, four or five cores, giving the assembly a practically circular shape.

Outer Sheath: PVC Type 9 according to BS 7655-4.2.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.



COLOUR CODE

Insulation Colour:

Two-core: Brown, blue

Three-core: Brown, black, grey. Alternatively, green-and-yellow, blue, brown

Four-core Blue, brown, black, grey. Alternatively, green-and-yellow, brown, black, grey

Five-core Green-and-yellow, blue, brown, black, grey

Note: Depending on their intended use, the cables might be subject to the core colour requirements specified in BS 7671 or other standards, or in statutory requirements.

Sheath Colour: Black (other colours can be offered upon request)

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (XLPE): 90°C

Maximum short circuit temperature (5 Seconds): 250°C

Minimum bending radius:

Circular copper conductor (OD ≤ 25mm): 4 x Overall Diameter

Circular copper conductor (OD > 25mm): 6 x Overall Diameter

Shaped copper conductor: 8 x Overall Diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD400 1RV-R | | | |
|--------------------------------|-----------------------|------------------------------------|--------------------------------|--------------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | kg/km |
| 2 Cores | | | | | |
| 2x1.5 ^a | 2 | 0.7 | 1.8 | 9.2 | 108 |
| 2x2.5 ^a | 2 | 0.7 | 1.8 | 10.4 | 142 |
| 2x4.0 ^a | 2 | 0.7 | 1.8 | 11.5 | 186 |
| 2x6.0 ^a | 2 | 0.7 | 1.8 | 12.6 | 239 |
| 2x10 ^a | 2 | 0.7 | 1.8 | 14.5 | 344 |
| 2x16 ^a | 2 | 0.7 | 1.8 | 16.6 | 488 |
| 2x25 ^a | 2 | 0.9 | 1.8 | 20.0 | 727 |
| 2x35 ^a | 2 | 0.9 | 1.8 | 22.3 | 954 |
| 2x50 ^a | 2 | 1.0 | 1.8 | 25.4 | 1251 |
| 2x70 ^a | 2 | 1.1 | 1.8 | 29.4 | 1739 |
| 2x95 ^a | 2 | 1.1 | 1.9 | 33.4 | 2345 |
| 2x120 ^a | 2 | 1.2 | 2.0 | 37.2 | 2933 |
| 2x25 ^b | 2 | 0.9 | 1.8 | 16.4 | 501 |
| 2x35 ^b | 2 | 0.9 | 1.8 | 18.0 | 646 |
| 2x50 ^b | 2 | 1.0 | 1.8 | 22.6 | 1134 |
| 2x70 ^b | 2 | 1.1 | 1.8 | 25.8 | 1542 |
| 2x95 ^b | 2 | 1.1 | 1.9 | 28.7 | 1998 |
| 2x120 ^b | 2 | 1.2 | 2.0 | 32.0 | 2528 |
| 3 Cores | | | | | |
| 3x1.5 ^a | 2 | 0.7 | 1.8 | 9.6 | 132 |
| 3x2.5 ^a | 2 | 0.7 | 1.8 | 10.9 | 179 |

| Conductor | | FGD400 1RV-R | | | |
|--------------------------------|-----------------------|------------------------------------|--------------------------------|--------------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | kg/km |
| 3x4.0 ^a | 2 | 0.7 | 1.8 | 12.1 | 240 |
| 3x6.0 ^a | 2 | 0.7 | 1.8 | 13.3 | 316 |
| 3x10 ^a | 2 | 0.7 | 1.8 | 15.3 | 466 |
| 3x16 ^a | 2 | 0.7 | 1.8 | 17.6 | 674 |
| 3x25 ^a | 2 | 0.9 | 1.8 | 21.3 | 1019 |
| 3x35 ^a | 2 | 0.9 | 1.8 | 23.8 | 1350 |
| 3x50 ^a | 2 | 1.0 | 1.8 | 27.1 | 1784 |
| 3x70 ^a | 2 | 1.1 | 1.9 | 31.6 | 2516 |
| 3x95 ^a | 2 | 1.1 | 2.0 | 35.9 | 3405 |
| 3x120 ^a | 2 | 1.2 | 2.1 | 40.0 | 4267 |
| 3x25 ^b | 2 | 0.9 | 1.8 | 17.4 | 694 |
| 3x35 ^b | 2 | 0.9 | 1.8 | 19.1 | 906 |
| 3x50 ^b | 2 | 1.0 | 1.8 | 24.1 | 1620 |
| 3x70 ^b | 2 | 1.1 | 1.9 | 27.7 | 2233 |
| 3x95 ^b | 2 | 1.1 | 2.0 | 30.8 | 2902 |
| 3x120 ^b | 2 | 1.2 | 2.1 | 34.4 | 3679 |
| 4 Cores | | | | | |
| 4x1.5 ^a | 2 | 0.7 | 1.8 | 10.3 | 159 |
| 4x2.5 ^a | 2 | 0.7 | 1.8 | 11.8 | 219 |
| 4x4.0 ^a | 2 | 0.7 | 1.8 | 13.1 | 298 |
| 4x6.0 ^a | 2 | 0.7 | 1.8 | 14.5 | 397 |
| 4x10 ^a | 2 | 0.7 | 1.8 | 16.8 | 593 |
| 4x16 ^a | 2 | 0.7 | 1.8 | 19.3 | 866 |
| 4x25 ^a | 2 | 0.9 | 1.8 | 23.4 | 1319 |
| 4x35 ^a | 2 | 0.9 | 1.8 | 26.2 | 1756 |
| 4x50 ^a | 2 | 1.0 | 1.8 | 29.9 | 2327 |
| 4x70 ^a | 2 | 1.1 | 2.0 | 35.1 | 3310 |
| 4x95 ^a | 2 | 1.1 | 2.1 | 39.9 | 4485 |
| 4x120 ^a | 2 | 1.2 | 2.3 | 44.7 | 5646 |
| 4x25 ^b | 2 | 0.9 | 1.8 | 19.0 | 893 |
| 4x35 ^b | 2 | 0.9 | 1.8 | 21.0 | 1172 |
| 4x50 ^b | 2 | 1.0 | 1.8 | 26.5 | 2114 |
| 4x70 ^b | 2 | 1.1 | 2.0 | 30.8 | 2938 |
| 4x95 ^b | 2 | 1.1 | 2.1 | 34.3 | 3822 |
| 4x120 ^b | 2 | 1.2 | 2.3 | 38.4 | 4869 |
| 5 Cores | | | | | |
| 5x1.5 ^a | 2 | 0.7 | 1.8 | 11.1 | 187 |
| 5x2.5 ^a | 2 | 0.7 | 1.8 | 12.8 | 260 |
| 5x4.0 ^a | 2 | 0.7 | 1.8 | 14.3 | 357 |
| 5x6.0 ^a | 2 | 0.7 | 1.8 | 15.8 | 479 |
| 5x10 ^a | 2 | 0.7 | 1.8 | 18.3 | 721 |



| Conductor | | FGD400 1RV-R | | | |
|-----------------------------|--------------------|------------------------------|--------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | kg/km |
| 5x16 ^a | 2 | 0.7 | 1.8 | 21.2 | 1059 |
| 5x25 ^a | 2 | 0.9 | 1.8 | 25.8 | 1620 |
| 5x35 ^a | 2 | 0.9 | 1.8 | 28.9 | 2164 |
| 5x50 ^a | 2 | 1.0 | 1.9 | 33.2 | 2890 |
| 5x70 ^a | 2 | 1.1 | 2.1 | 39.0 | 4111 |
| 5x95 ^a | 2 | 1.1 | 2.2 | 44.4 | 5573 |
| 5x120 ^a | 2 | 1.2 | 2.4 | 49.6 | 7014 |

a: Circular or compacted circular stranded conductor (Class 2).

b: Shaped stranded conductor (Class 2).

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671:2008 table 4E2A

| Conductor cross-sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc) | | Reference Method B (enclosed in conduit on a wall or in trunking etc) | | Reference Method C (clipped direct) | | Reference Method E (free air or on a perforated cable tray etc. horizontal or vertical) | |
|--------------------------------|------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------|
| | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. |
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| mm ² | A | A | A | A | A | A | A | A |
| 1.5 | 18.5 | 16.5 | 22 | 19.5 | 24 | 22 | 26 | 23 |
| 2.5 | 25 | 22 | 30 | 26 | 33 | 30 | 36 | 32 |
| 4.0 | 33 | 30 | 40 | 35 | 45 | 40 | 49 | 42 |
| 6.0 | 42 | 38 | 51 | 44 | 58 | 52 | 63 | 54 |
| 10 | 57 | 51 | 69 | 60 | 80 | 71 | 86 | 75 |
| 16 | 76 | 68 | 91 | 80 | 107 | 96 | 115 | 100 |
| 25 | 99 | 89 | 119 | 105 | 138 | 119 | 149 | 127 |
| 35 | 121 | 109 | 146 | 128 | 171 | 147 | 185 | 158 |
| 50 | 145 | 130 | 175 | 154 | 209 | 179 | 225 | 192 |
| 70 | 183 | 164 | 221 | 194 | 269 | 229 | 289 | 246 |
| 95 | 220 | 197 | 265 | 233 | 328 | 278 | 352 | 298 |
| 120 | 253 | 227 | 305 | 268 | 382 | 322 | 410 | 346 |

Voltage Drop (Per Amp Per Meter) according to BS 7671:2008 table 4E2B

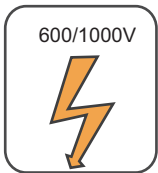
| Nominal Cross Section Area | Two-core cable d.c. | Two-core cable, single-phase a.c. | | | Three- or four-core cable, three-phase a.c. | | |
|----------------------------|---------------------|-----------------------------------|-------|------|---------------------------------------------|-------|------|
| 1 | 2 | 3 | | | Cables touching 4 | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | |
| 1.5 | 31 | 31 | | | 27 | | |
| 2.5 | 19 | 19 | | | 16 | | |
| 4 | 12 | 12 | | | 10 | | |
| 6 | 7.9 | 7.9 | | | 6.8 | | |
| 10 | 4.7 | 4.7 | | | 4.0 | | |
| 16 | 2.9 | 2.9 | | | 2.5 | | |
| | | r | x | z | r | x | z |
| 25 | 1.85 | 1.85 | 0.160 | 1.90 | 1.60 | 0.140 | 1.65 |
| 35 | 1.35 | 1.35 | 0.155 | 1.35 | 1.15 | 0.135 | 1.15 |
| 50 | 0.98 | 0.99 | 0.155 | 1.00 | 0.86 | 0.135 | 0.87 |
| 70 | 0.67 | 0.67 | 0.150 | 0.69 | 0.59 | 0.130 | 0.60 |
| 95 | 0.49 | 0.50 | 0.150 | 0.52 | 0.43 | 0.130 | 0.45 |
| 120 | 0.39 | 0.40 | 0.145 | 0.42 | 0.34 | 0.130 | 0.37 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



Standard

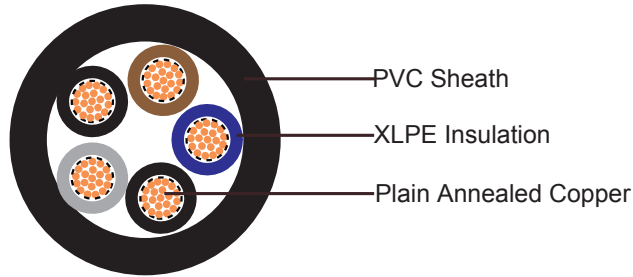
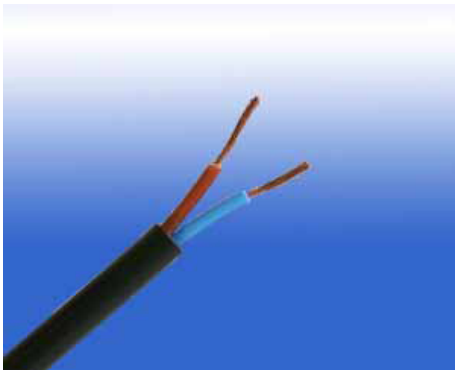


Flame Retardancy
BS EN 60332-1-2



600/1000V XLPE Insulated, PVC Sheathed, Unarmoured Power Cables (2-5 Cores & Multicore)

FGD400 1RV-R (CU/XLPE/PVC 600/1000V Class 2)
VDE Code: N2XY



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design adapted to IEC 60502-1

FIRE PERFORMANCE

| | |
|----------------------------------------------|-------------|
| Flame Retardance (Single Vertical Wire Test) | IEC 60332-1 |
|----------------------------------------------|-------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed copper wire, stranded according to BS EN 60228 class 2.

Insulation: XLPE according to IEC 60502-1.

Inner Covering(Option): Extruded PVC or polymeric compound.

Outer Sheath: Extruded PVC Type ST₁/ST₂ according to IEC 60502-1.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour:

Two-core: Brown, blue

Three-core: Brown, black, grey. Alternatively, green-and-yellow, blue, brown

Four-core Blue, brown, black, grey. Alternatively, green-and-yellow, brown, black, grey

Five-core Green-and-yellow, blue, brown, black, grey

Note: Depending on their intended use, the cables might be subject to the core colour requirements specified in BS 7671 or other standards, or in statutory requirements.

Sheath Colour: Black (other colours can be offered upon request)

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation: 80°C (For ST₁ Sheath); 90°C (For ST₂ Sheath)

Maximum short circuit temperature (5 Seconds): 250°C

Minimum bending radius: 12 x Overall Diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD400 1RV-R | | | |
|-----------------------------|--------------------|------------------------------|--------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | | mm | mm |
| 2 Cores | | | | | |
| 2x1.5 | 2 | 0.7 | 1.8 | 9.2 | 109 |
| 2x2.5 | 2 | 0.7 | 1.8 | 10.0 | 138 |
| 2x4.0 | 2 | 0.7 | 1.8 | 11.0 | 182 |
| 2x6.0 | 2 | 0.7 | 1.8 | 12.0 | 234 |
| 2x10 | 2 | 0.7 | 1.8 | 13.6 | 333 |
| 2x16 | 2 | 0.7 | 1.8 | 15.4 | 468 |
| 2x25 | 2 | 0.9 | 1.8 | 18.4 | 686 |
| 2x35 | 2 | 0.9 | 1.8 | 20.6 | 926 |
| 2x50 | 2 | 1.0 | 1.8 | 23.6 | 1269 |
| 2x70 | 2 | 1.1 | 1.8 | 26.8 | 1699 |
| 2x95 | 2 | 1.1 | 1.9 | 30.2 | 2269 |
| 2x120 | 2 | 1.2 | 2.0 | 33.7 | 2853 |
| 2x150 | 2 | 1.4 | 2.2 | 37.5 | 3539 |
| 2x185 | 2 | 1.6 | 2.3 | 41.6 | 4329 |
| 2x240 | 2 | 1.7 | 2.5 | 46.7 | 5607 |
| 2x300 | 2 | 1.8 | 2.6 | 51.4 | 6892 |
| 2x400 | 2 | 2.0 | 2.9 | 58.9 | 9202 |
| 3 Cores | | | | | |
| 3x1.5 | 2 | 0.7 | 1.8 | 9.6 | 133 |
| 3x2.5 | 2 | 0.7 | 1.8 | 10.5 | 174 |
| 3x4.0 | 2 | 0.7 | 1.8 | 11.6 | 236 |
| 3x6.0 | 2 | 0.7 | 1.8 | 12.6 | 310 |



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| Conductor | | FGD400 1RV-R | | | |
|-----------------------------|--------------------|------------------------------|--------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | | mm | mm |
| 3x10 | 2 | 0.7 | 1.8 | 14.4 | 452 |
| 3x16 | 2 | 0.7 | 1.8 | 16.3 | 648 |
| 3x25 | 2 | 0.9 | 1.8 | 19.5 | 963 |
| 3x35 | 2 | 0.9 | 1.8 | 21.9 | 1315 |
| 3x50 | 2 | 1.0 | 1.8 | 25.1 | 1818 |
| 3x70 | 2 | 1.1 | 1.9 | 28.7 | 2451 |
| 3x95 | 2 | 1.1 | 2.0 | 32.4 | 3287 |
| 3x120 | 2 | 1.2 | 2.1 | 36.1 | 4142 |
| 3x150 | 2 | 1.4 | 2.3 | 40.3 | 5140 |
| 3x185 | 2 | 1.6 | 2.4 | 44.6 | 6298 |
| 3x240 | 2 | 1.7 | 2.6 | 50.2 | 8170 |
| 3x300 | 2 | 1.8 | 2.7 | 55.2 | 10063 |
| 3x400 | 2 | 2.0 | 3.0 | 63.3 | 13451 |
| 3 Cores+1 Earth Conductor | | | | | |
| | | power conductor | earth conductor | | |
| 3x16/10 | 2 | 0.7 | 0.7 | 1.8 | 793 |
| 3x25/16 | 2 | 0.9 | 0.7 | 1.8 | 1070 |
| 3x35/16 | 2 | 0.9 | 0.7 | 1.8 | 1349 |
| 3x50/25 | 2 | 1.0 | 0.9 | 1.8 | 1890 |
| 3x70/35 | 2 | 1.1 | 0.9 | 2.0 | 2660 |
| 3x95/50 | 2 | 1.1 | 1.0 | 2.1 | 3650 |
| 3x120/70 | 2 | 1.2 | 1.1 | 2.3 | 4610 |
| 3x150/70 | 2 | 1.4 | 1.1 | 2.4 | 5450 |
| 3x185/95 | 2 | 1.6 | 1.1 | 2.6 | 6680 |
| 3x240/120 | 2 | 1.7 | 1.2 | 2.8 | 8690 |
| 3x300/150 | 2 | 1.8 | 1.4 | 3.0 | 11170 |
| 3x400/185 | 2 | 1.8 | 1.6 | 3.2 | 11480 |
| 4 Cores | | | | | |
| 4x1.5 | 2 | 0.7 | | 1.8 | 169 |
| 4x2.5 | 2 | 0.7 | | 1.8 | 220 |
| 4x4.0 | 2 | 0.7 | | 1.8 | 297 |
| 4x6.0 | 2 | 0.7 | | 1.8 | 392 |

| Conductor | | FGD400 1RV-R | | | |
|------------------------------------|--------------------|------------------------------|--------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | | mm | mm |
| 4x10 | 2 | 0.7 | 1.8 | 15.7 | 585 |
| 4x16 | 2 | 0.7 | 1.8 | 17.8 | 851 |
| 4x25 | 2 | 0.9 | 1.8 | 21.5 | 1200 |
| 4x35(S) | 2 | 0.9 | 1.8 | 24.1 | 1600 |
| 4x50(S) | 2 | 1.0 | 1.8 | 27.8 | 2200 |
| 4x70(S) | 2 | 1.1 | 2.0 | 32.0 | 3050 |
| 4x95(S) | 2 | 1.1 | 2.1 | 36.1 | 4070 |
| 4x120(S) | 2 | 1.2 | 2.3 | 40.2 | 5915 |
| 4x150(S) | 2 | 1.4 | 2.4 | 44.9 | 6350 |
| 4x185(S) | 2 | 1.6 | 2.6 | 49.8 | 7890 |
| 4x240(S) | 2 | 1.7 | 2.8 | 56.0 | 10400 |
| 4x300(S) | 2 | 1.8 | 3.0 | 61.7 | 12810 |
| 4x400(S) | 2 | 2.0 | 3.2 | 70.7 | 15869 |
| 5 Cores | | | | | |
| 5x1.5 | 2 | 0.7 | 1.8 | 12.1 | 205 |
| 5x2.5 | 2 | 0.7 | 1.8 | 13.1 | 265 |
| 5x4.0 | 2 | 0.7 | 1.8 | 14.3 | 360 |
| 5x6.0 | 2 | 0.7 | 1.8 | 15.2 | 478 |
| 5x10 | 2 | 0.7 | 1.8 | 15.6 | 720 |
| 5x16 | 2 | 0.7 | 1.8 | 16.1 | 1050 |
| 5x25 | 2 | 0.9 | 1.8 | 18.6 | 1485 |
| 5x35 | 2 | 0.9 | 1.8 | 21.3 | 1940 |
| 5x50 | 2 | 1.0 | 2.1 | 25.9 | 2667 |
| 5x70 | 2 | 1.1 | 2.2 | 28.8 | 3698 |
| 5x95 | 2 | 1.1 | 2.4 | 29.4 | 4934 |
| 5x120 | 2 | 1.2 | 2.5 | 42.6 | 7171 |
| 5x150 | 2 | 1.4 | 2.7 | 47.7 | 7699 |
| 5x185 | 2 | 1.6 | 2.9 | 52.8 | 9566 |
| 5x240 | 2 | 1.7 | 3.1 | 58.7 | 12610 |
| (S) - Sectoral Stranded Conductors | | | | | |
| 7 Cores | | | | | |
| 7x1.5 | 2 | 0.7 | 1.8 | 12.4 | 225 |



| Conductor | | FGD400 1RV-R | | | |
|-----------------------------|--------------------|------------------------------|--------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | | mm | mm |
| 7x2.5 | 2 | 0.7 | 1.8 | 13.8 | 303 |
| 7x4.0 | 2 | 0.7 | 1.8 | 15.5 | 422 |
| 10 Cores | | | | | |
| 10x1.5 | 2 | 0.7 | 1.8 | 15.6 | 325 |
| 10x2.5 | 2 | 0.7 | 1.8 | 17.5 | 426 |
| 10x4.0 | 2 | 0.7 | 1.8 | 19.7 | 597 |
| 12 Cores | | | | | |
| 12x1.5 | 2 | 0.7 | 1.8 | 16.2 | 370 |
| 12x2.5 | 2 | 0.7 | 1.8 | 18.1 | 489 |
| 12x4.0 | 2 | 0.7 | 1.8 | 20.3 | 690 |
| 19 Cores | | | | | |
| 19x1.5 | 2 | 0.7 | 1.8 | 19.0 | 516 |
| 19x2.5 | 2 | 0.7 | 1.8 | 21.3 | 725 |
| 19x4.0 | 2 | 0.7 | 1.8 | 24.0 | 1037 |
| 27 Cores | | | | | |
| 27x1.5 | 2 | 0.7 | 1.8 | 22.7 | 712 |
| 27x2.5 | 2 | 0.7 | 1.8 | 25.5 | 1004 |
| 27x4.0 | 2 | 0.7 | 1.8 | 28.8 | 1445 |
| 37 Cores | | | | | |
| 37x1.5 | 2 | 0.7 | 1.8 | 25.5 | 941 |
| 37x2.5 | 2 | 0.7 | 1.8 | 28.7 | 1334 |
| 37x4.0 | 2 | 0.7 | 1.8 | 32.5 | 1932 |
| 48 Cores | | | | | |
| 48x1.5 | 2 | 0.7 | 1.8 | 29.0 | 1186 |
| 48x2.5 | 2 | 0.7 | 1.9 | 32.9 | 1706 |
| 48x4.0 | 2 | 0.7 | 1.9 | 37.3 | 2479 |

Note : Other conductor sizes & core configurations are available upon request.

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671:2008 table 4E2A

| Conductor cross-sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc) | | Reference Method B (enclosed in conduit on a wall or in trunking etc) | | Reference Method C (clipped direct) | | Reference Method E (free air or on a perforated cable tray etc. horizontal or vertical) | |
|--------------------------------|---------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------|
| | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| mm ² | A | A | A | A | A | A | A | A |
| 1.5 | 18.5 | 16.5 | 22 | 19.5 | 24 | 22 | 26 | 23 |
| 2.5 | 25 | 22 | 30 | 26 | 33 | 30 | 36 | 32 |
| 4 | 33 | 30 | 40 | 35 | 45 | 40 | 49 | 42 |
| 6 | 42 | 38 | 51 | 44 | 58 | 52 | 63 | 54 |
| 10 | 57 | 51 | 69 | 60 | 80 | 71 | 86 | 75 |
| 16 | 76 | 68 | 91 | 80 | 107 | 96 | 115 | 100 |
| 25 | 99 | 89 | 119 | 105 | 138 | 119 | 149 | 127 |
| 35 | 121 | 109 | 146 | 128 | 171 | 147 | 185 | 158 |
| 50 | 145 | 130 | 175 | 154 | 209 | 179 | 225 | 192 |
| 70 | 183 | 164 | 221 | 194 | 269 | 229 | 289 | 246 |
| 95 | 220 | 197 | 265 | 233 | 328 | 278 | 352 | 298 |
| 120 | 253 | 227 | 305 | 268 | 382 | 322 | 410 | 346 |
| 150 | 290 | 259 | 334 | 300 | 441 | 371 | 473 | 399 |
| 185 | 329 | 295 | 384 | 340 | 506 | 424 | 542 | 456 |
| 240 | 386 | 346 | 459 | 398 | 599 | 500 | 641 | 538 |
| 300 | 442 | 396 | 532 | 455 | 693 | 576 | 741 | 621 |
| 400 | - | - | 625 | 536 | 803 | 667 | 865 | 741 |

Voltage Drop (Per Amp Per Meter) according to BS 7671:2008 table 4E2B

| Nominal Cross Section Area | Two-core cable d.c. | Two-core cable, single-phase a.c. | Three- or four-core cable, three-phase a.c. |
|----------------------------|---------------------|-----------------------------------|---------------------------------------------|
| 1 | 2 | 3 | Cables touching 4 |
| mm ² | mV/A/m | mV/A/m | mV/A/m |
| 1.5 | 31 | 31 | 27 |
| 2.5 | 19 | 19 | 16 |
| 4 | 12 | 12 | 10 |
| 6 | 7.9 | 7.9 | 6.8 |
| 10 | 4.7 | 4.7 | 4.0 |



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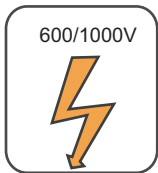
| Nominal Cross Section Area | Two-core cable d.c. | Two-core cable, single-phase a.c. | | | Three- or four-core cable, three-phase a.c. | | |
|----------------------------|---------------------|-----------------------------------|-------|-------|---------------------------------------------|-------|-------|
| 1 | 2 | 3 | | | Cables touching 4 | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | |
| 16 | 2.9 | 2.9 | | | 2.5 | | |
| | | r | x | z | r | x | z |
| 25 | 1.85 | 1.85 | 0.160 | 1.90 | 1.60 | 0.140 | 1.65 |
| 35 | 1.35 | 1.35 | 0.155 | 1.35 | 1.15 | 0.135 | 1.15 |
| 50 | 0.98 | 0.99 | 0.155 | 1.00 | 0.86 | 0.135 | 0.87 |
| 70 | 0.67 | 0.67 | 0.150 | 0.69 | 0.59 | 0.130 | 0.60 |
| 95 | 0.49 | 0.50 | 0.150 | 0.52 | 0.43 | 0.130 | 0.45 |
| 120 | 0.39 | 0.40 | 0.145 | 0.42 | 0.34 | 0.130 | 0.37 |
| 150 | 0.31 | 0.32 | 0.145 | 0.35 | 0.28 | 0.125 | 0.30 |
| 185 | 0.25 | 0.26 | 0.145 | 0.29 | 0.22 | 0.125 | 0.26 |
| 240 | 0.195 | 0.200 | 0.140 | 0.24 | 0.175 | 0.125 | 0.21 |
| 300 | 0.155 | 0.160 | 0.140 | 0.21 | 0.140 | 0.120 | 0.185 |
| 400 | 0.120 | 0.130 | 0.140 | 0.190 | 0.115 | 0.120 | 0.165 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



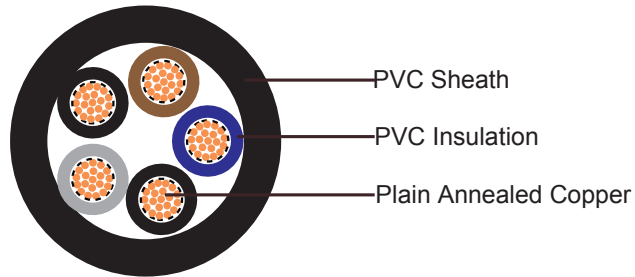
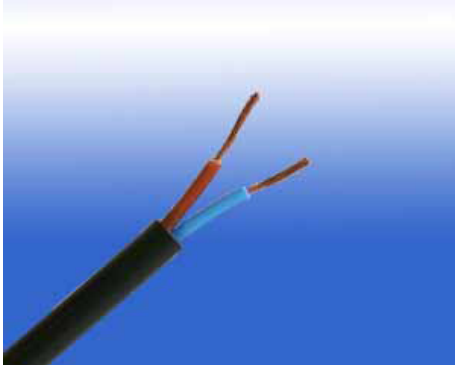
Standard



Flame Retardancy
IEC 60332-1

600/1000V PVC Insulated, PVC Sheathed, Unarmoured Power Cables (2-5 Cores & Multicore)

FGD400 1VV-R (CU/PVC/PVC 600/1000V Class 2)
VDE Code: NYY



APPLICATION

The cables are mainly use in fixed installations in industrial areas, buildings and similar applications but not for burial in the ground, either directly or in ducts.

STANDARDS

Basic design to IEC 60502-1

FIRE PERFORMANCE

| | |
|----------------------------------------------|-------------|
| Flame Retardance (Single Vertical Wire Test) | IEC 60332-1 |
|----------------------------------------------|-------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed copper wire, stranded according to BS EN 60228 class 2.

Insulation: PVC/A according to IEC 60502-1.

Inner Covering(Optional): Extruded PVC or polymeric compound.

Outer Sheath: Extruded PVC Type ST₁/ST₂ according to IEC 60502-1.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour:

Two-core: Brown, blue



Three-core: Brown, black, grey. Alternatively, green-and-yellow, blue, brown

Four-core Blue, brown, black, grey. Alternatively, green-and-yellow, brown, black, grey

Five-core Green-and-yellow, blue, brown, black, grey

Note: Depending on their intended use, the cables might be subject to the core colour requirements specified in BS 7671 or other standards, or in statutory requirements.

Sheath Colour: Black (other colours can be offered upon request)

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (PVC): 70°C

Maximum short circuit temperature (5 Seconds):

Conductor cross-section ≤300 mm²:160°C

Conductor cross-section >300 mm²:140°C

Minimum bending radius: 12 x Overall Diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD400 1VV-R | | | |
|--------------------------------|-----------------------|------------------------------------|--------------------------------|--------------------------------|-------------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | kg/km |
| 2 Cores | | | | | |
| 2x1.5 | 2 | 0.8 | 1.8 | 9.6 | 120 |
| 2x2.5 | 2 | 0.8 | 1.8 | 10.4 | 151 |
| 2x4.0 | 2 | 1.0 | 1.8 | 12.2 | 212 |
| 2x6.0 | 2 | 1.0 | 1.8 | 13.2 | 266 |
| 2x10 | 2 | 1.0 | 1.8 | 14.8 | 370 |
| 2x16 | 2 | 1.0 | 1.8 | 16.6 | 510 |
| 2x25 | 2 | 1.2 | 1.8 | 19.6 | 740 |
| 2x35 | 2 | 1.2 | 1.8 | 21.8 | 986 |
| 2x50 | 2 | 1.4 | 1.8 | 25.2 | 1355 |
| 2x70 | 2 | 1.4 | 1.9 | 28.1 | 1798 |
| 2x95 | 2 | 1.6 | 2.0 | 32.4 | 2419 |
| 2x120 | 2 | 1.6 | 2.1 | 35.4 | 3003 |
| 2x150 | 2 | 1.8 | 2.2 | 39.2 | 3696 |
| 2x185 | 2 | 2 | 2.4 | 43.3 | 4536 |
| 2x240 | 2 | 2.2 | 2.5 | 48.9 | 5849 |
| 2x300 | 2 | 2.4 | 2.7 | 54.0 | 7223 |
| 2x400 | 2 | 2.6 | 2.9 | 61.5 | 9566 |

| Conductor | | FGD400 1VV-R | | | | |
|-----------------------------|--------------------|------------------------------|--------------------------|--------------------------|----------------|------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight | |
| mm ² | | mm | mm | mm | kg/km | |
| 3 Cores | | | | | | |
| 3x1.5 | 2 | 0.8 | 1.8 | 10.1 | 149 | |
| 3x2.5 | 2 | 0.8 | 1.8 | 10.9 | 192 | |
| 3x4.0 | 2 | 1.0 | 1.8 | 12.9 | 277 | |
| 3x6.0 | 2 | 1.0 | 1.8 | 13.9 | 354 | |
| 3x10 | 2 | 1.0 | 1.8 | 15.7 | 503 | |
| 3x16 | 2 | 1.0 | 1.8 | 17.6 | 707 | |
| 3x25 | 2 | 1.2 | 1.8 | 20.8 | 1040 | |
| 3x35 | 2 | 1.2 | 1.8 | 23.2 | 1401 | |
| 3x50 | 2 | 1.4 | 1.8 | 26.9 | 1942 | |
| 3x70 | 2 | 1.4 | 1.9 | 30.1 | 2589 | |
| 3x95 | 2 | 1.6 | 2.1 | 34.7 | 3514 | |
| 3x120 | 2 | 1.6 | 2.2 | 38 | 4372 | |
| 3x150 | 2 | 1.8 | 2.3 | 42.1 | 5390 | |
| 3x185 | 2 | 2.0 | 2.5 | 46.5 | 6615 | |
| 3x240 | 2 | 2.2 | 2.7 | 52.5 | 8576 | |
| 3x300 | 2 | 2.4 | 2.8 | 58 | 10564 | |
| 3x400 | 2 | 2.6 | 3.1 | 66.1 | 14049 | |
| 3 Cores+1 Earth Conductor | | | | | | |
| | | power conductor | earth conductor | | | |
| 3x 16/10 | 2 | 1.0 | 1.0 | 1.8 | 19.0 | 764 |
| 3x 25/16 | 2 | 1.2 | 1.0 | 1.8 | 22.6 | 1137 |
| 3x 35/16 | 2 | 1.2 | 1.0 | 1.8 | 25.3 | 1494 |
| 3x 50/25 | 2 | 1.4 | 1.2 | 1.9 | 29.6 | 2120 |
| 3x 70/35 | 2 | 1.4 | 1.2 | 2.0 | 33.2 | 2862 |
| 3x 95/50 | 2 | 1.6 | 1.4 | 2.2 | 38.4 | 3917 |
| 3x120/70 | 2 | 1.6 | 1.4 | 2.3 | 42.0 | 4973 |



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| Conductor | | FGD400 1VV-R | | | | |
|-----------------------------|--------------------|------------------------------|-----|--------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | | mm | mm | kg/km |
| 3x150/70 | 2 | 1.4 | 1.2 | 2.5 | 46.6 | 5861 |
| 3x185/95 | 2 | 1.6 | 1.4 | 2.6 | 51.6 | 7321 |
| 3x240/120 | 2 | 1.6 | 1.4 | 2.9 | 58.3 | 9433 |
| 3x300/150 | 2 | 1.8 | 1.6 | 3.1 | 64.5 | 11714 |
| 3x400/185 | 2 | 2.0 | 1.6 | 3.3 | 73.5 | 15404 |
| 4 Cores | | | | | | |
| 4x1.5 | 2 | 0.8 | | 1.8 | 10.8 | 180 |
| 4x2.5 | 2 | 0.8 | | 1.8 | 11.8 | 236 |
| 4x4.0 | 2 | 1 | | 1.8 | 14 | 346 |
| 4x6.0 | 2 | 1 | | 1.8 | 15.2 | 447 |
| 4x10 | 2 | 1 | | 1.8 | 17.1 | 642 |
| 4x16 | 2 | 1 | | 1.8 | 19.3 | 910 |
| 4x25 | 2 | 1.2 | | 1.8 | 22.9 | 1347 |
| 4x35 | 2 | 1.2 | | 1.8 | 25.6 | 1824 |
| 4x50 | 2 | 1.4 | | 1.9 | 29.9 | 2553 |
| 4x70 | 2 | 1.4 | | 2 | 33.5 | 3409 |
| 4x95 | 2 | 1.6 | | 2.2 | 38.7 | 4628 |
| 4x120 | 2 | 1.6 | | 2.3 | 42.3 | 5763 |
| 4x150 | 2 | 1.8 | | 2.5 | 46.9 | 7132 |
| 4x185 | 2 | 2 | | 2.6 | 51.9 | 8723 |
| 4x240 | 2 | 2.2 | | 2.9 | 58.6 | 11344 |
| 4x300 | 2 | 2.4 | | 3.1 | 64.8 | 14012 |
| 4x400 | 2 | 2.6 | | 3.3 | 73.8 | 18590 |
| Multicore | | | | | | |
| 5x1.5 | 2 | 0.8 | | 1.8 | 11.7 | 213 |
| 7x1.5 | 2 | 0.8 | | 1.8 | 12.6 | 270 |
| 10x1.5 | 2 | 0.8 | | 1.8 | 15.6 | 371 |
| 12x1.5 | 2 | 0.8 | | 1.8 | 16.1 | 424 |

| Conductor | | FGD400 1VV-R | | | |
|--------------------------------|-----------------------|------------------------------------|--------------------------------|--------------------------------|-------------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | kg/km |
| 14x1.5 | 2 | 0.8 | 1.8 | 16.8 | 480 |
| 19x1.5 | 2 | 0.8 | 1.8 | 18.6 | 619 |
| 21x1.5 | 2 | 0.8 | 1.8 | 19.5 | 676 |
| 24x1.5 | 2 | 0.8 | 1.8 | 21.6 | 769 |
| 30x1.5 | 2 | 0.8 | 1.8 | 22.8 | 927 |
| 40x1.5 | 2 | 0.8 | 1.8 | 27.7 | 1196 |
| 48x1.5 | 2 | 0.8 | 1.9 | 28.2 | 1430 |
| 61x1.5 | 2 | 0.8 | 1.9 | 30.9 | 1773 |
| 5x2.5 | 2 | 0.8 | 1.8 | 12.8 | 281 |
| 7x2.5 | 2 | 0.8 | 1.8 | 13.8 | 363 |
| 10x2.5 | 2 | 0.8 | 1.8 | 17.2 | 503 |
| 12x2.5 | 2 | 0.8 | 1.8 | 17.7 | 580 |
| 14x2.5 | 2 | 0.8 | 1.8 | 18.6 | 660 |
| 19x2.5 | 2 | 0.8 | 1.8 | 20.6 | 860 |
| 21x2.5 | 2 | 0.8 | 1.8 | 21.6 | 941 |
| 24x2.5 | 2 | 0.8 | 1.8 | 24 | 1072 |
| 30x2.5 | 2 | 0.8 | 1.8 | 25.4 | 1302 |
| 40x2.5 | 2 | 0.8 | 2 | 31.1 | 1720 |
| 48x2.5 | 2 | 0.8 | 2 | 31.7 | 2039 |
| 61x2.5 | 2 | 0.8 | 2.1 | 34.7 | 2557 |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 70°C

Ambient Temperature : 30°C



Current-Carrying Capacities (Amp) according to BS 7671 table 4D2A

| Conductor cross-sectional area | Reference Method A (enclosed in conduit in thermally insulating wall etc) | | Reference Method B (enclosed in conduit on a wall or in trunking etc) | | Reference Method C (clipped direct) | | Reference Method G (in free air) Spaced by one cable diameter | |
|--------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------|
| | 1 two-core cables*, single-phase a.c. or d.c. | 1 three-core cable* or 1 four-core cable, three-phase a.c. | 1 two-core cables*, single-phase a.c. or d.c. | 1 three-core cable* or 1 four-core cable, three-phase a.c. | 1 two-core cables*, single-phase a.c. or d.c. | 1 three-core cable* or 1 four-core cable, three-phase a.c. | 1 two-core cables*, single-phase a.c. or d.c. | 1 three-core cable* or 1 four-core cable, three-phase a.c. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| mm ² | A | A | A | A | A | A | A | A |
| 1.0 | 11 | 10 | 13 | 11.5 | 15 | 13.5 | 17 | 14.5 |
| 1.5 | 14 | 13 | 16.5 | 15 | 19.5 | 17.5 | 22 | 18.5 |
| 2.5 | 18.5 | 17.5 | 23 | 20 | 27 | 24 | 30 | 25 |
| 4.0 | 25 | 23 | 30 | 27 | 36 | 32 | 40 | 34 |
| 6.0 | 32 | 29 | 38 | 34 | 46 | 41 | 51 | 43 |
| 10 | 43 | 39 | 52 | 46 | 63 | 57 | 70 | 60 |
| 16 | 57 | 52 | 69 | 62 | 85 | 76 | 94 | 80 |
| 25 | 75 | 68 | 90 | 80 | 112 | 96 | 119 | 101 |
| 35 | 92 | 83 | 111 | 99 | 138 | 119 | 148 | 126 |
| 50 | 110 | 99 | 133 | 118 | 168 | 144 | 180 | 153 |
| 70 | 139 | 125 | 168 | 149 | 213 | 184 | 232 | 196 |
| 95 | 167 | 150 | 201 | 179 | 258 | 223 | 282 | 238 |
| 120 | 192 | 172 | 232 | 206 | 299 | 259 | 328 | 276 |
| 150 | 219 | 196 | 258 | 225 | 344 | 299 | 379 | 319 |
| 185 | 248 | 223 | 294 | 255 | 392 | 341 | 434 | 364 |
| 240 | 291 | 261 | 344 | 297 | 461 | 403 | 514 | 430 |
| 300 | 334 | 298 | 394 | 339 | 530 | 464 | 593 | 497 |
| 400 | - | - | 470 | 402 | 634 | 557 | 715 | 597 |

* with or without a protective conductor

Voltage Drop (Per Amp Per Meter) according to BS 7671 table 4D2B

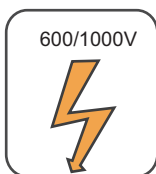
| Nominal Cross Section Area | Two-core cable d.c. | Two-core cable, single-phase a.c. | | | Three- or four-core cable, three-phase a.c. | | |
|----------------------------|---------------------|-----------------------------------|-------|-------|---------------------------------------------|-------|-------|
| 1 | 2 | 3 | | | 4 | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | |
| 1.0 | 44 | 44 | | | 38 | | |
| 1.5 | 29 | 29 | | | 25 | | |
| 2.5 | 18 | 18 | | | 15 | | |
| 4.0 | 11 | 11 | | | 9.5 | | |
| 6.0 | 7.3 | 7.3 | | | 6.4 | | |
| 10 | 4.4 | 4.4 | | | 3.8 | | |
| 16 | 2.8 | 2.8 | | | 2.4 | | |
| | | r | x | z | r | x | z |
| 25 | 1.75 | 1.75 | 0.170 | 1.75 | 1.50 | 0.145 | 1.50 |
| 35 | 1.25 | 1.25 | 0.165 | 1.25 | 1.10 | 0.145 | 1.10 |
| 50 | 0.93 | 0.93 | 0.165 | 0.94 | 0.80 | 0.140 | 0.81 |
| 70 | 0.63 | 0.63 | 0.160 | 0.65 | 0.55 | 0.140 | 0.57 |
| 95 | 0.46 | 0.47 | 0.155 | 0.50 | 0.41 | 0.135 | 0.43 |
| 120 | 0.36 | 0.38 | 0.155 | 0.41 | 0.33 | 0.135 | 0.35 |
| 150 | 0.29 | 0.30 | 0.155 | 0.34 | 0.26 | 0.130 | 0.29 |
| 185 | 0.23 | 0.25 | 0.150 | 0.29 | 0.21 | 0.130 | 0.25 |
| 240 | 0.180 | 0.190 | 0.150 | 0.24 | 0.165 | 0.130 | 0.21 |
| 300 | 0.145 | 0.155 | 0.145 | 0.21 | 0.135 | 0.130 | 0.185 |
| 400 | 0.105 | 0.115 | 0.145 | 0.185 | 0.100 | 0.125 | 0.160 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



Standard

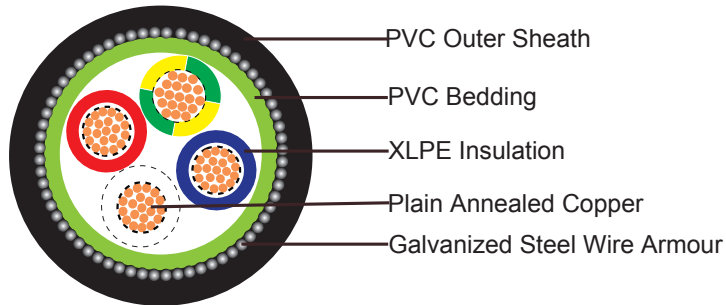


Flame Retardancy
IEC 60332-1



600/1000V XLPE Insulated, PVC Sheathed, Armoured Power Cables (2-5 Cores & Multicore)

FGD400 1RVMV-R (CU/XLPE/PVC/SWA/PVC 600/1000V Class 2)
BS Code:6942X-6945X



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS 5467

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 60332-1-2 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed copper wire, stranded according to BS EN 60228 class 2.

Insulation: Extruded XLPE GP 8 according to BS 7655-1.3.

Bedding: PVC.

Armouring: Galvanized steel wire

Outer Sheath: PVC Type 9 according to BS 7655-4.2.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour:

Two-core: Brown, blue

Three-core: Brown, black, grey
 Four-core: Blue, brown, black, grey
 Five-core: Green-and-yellow, blue, brown, black, grey
Sheath Colour: Black (other colours upon request)

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (XLPE): 90°C

Maximum short circuit temperature (5 Seconds): 250°C

Minimum bending radius:

Circular copper conductors: 6 x Overall Diameter

Shaped copper conductors: 8 x Overall Diameter

CONSTRUCTION PARAMETERS

| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Bedding Thickness | Nominal Armor Wire Diameter | Nominal Sheath Thickness | Approx. Overall Diameter | Approx. Weight |
|-----------------------------|--------------------|------------------------------|---------------------------|-----------------------------|--------------------------|--------------------------|----------------|
| No./mm ² | | mm | mm | mm | mm | mm | kg/km |
| 2 Cores | | | | | | | |
| 2x1.5 ^a | 2 | 0.6 | 0.8 | 0.9 | 1.3 | 12.1 | 320 |
| 2x2.5 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.4 | 13.6 | 365 |
| 2x4.0 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.4 | 14.7 | 440 |
| 2x6.0 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.4 | 15.9 | 470 |
| 2x10 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.5 | 18.0 | 800 |
| 2x16 ^a | 2 | 0.7 | 0.8 | 1.25 | 1.5 | 20.4 | 900 |
| 2x25 ^b | 2 | 0.9 | 0.8 | 1.25 | 1.6 | 20.4 | 1240 |
| 2x25 ^a | 2 | 0.9 | 0.8 | 1.25 | 1.6 | 24.1 | 1240 |
| 2x35 ^b | 2 | 0.9 | 1.0 | 1.6 | 1.7 | 23.3 | 1710 |
| 2x35 ^a | 2 | 0.9 | 1.0 | 1.6 | 1.7 | 27.7 | 1710 |
| 2x50 ^b | 2 | 1.0 | 1.0 | 1.6 | 1.8 | 25.8 | 1800 |
| 2x70 ^b | 2 | 1.1 | 1.0 | 1.6 | 1.9 | 29.0 | 2320 |
| 2x95 ^b | 2 | 1.1 | 1.2 | 2.0 | 2.0 | 33.1 | 3150 |
| 2x120 ^b | 2 | 1.2 | 1.2 | 2.0 | 2.1 | 36.1 | 3880 |
| 2x150 ^b | 2 | 1.4 | 1.2 | 2.0 | 2.2 | 39.3 | 4820 |
| 2x185 ^b | 2 | 1.6 | 1.4 | 2.5 | 2.4 | 44.7 | 5920 |
| 2x240 ^b | 2 | 1.7 | 1.4 | 2.5 | 2.5 | 49.0 | 7300 |
| 2x300 ^b | 2 | 1.8 | 1.6 | 2.5 | 2.6 | 53.5 | 8770 |
| 2x400 ^b | 2 | 2 | 1.6 | 2.5 | 2.8 | 59.0 | 10905 |
| 3 Cores | | | | | | | |
| 3x1.5 ^a | 2 | 0.6 | 0.8 | 0.9 | 1.3 | 12.6 | 340 |



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| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Bedding Thickness | Nominal Armor Wire Diameter | Nominal Sheath Thickness | Approx. Overall Diameter | Approx. Weight |
|--------------------------------------|-----------------------|------------------------------------|---------------------------------|-----------------------------------|--------------------------------|--------------------------------|-------------------|
| No./mm ² | | mm | mm | mm | mm | mm | kg/km |
| 3x2.5 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.4 | 14.1 | 408 |
| 3x4.0 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.4 | 15.3 | 498 |
| 3x6.0 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.4 | 16.6 | 600 |
| 3x10 ^a | 2 | 0.7 | 0.8 | 1.25 | 1.5 | 19.5 | 915 |
| 3x16 ^a | 2 | 0.7 | 0.8 | 1.25 | 1.6 | 21.6 | 1130 |
| 3x25 ^a | 2 | 0.9 | 1.0 | 1.6 | 1.7 | 26.7 | 1710 |
| 3x25 ^b | 2 | 0.9 | 1.0 | 1.6 | 1.7 | 23.6 | 1710 |
| 3x35 ^a | 2 | 0.9 | 1.0 | 1.6 | 1.8 | 29.4 | 2100 |
| 3x35 ^b | 2 | 0.9 | 1.0 | 1.6 | 1.8 | 25.7 | 2100 |
| 3x50 ^b | 2 | 1.0 | 1.0 | 1.6 | 1.8 | 28.5 | 2450 |
| 3x70 ^b | 2 | 1.1 | 1.0 | 1.6 | 1.9 | 32.2 | 3120 |
| 3x95 ^b | 2 | 1.1 | 1.2 | 2.0 | 2.1 | 37.0 | 4310 |
| 3x120 ^b | 2 | 1.2 | 1.2 | 2.0 | 2.2 | 40.4 | 5160 |
| 3x150 ^b | 2 | 1.4 | 1.4 | 2.5 | 2.3 | 45.5 | 7160 |
| 3x185 ^b | 2 | 1.6 | 1.4 | 2.5 | 2.4 | 49.8 | 8600 |
| 3x240 ^b | 2 | 1.7 | 1.4 | 2.5 | 2.6 | 55.1 | 10755 |
| 3x300 ^b | 2 | 1.8 | 1.6 | 2.5 | 2.7 | 60.2 | 13080 |
| 3x400 ^b | 2 | 2 | 1.6 | 2.5 | 2.9 | 66.6 | 15810 |
| 4 Cores | | | | | | | |
| 4x1.5 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.3 | 13.3 | 390 |
| 4x2.5 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.4 | 15.0 | 470 |
| 4x4.0 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.4 | 16.4 | 580 |
| 4x6.0 ^a | 2 | 0.7 | 0.8 | 1.25 | 1.5 | 18.7 | 805 |
| 4x10 ^a | 2 | 0.7 | 0.8 | 1.25 | 1.5 | 21.1 | 1090 |
| 4x16 ^a | 2 | 0.7 | 0.8 | 1.25 | 1.6 | 23.4 | 1320 |
| 4x25 ^a | 2 | 0.9 | 1.0 | 1.6 | 1.7 | 28.9 | 1840 |
| 4x25 ^b | 2 | 0.9 | 1.0 | 1.6 | 1.7 | 26.1 | 1840 |
| 4x35 ^a | 2 | 0.9 | 1.0 | 1.6 | 1.8 | 31.9 | 2310 |
| 4x35 ^b | 2 | 0.9 | 1.0 | 1.6 | 1.8 | 28.6 | 2310 |
| 4x50 ^b | 2 | 1.0 | 1.0 | 1.6 | 1.9 | 32.0 | 2970 |

| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Bedding Thickness | Nominal Armor Wire Diameter | Nominal Sheath Thickness | Approx. Overall Diameter | Approx. Weight |
|--------------------------------------|-----------------------|------------------------------------|---------------------------------|-----------------------------------|--------------------------------|--------------------------------|-------------------|
| No./mm ² | | mm | mm | mm | mm | mm | kg/km |
| 4x70 ^b | 2 | 1.1 | 1.0 | 2.0 | 2.1 | 37.7 | 4240 |
| 4x95 ^b | 2 | 1.1 | 1.2 | 2.0 | 2.2 | 41.7 | 5400 |
| 4x120 ^b | 2 | 1.2 | 1.4 | 2.5 | 2.3 | 47.1 | 7000 |
| 4x150 ^b | 2 | 1.4 | 1.4 | 2.5 | 2.4 | 51.4 | 8350 |
| 4x185 ^b | 2 | 1.6 | 1.4 | 2.5 | 2.6 | 56.6 | 10130 |
| 4x240 ^b | 2 | 1.7 | 1.6 | 2.5 | 2.7 | 63.0 | 12840 |
| 4x300 ^b | 2 | 1.8 | 1.6 | 2.5 | 2.9 | 68.8 | 15530 |
| 4x400 ^b | 2 | 2 | 1.8 | 3.15 | 3.2 | 78.1 | 19950 |
| 5 Cores | | | | | | | |
| 5x1.5 ^a | 2 | 0.6 | 0.8 | 0.9 | 1.4 | 14.3 | 430 |
| 5x2.5 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.4 | 16.1 | 545 |
| 5x4.0 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.5 | 17.8 | 680 |
| 5x6.0 ^a | 2 | 0.7 | 0.8 | 1.25 | 1.5 | 20 | 840 |
| 5x10 ^a | 2 | 0.7 | 0.8 | 1.25 | 1.6 | 22.9 | 1105 |
| 5x16 ^a | 2 | 0.7 | 1.0 | 1.6 | 1.7 | 26.6 | 1450 |
| 5x25 ^a | 2 | 0.9 | 1.0 | 1.6 | 1.8 | 31.5 | 2245 |
| 5x35 ^a | 2 | 0.9 | 1.0 | 1.6 | 1.9 | 34.8 | 2840 |
| 5x50 ^a | 2 | 1.0 | 1.2 | 2 | 2 | 40.4 | 3895 |
| 5x70 ^a | 2 | 1.1 | 1.2 | 2 | 2.2 | 46.3 | 5145 |

^a Circular or compacted circular stranded conductors (class 2).

^b Shaped stranded conductor (class 2).

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C



Current-Carrying Capacities (Amp) according to BS7671:2008 table 4E4A

| Conductor cross-sectional area | Reference Method C (clipped direct) | | Reference Method E (in free air or on a perforated cable tray, horizontal or vertical) | | Reference Method D (direct in ground or in ducting in ground, in or around buildings) | |
|--------------------------------|----------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------|
| | 1 two-core cable*, single-phase a.c. or d.c. | 1 three-or four core cable*, three-phase a.c. | 1 two-core cable*, single-phase a.c. or d.c. | 1 three-or four core cable*, three-phase a.c. | 1 two-core cable*, single-phase a.c. or d.c. | 1 three-or four core cable*, three-phase a.c. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| mm ² | A | A | A | A | A | A |
| 1.5 | 27 | 23 | 29 | 25 | 25 | 21 |
| 2.5 | 36 | 31 | 39 | 33 | 33 | 28 |
| 4.0 | 49 | 42 | 52 | 44 | 43 | 36 |
| 6.0 | 62 | 53 | 66 | 56 | 53 | 44 |
| 10 | 85 | 73 | 90 | 78 | 71 | 58 |
| 16 | 110 | 94 | 115 | 99 | 91 | 75 |
| 25 | 146 | 124 | 152 | 131 | 116 | 96 |
| 35 | 180 | 154 | 188 | 162 | 139 | 115 |
| 50 | 219 | 187 | 228 | 197 | 164 | 135 |
| 70 | 279 | 238 | 291 | 251 | 203 | 167 |
| 95 | 338 | 289 | 354 | 304 | 239 | 197 |
| 120 | 392 | 335 | 410 | 353 | 271 | 223 |
| 150 | 451 | 386 | 472 | 406 | 306 | 251 |
| 185 | 515 | 441 | 539 | 463 | 343 | 281 |
| 240 | 607 | 520 | 636 | 546 | 395 | 324 |
| 300 | 698 | 599 | 732 | 628 | 446 | 365 |
| 400 | 787 | 673 | 847 | 728 | - | - |

Voltage Drop (Per Amp Per Meter) according to BS7671:2008 table 4E4B

| Conductor cross-sectional area | Two-core cables, d.c. | Two-core cable, single-phase a.c. | Three-or four core cable, three-phase a.c. |
|--------------------------------|-----------------------|-----------------------------------|--------------------------------------------|
| 1 | 2 | 3 | 4 |
| mm ² | mV/A/m | mV/A/m | mV/A/m |
| 1.5 | 31 | 31 | 27 |
| 2.5 | 19 | 19 | 16 |
| 4.0 | 12 | 12 | 10 |
| 6.0 | 7.9 | 7.9 | 6.8 |
| 10 | 4.7 | 4.7 | 4.0 |
| 16 | 2.9 | 2.9 | 2.5 |

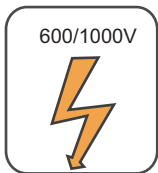
| Conductor cross-sectional area | Two-core cables, d.c. | Two-core cable, single-phase a.c. | | | Three-or four core cable, three-phase a.c. | | |
|--------------------------------|-----------------------|-----------------------------------|-------|-------|--------------------------------------------|-------|-------|
| 1 | 2 | 3 | | | 4 | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | |
| | | r | x | z | r | x | z |
| 25 | 1.85 | 1.85 | 0.160 | 1.90 | 1.60 | 0.140 | 1.65 |
| 35 | 1.35 | 1.35 | 0.155 | 1.35 | 1.15 | 0.135 | 1.15 |
| 50 | 0.98 | 0.99 | 0.155 | 1.00 | 0.86 | 0.135 | 0.87 |
| 70 | 0.67 | 0.67 | 0.150 | 0.69 | 0.59 | 0.130 | 0.60 |
| 95 | 0.49 | 0.50 | 0.150 | 0.52 | 0.43 | 0.130 | 0.45 |
| 120 | 0.39 | 0.40 | 0.145 | 0.42 | 0.34 | 0.130 | 0.37 |
| 150 | 0.31 | 0.32 | 0.145 | 0.35 | 0.38 | 0.125 | 0.30 |
| 185 | 0.25 | 0.26 | 0.145 | 0.29 | 0.22 | 0.125 | 0.26 |
| 240 | 0.195 | 0.200 | 0.140 | 0.24 | 0.175 | 0.125 | 0.21 |
| 300 | 0.155 | 0.160 | 0.140 | 0.21 | 0.140 | 0.120 | 0.185 |
| 400 | 0.120 | 0.130 | 0.140 | 0.190 | 0.115 | 0.120 | 0.165 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



Standard

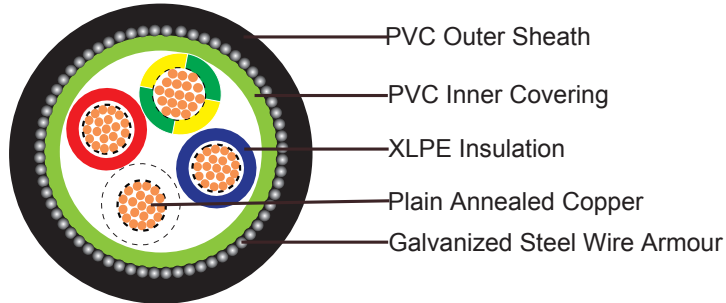


Flame Retardancy
BS EN 60332-1-2



600/1000V XLPE Insulated, PVC Sheathed, Armoured Power Cables (2-4 Cores & Multicore)

FGD400 1RVMV-R (CU/XLPE/PVC/SWA/PVC 600/1000V Class 2)
VDE Code:N2XRY



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design adapted to IEC 60502-1

FIRE PERFORMANCE

| | |
|----------------------------------------------|-------------|
| Flame Retardance (Single Vertical Wire Test) | IEC 60332-1 |
|----------------------------------------------|-------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed copper wire, stranded according to IEC 60228 class 2.

Insulation: XLPE according to IEC 60502-1.

Inner Covering: Extruded PVC or polymeric compound.

Armouring: Galvanized steel wire

Outer Sheath: Extruded PVC Type ST₁/ST₂ according to IEC 60502-1.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour:

Two-core: Brown, blue

Three-core: Brown, black, grey

Four-core: Blue, brown, black, grey

Five-core: Green-and-yellow, blue, brown, black, grey

Other colours can be manufactured upon request.

Sheath Colour: Black (other colours upon request)

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation: 80°C (For ST₁ Sheath); 90°C (For ST₂ Sheath)

Maximum short circuit temperature (5 Seconds): 250°C

Minimum bending radius: 12 x Overall Diameter

CONSTRUCTION PARAMETERS

| Conductor | | | FGD400 1RVMV-R | | | | |
|-----------------------------|--------------------|------------------------------|----------------------------------|----------------------|--------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Covering Thickness | Armour Wire Diameter | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | | mm | kg/km |
| 2 Cores | | | | | | | |
| 2x1.5 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 12.8 | 312 |
| 2x2.5 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 13.6 | 359 |
| 2x4.0 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 14.6 | 424 |
| 2x6.0 | 2 | 0.7 | 1.0 | 1.25 | 1.8 | 16.5 | 620 |
| 2x10 | 2 | 0.7 | 1.0 | 1.25 | 1.8 | 18.1 | 768 |
| 2x16 | 2 | 0.7 | 1.0 | 1.25 | 1.8 | 19.9 | 958 |
| 2x25 | 2 | 0.9 | 1.0 | 1.6 | 1.8 | 23.6 | 1414 |
| 2x35 | 2 | 0.9 | 1.0 | 1.6 | 1.8 | 25.8 | 1737 |
| 2x50 | 2 | 1.0 | 1.0 | 1.6 | 1.9 | 29 | 2208 |
| 2x70 | 2 | 1.1 | 1.0 | 2 | 2 | 33.2 | 3020 |
| 2x95 | 2 | 1.1 | 1.2 | 2 | 2.1 | 37.1 | 3793 |
| 2x120 | 2 | 1.2 | 1.2 | 2 | 2.3 | 40.5 | 4554 |
| 2x150 | 2 | 1.4 | 1.2 | 2.5 | 2.4 | 45.4 | 5821 |
| 2x185 | 2 | 1.6 | 1.4 | 2.5 | 2.6 | 49.9 | 6927 |
| 2x240 | 2 | 1.7 | 1.4 | 2.5 | 2.7 | 55.1 | 8471 |
| 2x300 | 2 | 1.8 | 1.6 | 2.5 | 2.9 | 60.2 | 10127 |
| 2x400 | 2 | 2.0 | 1.6 | 2.5 | 3.1 | 67.7 | 10850 |
| 3 Cores | | | | | | | |
| 3x1.5 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 13.2 | 325 |



Caledonian

Flame Retardant Power & Control Cables

www.caledonian-cables.co.uk www.addison-cables.com



| Conductor | | | FGD400 1RVMV-R | | | | | |
|------------------------------------------------|--------------------|------------------------------------|----------------------------------------|----------------------------|--------------------------------|--------------------------------|-------------------------|-------|
| No. of Core X Cross Section mm ² | Class of Conductor | Nominal Insulation Thickness mm | Nominal Inner Covering Thickness mm | Armour Wire Diameter mm | Nominal Sheath Thickness mm | Nominal Overall Diameter mm | Approx. Weight kg/km | |
| 3x2.5 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 14.1 | 374 | |
| 3x4.0 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 15.2 | 441 | |
| 3x6.0 | 2 | 0.7 | 1.0 | 1.25 | 1.8 | 17.1 | 660 | |
| 3x10 | 2 | 0.7 | 1.0 | 1.25 | 1.8 | 18.9 | 815 | |
| 3x16 | 2 | 0.7 | 1.0 | 1.25 | 1.8 | 20.8 | 1013 | |
| 3x25 | 2 | 0.9 | 1.0 | 1.6 | 1.8 | 24.7 | 1468 | |
| 3x35 | 2 | 0.9 | 1.0 | 1.6 | 1.8 | 27.2 | 1798 | |
| 3x50 | 2 | 1.0 | 1.0 | 1.6 | 1.9 | 30.6 | 2281 | |
| 3x70 | 2 | 1.1 | 1.0 | 2.0 | 2.1 | 35.2 | 3138 | |
| 3x95 | 2 | 1.1 | 1.2 | 2.0 | 2.2 | 39.3 | 3930 | |
| 3x120 | 2 | 1.2 | 1.2 | 2.0 | 2.3 | 43.0 | 4688 | |
| 3x150 | 2 | 1.4 | 1.4 | 2.5 | 2.5 | 48.6 | 6087 | |
| 3x185 | 2 | 1.6 | 1.4 | 2.5 | 2.7 | 53.0 | 7157 | |
| 3x240 | 2 | 1.7 | 1.4 | 2.5 | 2.8 | 58.5 | 8732 | |
| 3x300 | 2 | 1.8 | 1.6 | 2.5 | 3.0 | 64.0 | 10422 | |
| 3x400 | 2 | 2.0 | 1.6 | 3.2 | 3.3 | 73.5 | 14190 | |
| 3Cores+1 Earth Conductor | | | | | | | | |
| | | power conductor | earth conductor | | | | | |
| 3x16/10 | 2 | 0.7 | 0.7 | 1.0 | 1.6 | 1.8 | 22.7 | 1446 |
| 3x25/16 | 2 | 0.9 | 0.7 | 1.0 | 1.6 | 1.8 | 26.5 | 1925 |
| 3x35/16 | 2 | 0.9 | 0.7 | 1.0 | 1.6 | 1.9 | 29.0 | 2607 |
| 3x50/25 | 2 | 1.0 | 0.9 | 1.0 | 1.6 | 2.1 | 33.0 | 3413 |
| 3x70/35 | 2 | 1.1 | 0.9 | 1.2 | 2.0 | 2.2 | 38.0 | 4710 |
| 3x95/50 | 2 | 1.1 | 1.0 | 1.2 | 2.0 | 2.3 | 42.4 | 6179 |
| 3x120/70 | 2 | 1.2 | 1.1 | 1.2 | 2.0 | 2.5 | 48.0 | 8195 |
| 3x150/70 | 2 | 1.4 | 1.1 | 1.4 | 2.5 | 2.7 | 52.0 | 10304 |
| 3x185/95 | 2 | 1.6 | 1.1 | 1.4 | 2.5 | 2.8 | 57.2 | 13172 |
| 3x240/120 | 2 | 1.7 | 1.2 | 1.6 | 2.5 | 3.1 | 64.0 | 16711 |
| 3x300/150 | 2 | 1.8 | 1.4 | 1.6 | 2.5 | 3.2 | 69.8 | 21094 |
| 3x400/185 | 2 | 2.0 | 1.6 | 1.6 | 3.2 | 3.6 | 78.6 | 27130 |
| 4 Cores | | | | | | | | |
| 4x1.5 | 2 | 0.7 | | 1.0 | 0.8 | 1.8 | 14.0 | 389 |

| Conductor | | | FGD400 1RVMV-R | | | | |
|------------------------------------------------|--------------------|------------------------------------|----------------------------------------|----------------------------|--------------------------------|--------------------------------|-------------------------|
| No. of Core X Cross Section mm ² | Class of Conductor | Nominal Insulation Thickness mm | Nominal Inner Covering Thickness mm | Armour Wire Diameter mm | Nominal Sheath Thickness mm | Nominal Overall Diameter mm | Approx. Weight kg/km |
| 4x2.5 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 14.9 | 462 |
| 4x4.0 | 2 | 0.7 | 1.0 | 1.25 | 1.8 | 17.0 | 711 |
| 4x6.0 | 2 | 0.7 | 1.0 | 1.25 | 1.8 | 18.2 | 845 |
| 4x10 | 2 | 0.7 | 1.0 | 1.25 | 1.8 | 20.2 | 1093 |
| 4x16 | 2 | 0.7 | 1.0 | 1.6 | 1.8 | 23.0 | 1542 |
| 4x25 | 2 | 0.9 | 1.0 | 1.6 | 1.8 | 26.7 | 2092 |
| 4x35 | 2 | 0.9 | 1.0 | 1.6 | 1.9 | 29.5 | 2671 |
| 4x50 | 2 | 1.0 | 1.0 | 2.0 | 2.1 | 34.2 | 3759 |
| 4x70 | 2 | 1.1 | 1.2 | 2.0 | 2.2 | 38.8 | 4850 |
| 4x95 | 2 | 1.1 | 1.2 | 2.0 | 2.3 | 42.9 | 6147 |
| 4x120 | 2 | 1.2 | 1.4 | 2.5 | 2.5 | 48.6 | 8006 |
| 4x150 | 2 | 1.4 | 1.4 | 2.5 | 2.7 | 53.2 | 9591 |
| 4x185 | 2 | 1.6 | 1.4 | 2.5 | 2.8 | 58.1 | 11403 |
| 4x240 | 2 | 1.7 | 1.6 | 2.5 | 3.1 | 64.8 | 14349 |
| 4x300 | 2 | 1.8 | 1.6 | 2.5 | 3.2 | 70.4 | 17189 |
| 4x400 | 2 | 2.0 | 1.8 | 3.2 | 3.6 | 81.3 | 23416 |
| 5 Cores | | | | | | | |
| 5x1.5 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 14.8 | 434 |
| 5x2.5 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 15.8 | 522 |
| 5x4.0 | 2 | 0.7 | 1.0 | 0.8 | 1.8 | 17.2 | 650 |
| 5x6.0 | 2 | 0.7 | 1.0 | 1.25 | 1.8 | 19.4 | 947 |
| 5x10 | 2 | 0.7 | 1.0 | 1.25 | 1.8 | 21.6 | 1244 |
| 5x16 | 2 | 0.7 | 1.0 | 1.6 | 1.8 | 24.7 | 1793 |
| 5x25 | 2 | 0.9 | 1.0 | 1.6 | 1.9 | 29.0 | 2473 |
| 5x35 | 2 | 0.9 | 1.0 | 1.6 | 2.0 | 32.2 | 3179 |

Note : Other conductor sizes & core configurations are available upon request.

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C



Current-Carrying Capacities (Amp) according to BS7671:2008 table 4E4A

| Conductor cross-sectional area | Reference Method C (clipped direct) | | Reference Method E (in free air or on a perforated cable tray, horizontal or vertical) | | Reference Method D (direct in in ground or in ducting in ground in or around buildings) | |
|--------------------------------|----------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------|
| | 1 two-core cable*, single-phase a.c. or d.c. | 1 three-or four core cable*, three-phase a.c. | 1 two-core cable*, single-phase a.c. or d.c. | 1 three-or four core cable*, three-phase a.c. | 1 two-core cable*, single-phase a.c. or d.c. | 1 three-or four core cable*, three-phase a.c. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| mm ² | A | A | A | A | A | A |
| 1.5 | 27 | 23 | 29 | 25 | 25 | 21 |
| 2.5 | 36 | 31 | 39 | 33 | 33 | 28 |
| 4.0 | 49 | 42 | 52 | 44 | 43 | 36 |
| 6.0 | 62 | 53 | 66 | 56 | 53 | 44 |
| 10 | 85 | 73 | 90 | 78 | 71 | 58 |
| 16 | 110 | 94 | 115 | 99 | 91 | 75 |
| 25 | 146 | 124 | 152 | 131 | 116 | 96 |
| 35 | 180 | 154 | 188 | 162 | 139 | 115 |
| 50 | 219 | 187 | 228 | 197 | 164 | 135 |
| 70 | 279 | 238 | 291 | 251 | 203 | 167 |
| 95 | 338 | 289 | 354 | 304 | 239 | 197 |
| 120 | 392 | 335 | 410 | 353 | 271 | 223 |
| 150 | 451 | 386 | 472 | 406 | 306 | 251 |
| 185 | 515 | 441 | 539 | 463 | 343 | 281 |
| 240 | 607 | 520 | 636 | 546 | 395 | 324 |
| 300 | 698 | 599 | 732 | 628 | 446 | 365 |
| 400 | 787 | 673 | 847 | 728 | - | - |

Voltage Drop (Per Amp Per Meter) according to BS7671:2008 table 4E4B

| Conductor cross-sectional area | Two-core cables, d.c. | Two-core cable, single-phase a.c. | Three-or four core cable, three-phase a.c. |
|--------------------------------|-----------------------|-----------------------------------|--------------------------------------------|
| 1 | 2 | 3 | 4 |
| mm ² | mV/A/m | mV/A/m | mV/A/m |
| 1.5 | 31 | 31 | 27 |
| 2.5 | 19 | 19 | 16 |
| 4.0 | 12 | 12 | 10 |
| 6.0 | 7.9 | 7.9 | 6.8 |
| 10 | 4.7 | 4.7 | 4.0 |

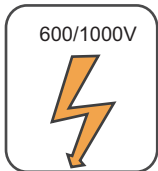
| Conductor cross-sectional area | Two-core cables, d.c. | Two-core cable, single-phase a.c. | | | Three-or four core cable, three-phase a.c. | | |
|--------------------------------|-----------------------|-----------------------------------|-------|-------|--------------------------------------------|-------|-------|
| 1 | 2 | 3 | | | 4 | | |
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | |
| 16 | 2.9 | 2.9 | | | 2.5 | | |
| | | r | x | z | r | x | z |
| 25 | 1.85 | 1.85 | 0.160 | 1.90 | 1.60 | 0.140 | 1.65 |
| 35 | 1.35 | 1.35 | 0.155 | 1.35 | 1.15 | 0.135 | 1.15 |
| 50 | 0.98 | 0.99 | 0.155 | 1.00 | 0.86 | 0.135 | 0.87 |
| 70 | 0.67 | 0.67 | 0.150 | 0.69 | 0.59 | 0.130 | 0.60 |
| 95 | 0.49 | 0.50 | 0.150 | 0.52 | 0.43 | 0.130 | 0.45 |
| 120 | 0.39 | 0.40 | 0.145 | 0.42 | 0.34 | 0.130 | 0.37 |
| 150 | 0.31 | 0.32 | 0.145 | 0.35 | 0.38 | 0.125 | 0.30 |
| 185 | 0.25 | 0.26 | 0.145 | 0.29 | 0.22 | 0.125 | 0.26 |
| 240 | 0.195 | 0.200 | 0.140 | 0.24 | 0.175 | 0.125 | 0.21 |
| 300 | 0.155 | 0.160 | 0.140 | 0.21 | 0.140 | 0.120 | 0.185 |
| 400 | 0.120 | 0.130 | 0.140 | 0.190 | 0.115 | 0.120 | 0.165 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



Standard

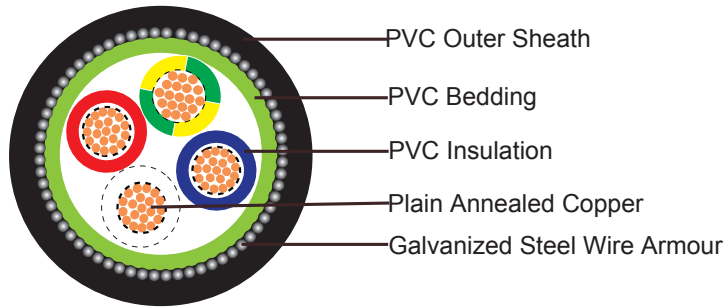


Flame Retardancy
IEC 60332-1



600/1000V PVC Insulated, PVC Sheathed, Armoured Power Cables (2-5 Cores & Multicore)

FGD400 1VVMV-R (CU/PVC/PVC/SWA/PVC 600/1000V Class 2)



APPLICATION

The cables are intended for use in fixed installations in industrial areas, buildings and similar applications.

STANDARDS

Basic design to BS 6346

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 50265-2-1 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed copper wire, stranded according to BS 6360 class 2.

Insulation: PVC TI 1 according to BS 7655-3.1.

Bedding: Extruded PVC or taped bedding comprising two or more layers of PVC tape or other synthetic tape (for cables having a nominal conductor area of 16mm² and above).

Armouring: Galvanized steel wire.

Outer Sheath: PVC TM 1 according to BS 7655-4.1.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour:

Two-core: Brown, blue

Three-core: Brown, black, grey

Four-core: Blue, brown, black, grey

Five-core: Green-and-yellow, blue, brown, black, grey

Sheath Colour: Black (other colours upon request)

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (PVC): 70°C

Maximum short circuit temperature (5 Seconds): 160°C

Minimum bending radius:

Circular copper conductors: 6 x Overall Diameter

Shaped copper conductors: 8 x Overall Diameter

CONSTRUCTION PARAMETERS

| Conductor | | FGD400 1VVMAR-R | | | | | | |
|-----------------------------------|-----------------------|------------------------------------|---------------------------------|------------------------------------|--------------------------------|-----------------------------|------------------|------------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Bedding Thickness | Nominal Armour Wire Diameter | Nominal Sheath Thickness | Approx. Overall Diameter | | Approx Weight |
| | | | | | | Extruded Bedding | Taped Bedding | |
| No. x mm ² | | mm | mm | mm | mm | mm | mm | kg/km |
| 2 Core | | | | | | | | |
| 2x1.5 ^a | 2 | 0.6 | 0.8 | 0.9 | 1.4 | 12.3 | - | 278 |
| 2x2.5 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.4 | 13.6 | - | 355 |
| 2x4.0 ^a | 2 | 0.8 | 0.8 | 0.9 | 1.4 | 15.1 | - | 437 |
| 2x6.0 ^a | 2 | 0.8 | 0.8 | 0.9 | 1.5 | 16.5 | - | 524 |
| 2x10 ^a | 2 | 1.0 | 0.8 | 1.25 | 1.6 | 20.1 | - | 835 |
| 2x16 ^a | 2 | 1.0 | 0.8 | 1.25 | 1.6 | 21.9 | 21.9 | 1045 |
| 2x25 ^b | 2 | 1.2 | 1.0 | 1.6 | 1.7 | 23.0 | 22.6 | 1535 |
| 2x25 ^a | 2 | 1.2 | 1.0 | 1.6 | 1.7 | 26.7 | 26.3 | 1608 |
| 2x35 ^b | 2 | 1.2 | 1.0 | 1.6 | 1.8 | 24.8 | 24.4 | 1839 |
| 2x35 ^a | 2 | 1.2 | 1.0 | 1.6 | 1.8 | 29.2 | 28.8 | 1941 |
| 2x50 ^b | 2 | 1.4 | 1.0 | 1.6 | 1.9 | 27.8 | 27.4 | 1364 |
| 2x70 ^b | 2 | 1.4 | 1.0 | 1.6 | 1.9 | 30.4 | 30.0 | 2328 |
| 2x95 ^b | 2 | 1.6 | 1.2 | 2.0 | 2.1 | 35.5 | 34.7 | 3759 |
| 2x120 ^b | 2 | 1.6 | 1.2 | 2.0 | 2.2 | 38.0 | 37.2 | 3217 |
| 2x150 ^b | 2 | 1.8 | 1.2 | 2.0 | 2.3 | 41.3 | 40.5 | 3732 |



| Conductor | | FGD400 1VVMAV-R | | | | | | |
|-----------------------------------|-----------------------|------------------------------------|---------------------------------|------------------------------------|--------------------------------|-----------------------------|------------------|------------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Bedding Thickness | Nominal Armour Wire Diameter | Nominal Sheath Thickness | Approx. Overall Diameter | | Approx Weight |
| | | | | | | Extruded Bedding | Taped Bedding | |
| No. x mm ² | | mm | mm | mm | mm | mm | mm | kg/km |
| 2x185 ^b | 2 | 2.0 | 1.4 | 2.5 | 2.4 | 46.4 | 45.2 | 6669 |
| 2x240 ^b | 2 | 2.2 | 1.4 | 2.5 | 2.5 | 51.2 | 50.0 | 6432 |
| 2x300 ^b | 2 | 2.4 | 1.6 | 2.5 | 2.7 | 56.4 | 54.8 | 7680 |
| 2x400 ^b | 2 | 2.6 | 1.6 | 2.5 | 2.9 | 61.9 | 60.3 | 12535 |
| 3 Core | | | | | | | | |
| 3x1.5 ^a | 2 | 0.6 | 0.8 | 0.9 | 1.4 | 12.8 | - | 311 |
| 3x2.5 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.4 | 14.1 | - | 405 |
| 3x4.0 ^a | 2 | 0.8 | 0.8 | 0.9 | 1.4 | 15.8 | - | 510 |
| 3x6.0 ^a | 2 | 0.8 | 0.8 | 1.25 | 1.5 | 18.0 | - | 727 |
| 3x10 ^a | 2 | 1.0 | 0.8 | 1.25 | 1.6 | 21.2 | - | 998 |
| 3x16 ^a | 2 | 1.0 | 0.8 | 1.25 | 1.6 | 23.1 | 23.1 | 1291 |
| 3x25 ^b | 2 | 1.2 | 1.0 | 1.6 | 1.7 | 25.0 | 24.6 | 1879 |
| 3x25 ^a | 2 | 1.2 | 1.0 | 1.6 | 1.7 | 28.2 | 27.8 | 1989 |
| 3x35 ^b | 2 | 1.2 | 1.0 | 1.6 | 1.8 | 27.1 | 26.7 | 2286 |
| 3x35 ^a | 2 | 1.2 | 1.0 | 1.6 | 1.8 | 30.8 | 30.4 | 2439 |
| 3x50 ^b | 2 | 1.4 | 1.0 | 1.6 | 1.9 | 30.5 | 30.1 | 1638 |
| 3x70 ^b | 2 | 1.4 | 1.2 | 2.0 | 2.0 | 35.0 | 34.2 | 3272 |
| 3x95 ^b | 2 | 1.6 | 1.2 | 2.0 | 2.1 | 39.3 | 38.5 | 4789 |
| 3x120 ^b | 2 | 1.6 | 1.2 | 2.0 | 2.2 | 42.2 | 41.4 | 4068 |
| 3x150 ^b | 2 | 1.8 | 1.4 | 2.5 | 2.4 | 47.5 | 46.3 | 5231 |
| 3x185 ^b | 2 | 2.0 | 1.4 | 2.5 | 2.5 | 51.9 | 50.7 | 8660 |
| 3x240 ^b | 2 | 2.2 | 1.6 | 2.5 | 2.6 | 57.8 | 56.2 | 8395 |
| 3x300 ^b | 2 | 2.4 | 1.6 | 2.5 | 2.8 | 63.2 | 61.6 | 10006 |
| 3x400 ^b | 2 | 2.6 | 1.6 | 2.5 | 3.0 | 69.6 | 68.0 | 16856 |
| 4 Core | | | | | | | | |
| 4x1.5 ^a | 2 | 0.6 | 0.8 | 0.9 | 1.4 | 13.5 | - | 353 |
| 4x2.5 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.4 | 15.0 | - | 466 |
| 4x4.0 ^a | 2 | 0.8 | 0.8 | 1.25 | 1.5 | 17.8 | - | 708 |

| Conductor | | FGD400 1VVMAV-R | | | | | | |
|-----------------------------------|-----------------------|------------------------------------|---------------------------------|------------------------------------|--------------------------------|-----------------------------|------------------|------------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Bedding Thickness | Nominal Armour Wire Diameter | Nominal Sheath Thickness | Approx. Overall Diameter | | Approx Weight |
| | | | | | | Extruded Bedding | Taped Bedding | |
| No. x mm ² | | mm | mm | mm | mm | mm | mm | kg/km |
| 4x6.0 ^a | 2 | 0.8 | 0.8 | 1.25 | 1.5 | 19.2 | - | 850 |
| 4x10 ^a | 2 | 1.0 | 0.8 | 1.25 | 1.6 | 22.8 | - | 1186 |
| 4x16 ^a | 2 | 1.0 | 1.0 | 1.6 | 1.7 | 26.3 | 25.9 | 1751 |
| 4x25 ^b | 2 | 1.2 | 1.0 | 1.6 | 1.8 | 27.8 | 27.4 | 2254 |
| 4x25 ^a | 2 | 1.2 | 1.0 | 1.6 | 1.8 | 30.7 | 30.3 | 2401 |
| 4x35 ^b | 2 | 1.2 | 1.0 | 1.6 | 1.9 | 30.3 | 29.9 | 2769 |
| 4x35 ^a | 2 | 1.2 | 1.0 | 1.6 | 1.9 | 33.7 | 33.3 | 2972 |
| 4x50 ^b | 2 | 1.4 | 1.2 | 2.0 | 2.0 | 35.4 | 34.6 | 2198 |
| 4x70 ^b | 2 | 1.4 | 1.2 | 2.0 | 2.1 | 39.2 | 38.4 | 3961 |
| 4x95 ^b | 2 | 1.6 | 1.2 | 2.0 | 2.2 | 44.3 | 43.5 | 5891 |
| 4x120 ^b | 2 | 1.6 | 1.4 | 2.5 | 2.4 | 49.3 | 48.1 | 5437 |
| 4x150 ^b | 2 | 1.8 | 1.4 | 2.5 | 2.5 | 53.6 | 52.4 | 6357 |
| 4x185 ^b | 2 | 2.0 | 1.6 | 2.5 | 2.6 | 59.0 | 57.4 | 10827 |
| 4x240 ^b | 2 | 2.2 | 1.6 | 2.5 | 2.8 | 65.7 | 64.1 | 10363 |
| 4x300 ^b | 2 | 2.4 | 1.6 | 2.5 | 3.0 | 72.0 | 70.4 | 12420 |
| 4x400 ^b | 2 | 2.6 | 1.8 | 3.15 | 3.3 | 81.3 | 79.3 | 22477 |
| 5 Core | | | | | | | | |
| 5x1.5 ^a | 2 | 0.6 | 0.8 | 0.9 | 1.4 | 14.3 | - | 396 |
| 5x2.5 ^a | 2 | 0.7 | 0.8 | 0.9 | 1.5 | 16.3 | - | 538 |
| 5x4.0 ^a | 2 | 0.8 | 0.8 | 1.25 | 1.5 | 19.0 | - | 807 |
| 5x6.0 ^a | 2 | 0.8 | 0.8 | 1.25 | 1.6 | 20.9 | - | 987 |
| 5x10 ^a | 2 | 1.0 | 1.0 | 1.6 | 1.7 | 25.8 | - | 1581 |
| 5x16 ^a | 2 | 1.0 | 1.0 | 1.6 | 1.7 | 28.4 | 28.0 | 2039 |
| 5x25 ^a | 2 | 1.2 | 1.0 | 1.6 | 1.9 | 33.5 | 33.1 | 2840 |
| 5x35 ^a | 2 | 1.2 | 1.0 | 1.6 | 1.9 | 36.6 | 36.2 | 3518 |
| 5x50 ^a | 2 | 1.4 | 1.2 | 2.0 | 2.1 | 43.0 | 42.2 | 4881 |
| 5x70 ^a | 2 | 1.4 | 1.2 | 2.0 | 2.2 | 48.1 | 47.3 | 6325 |



| Conductor | | FGD400 1VVMAV-R | | | | | | Approx. Overall Diameter | Approx Weight |
|--------------------------------------------------------------------------|--------------------|------------------------------|---------------------------|------------------------------|--------------------------|------------------|---------------|--------------------------|---------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Bedding Thickness | Nominal Armour Wire Diameter | Nominal Sheath Thickness | Extruded Bedding | Taped Bedding | | |
| No. x mm ² | | mm | mm | mm | mm | mm | mm | kg/km | |
| ^a Circular or compacted circular stranded conductor (class 2) | | | | | | | | | |
| ^b Shaped stranded conductor (class 2) | | | | | | | | | |

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 70°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671: 2008 table 4D4A

| Conductor cross-sectional area | Reference Method C (clipped direct) | | Reference Method E (in free air or on a perforated cable tray, horizontal or vertical) | | Reference Method D (direct in ground or in ducting in ground, in or around buildings) | |
|--------------------------------|---------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------|
| | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. |
| 1 mm ² | 2 | 3 | 4 | 5 | 6 | 7 |
| | A | A | A | A | A | A |
| 1.5 | 21 | 18 | 22 | 19 | 22 | 18 |
| 2.5 | 28 | 25 | 31 | 26 | 29 | 24 |
| 4 | 38 | 33 | 41 | 35 | 37 | 30 |
| 6 | 49 | 42 | 53 | 45 | 46 | 38 |
| 10 | 67 | 58 | 72 | 62 | 60 | 50 |
| 16 | 89 | 77 | 97 | 83 | 78 | 64 |
| 25 | 118 | 102 | 128 | 110 | 99 | 82 |
| 35 | 145 | 125 | 157 | 135 | 119 | 98 |
| 50 | 175 | 151 | 190 | 163 | 140 | 116 |
| 70 | 222 | 192 | 241 | 207 | 173 | 143 |
| 95 | 269 | 231 | 291 | 251 | 204 | 169 |
| 120 | 310 | 267 | 336 | 290 | 231 | 192 |
| 150 | 356 | 306 | 386 | 332 | 261 | 217 |
| 185 | 405 | 348 | 439 | 378 | 292 | 243 |
| 240 | 476 | 409 | 516 | 445 | 336 | 280 |
| 300 | 547 | 469 | 592 | 510 | 379 | 316 |
| 400 | 621 | 540 | 683 | 590 | - | - |

Voltage Drop (Per Amp Per Meter) according to BS 7671: 2008 table 4D4B

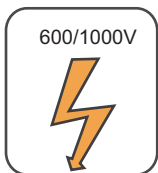
| Nominal Cross Section Area 1 | Two-core cables d.c. 2 | Two-core cable, single-phase a.c. 3 | | | Three- or four-core cable, 4 | | |
|---------------------------------|---------------------------|----------------------------------------|-------|-------|---------------------------------|-------|-------|
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | |
| 1.5 | 29 | 29 | | | 25 | | |
| 2.5 | 18 | 18 | | | 15 | | |
| 4.0 | 11 | 11 | | | 9.5 | | |
| 6.0 | 7.3 | 7.3 | | | 6.4 | | |
| 10 | 4.4 | 4.4 | | | 3.8 | | |
| 16 | 2.8 | 2.8 | | | 2.4 | | |
| | | r | x | z | r | x | z |
| 25 | 1.75 | 1.75 | 0.170 | 1.75 | 1.50 | 0.145 | 1.50 |
| 35 | 1.25 | 1.25 | 0.165 | 1.25 | 1.10 | 0.145 | 1.10 |
| 50 | 0.93 | 0.93 | 0.165 | 0.94 | 0.80 | 0.140 | 0.81 |
| 70 | 0.63 | 0.63 | 0.160 | 0.65 | 0.55 | 0.140 | 0.57 |
| 95 | 0.46 | 0.47 | 0.155 | 0.50 | 0.41 | 0.135 | 0.43 |
| 120 | 0.36 | 0.38 | 0.155 | 0.41 | 0.33 | 0.135 | 0.35 |
| 150 | 0.29 | 0.30 | 0.155 | 0.34 | 0.26 | 0.130 | 0.29 |
| 185 | 0.23 | 0.25 | 0.150 | 0.29 | 0.21 | 0.130 | 0.25 |
| 240 | 0.180 | 0.190 | 0.150 | 0.24 | 0.165 | 0.130 | 0.21 |
| 300 | 0.145 | 0.155 | 0.145 | 0.21 | 0.135 | 0.130 | 0.185 |
| 400 | 0.105 | 0.115 | 0.145 | 0.185 | 0.100 | 0.125 | 0.160 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



Standard



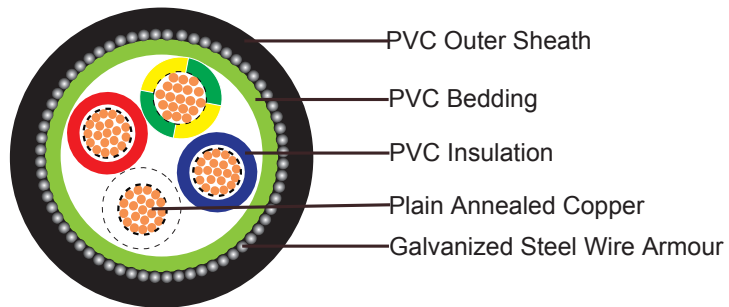
Flame Retardancy
BS EN 50265-2-1



600/1000V PVC Insulated, PVC Sheathed, Armoured Power Cables (2-4 Cores)

FGD400 1VVMV-R (CU/PVC/PVC/SWA/PVC 600/1000V Class 2)

VDE Code: NYRY



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design adapted to IEC 60502-1

FIRE PERFORMANCE

| | |
|----------------------------------------------|---------------|
| Flame Retardance (Single Vertical Wire Test) | IEC 60332-1-2 |
|----------------------------------------------|---------------|

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed copper wire, stranded according to IEC 60228 class 2.

Insulation: PVC/A according to IEC 60502-1.

Inner Covering: Extruded PVC or polymeric compound.

Armouring: Galvanized steel wire

Outer Sheath: Extruded PVC Type ST₁/ST₂ according to IEC 60502-1.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Two-core: Brown, blue

Three-core: Brown, black, grey

Four-core: Blue, brown, black, grey
 Five-core: Green-and-yellow, blue, brown, black, grey
 Other colours can be manufactured upon request.
Sheath Colour: Black (other colours upon request)

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation (PVC): 70°C
Maximum short circuit temperature (5 Seconds): 160°C(≤300 mm²); 140°C(>300 mm²)

Minimum bending radius:

Circular copper conductors: 6 x Overall Diameter
 Shaped copper conductors: 8 x Overall Diameter

CONSTRUCTION PARAMETERS

| Conductor | | | FGD400 1RVMV-R | | | | |
|-----------------------------|--------------------|------------------------------|----------------------------------|----------------------|--------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Covering Thickness | Armour Wire Diameter | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | mm | mm | kg/km |
| 2 Cores | | | | | | | |
| 2x2.5 | 2 | 0.8 | 1.0 | 0.8 | 1.8 | 14.0 | 380 |
| 2x4.0 | 2 | 1.0 | 1.0 | 1.25 | 1.8 | 16.7 | 604 |
| 2x6.0 | 2 | 1.0 | 1.0 | 1.25 | 1.8 | 17.7 | 689 |
| 2x10 | 2 | 1.0 | 1.0 | 1.25 | 1.8 | 19.3 | 841 |
| 2x16 | 2 | 1.0 | 1.0 | 1.25 | 1.8 | 21.1 | 1037 |
| 2x25 | 2 | 1.2 | 1.0 | 1.6 | 1.8 | 24.8 | 1513 |
| 2x35 | 2 | 1.2 | 1.0 | 1.6 | 1.8 | 27.0 | 1843 |
| 2x50 | 2 | 1.4 | 1.0 | 1.6 | 1.9 | 30.7 | 2356 |
| 2x70 | 2 | 1.4 | 1.0 | 2.0 | 2.1 | 34.5 | 3179 |
| 2x95 | 2 | 1.6 | 1.2 | 2.0 | 2.2 | 39.2 | 4042 |
| 2x120 | 2 | 1.6 | 1.2 | 2.0 | 2.3 | 42.2 | 4764 |
| 2x150 | 2 | 1.8 | 1.2 | 2.5 | 2.5 | 47.2 | 6095 |
| 2x185 | 2 | 2.0 | 1.4 | 2.5 | 2.6 | 51.6 | 7207 |
| 2x240 | 2 | 2.2 | 1.4 | 2.5 | 2.8 | 57.2 | 8861 |
| 2x300 | 2 | 2.4 | 1.6 | 2.5 | 3.0 | 62.8 | 10608 |
| 2x400 | 2 | 2.6 | 1.6 | 2.5 | 3.2 | 70.3 | 13385 |
| 3 Cores | | | | | | | |
| 3x2.5 | 2 | 0.8 | 1.0 | 0.8 | 1.8 | 14.5 | 432 |
| 3x4.0 | 2 | 1.0 | 1.0 | 1.25 | 1.8 | 17.4 | 689 |
| 3x6.0 | 2 | 1.0 | 1.0 | 1.25 | 1.8 | 18.4 | 800 |
| 3x10 | 2 | 1.0 | 1.0 | 1.25 | 1.8 | 20.2 | 1001 |



Caledonian

Flame Retardant Power & Control Cables

www.caledonian-cables.co.uk www.addison-cables.com



| Conductor | | | FGD400 1RVMV-R | | | | | |
|-----------------------------|--------------------|------------------------------|----------------------------------|----------------------|--------------------------|--------------------------|----------------|-------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Covering Thickness | Armour Wire Diameter | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight | |
| mm ² | | mm | mm | mm | mm | mm | kg/km | |
| 3x16 | 2 | 1.0 | 1.0 | 1.6 | 1.8 | 22.8 | 1405 | |
| 3x25 | 2 | 1.2 | 1.0 | 1.6 | 1.8 | 26.0 | 1860 | |
| 3x35 | 2 | 1.2 | 1.0 | 1.6 | 1.9 | 28.5 | 2325 | |
| 3x50 | 2 | 1.4 | 1.0 | 2.0 | 2.0 | 33.3 | 3266 | |
| 3x70 | 2 | 1.4 | 1.2 | 2.0 | 2.1 | 37.0 | 4108 | |
| 3x95 | 2 | 1.6 | 1.2 | 2.0 | 2.3 | 41.6 | 5245 | |
| 3x120 | 2 | 1.6 | 1.2 | 2.5 | 2.4 | 45.9 | 6677 | |
| 3x150 | 2 | 1.8 | 1.4 | 2.5 | 2.6 | 50.4 | 8016 | |
| 3x185 | 2 | 2.0 | 1.4 | 2.5 | 2.7 | 54.8 | 9466 | |
| 3x240 | 2 | 2.2 | 1.5 | 2.5 | 2.9 | 61.2 | 11805 | |
| 3x300 | 2 | 2.4 | 1.6 | 2.5 | 3.1 | 66.8 | 14181 | |
| 3x400 | 2 | 2.8 | 1.6 | 3.15 | 3.4 | 76.7 | 19235 | |
| 3x500 | 2 | 2.8 | 1.8 | 3.15 | 3.7 | 83.6 | 23011 | |
| 3Cores+1 Earth Conductor | | | | | | | | |
| 3x10/6 | 2 | 1.0 | 1.0 | 1.0 | 1.25 | 1.8 | 21.9 | 1140 |
| 3x16/10 | 2 | 1.0 | 1.0 | 1.0 | 1.6 | 1.8 | 24.2 | 1633 |
| 3x25/16 | 2 | 1.2 | 1.0 | 1.0 | 1.6 | 1.8 | 27.9 | 2145 |
| 3x35/16 | 2 | 1.2 | 1.0 | 1.0 | 1.6 | 1.9 | 30.8 | 2659 |
| 3x50/25 | 2 | 1.4 | 1.2 | 1.0 | 2.0 | 2.0 | 36.4 | 3739 |
| 3x70/35 | 2 | 1.4 | 1.2 | 1.2 | 2.0 | 2.1 | 40.1 | 4720 |
| 3x95/50 | 2 | 1.6 | 1.4 | 1.2 | 2.5 | 2.3 | 46.3 | 6398 |
| 3x120/70 | 2 | 1.6 | 1.4 | 1.4 | 2.5 | 2.4 | 50.3 | 7746 |
| 3x150/70 | 2 | 1.8 | 1.4 | 1.4 | 2.5 | 2.6 | 55.0 | 9128 |
| 3x185/95 | 2 | 2.0 | 1.6 | 1.4 | 2.5 | 2.7 | 60.3 | 10916 |
| 3x240/120 | 2 | 2.2 | 1.6 | 1.6 | 2.5 | 2.9 | 67.0 | 13713 |
| 3x300/150 | 2 | 2.4 | 1.8 | 1.6 | 3.15 | 3.1 | 74.6 | 17403 |
| 3x400/185 | 2 | 2.6 | 2.0 | 1.8 | 3.15 | 3.4 | 84.1 | 20704 |
| 3x500/240 | 2 | 2.8 | 2.2 | 2.0 | 3.15 | 3.7 | 91.8 | 25817 |
| 4 Cores | | | | | | | | |
| 4x4.0 | 2 | 1.0 | 1.0 | 1.25 | 1.8 | 18.5 | 792 | |
| 4x6.0 | 2 | 1.0 | 1.0 | 1.25 | 1.8 | 19.7 | 931 | |
| 4x10 | 2 | 1.0 | 1.0 | 1.25 | 1.8 | 22.3 | 1185 | |
| 4x16 | 2 | 1.0 | 1.0 | 1.6 | 1.8 | 24.5 | 1672 | |

| Conductor | | | FGD400 1RVMV-R | | | | |
|-----------------------------|--------------------|------------------------------|----------------------------------|----------------------|--------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Covering Thickness | Armour Wire Diameter | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | mm | mm | kg/km |
| 4x25 | 2 | 1.2 | 1.0 | 1.6 | 1.9 | 28.2 | 2260 |
| 4x35 | 2 | 1.2 | 1.0 | 1.6 | 2.0 | 31.1 | 2854 |
| 4x50 | 2 | 1.4 | 1.0 | 2.0 | 2.1 | 36.7 | 4013 |
| 4x70 | 2 | 1.4 | 1.2 | 2.0 | 2.3 | 40.4 | 5104 |
| 4x95 | 2 | 1.6 | 1.2 | 2.5 | 2.5 | 46.6 | 6996 |
| 4x120 | 2 | 1.6 | 1.4 | 2.5 | 2.6 | 50.6 | 8400 |
| 4x150 | 2 | 1.8 | 1.4 | 2.5 | 2.7 | 55.3 | 10008 |
| 4x185 | 2 | 2.0 | 1.4 | 2.5 | 2.9 | 60.6 | 11906 |
| 4x240 | 2 | 2.2 | 1.6 | 2.5 | 3.1 | 67.3 | 14963 |
| 4x300 | 2 | 2.4 | 1.6 | 3.15 | 3.4 | 74.9 | 18944 |
| 4x400 | 2 | 2.6 | 1.8 | 3.15 | 3.7 | 84.4 | 24304 |
| 4x500 | 2 | 2.8 | 2.0 | 3.15 | 3.9 | 92.1 | 29351 |

Note : Other conductor sizes & core configurations are available upon request.

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 70°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp) according to BS 7671: 2008 table 4D4A

| Conductor cross-sectional area | Reference Method C (clipped direct) | | Reference Method E (in free air or on a perforated cable tray, horizontal or vertical) | | Reference Method D (direct in ground or in ducting in ground. in or around buildings) | |
|--------------------------------|---------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------|
| | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| mm ² | A | A | A | A | A | A |
| 1.5 | 21 | 18 | 22 | 19 | 22 | 18 |
| 2.5 | 28 | 25 | 31 | 26 | 29 | 24 |
| 4.0 | 38 | 33 | 41 | 35 | 37 | 30 |
| 6.0 | 49 | 42 | 53 | 45 | 46 | 38 |
| 10 | 67 | 58 | 72 | 62 | 60 | 50 |
| 16 | 89 | 77 | 97 | 83 | 78 | 64 |
| 25 | 118 | 102 | 128 | 110 | 99 | 82 |
| 35 | 145 | 125 | 157 | 135 | 119 | 98 |



| Conductor cross-sectional area | Reference Method C (clipped direct) | | Reference Method E (in free air or on a perforated cable tray, horizontal or vertical) | | Reference Method D (direct in ground or in ducting in ground. in or around buildings) | |
|--------------------------------|---------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------|
| | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. | 1 two-core cable, single-phase a.c. or d.c. | 1 three- or four-core cable, three-phase a.c. |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| mm ² | A | A | A | A | A | A |
| 50 | 175 | 151 | 190 | 163 | 140 | 116 |
| 70 | 222 | 192 | 241 | 207 | 173 | 143 |
| 95 | 269 | 231 | 291 | 251 | 204 | 169 |
| 120 | 310 | 267 | 336 | 290 | 231 | 192 |
| 150 | 356 | 306 | 386 | 332 | 261 | 217 |
| 185 | 405 | 348 | 439 | 378 | 292 | 243 |
| 240 | 476 | 409 | 516 | 445 | 336 | 280 |
| 300 | 547 | 469 | 592 | 510 | 379 | 316 |
| 400 | 621 | 540 | 683 | 590 | - | - |

Voltage Drop (Per Amp Per Meter) according to BS 7671: 2008 table 4D4B

| Nominal Cross Section Area 1 | Two-core cables d.c. 2 | Two-core cable, single-phase a.c. 3 | | | Three- or four-core cable, 4 | | |
|---------------------------------|---------------------------|----------------------------------------|-------|------|---------------------------------|-------|------|
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | |
| 1.5 | 29 | 29 | | | 25 | | |
| 2.5 | 18 | 18 | | | 15 | | |
| 4.0 | 11 | 11 | | | 9.5 | | |
| 6.0 | 7.3 | 7.3 | | | 6.4 | | |
| 10 | 4.4 | 4.4 | | | 3.8 | | |
| 16 | 2.8 | 2.8 | | | 2.4 | | |
| | | r | x | z | r | x | z |
| 25 | 1.75 | 1.75 | 0.170 | 1.75 | 1.50 | 0.145 | 1.50 |
| 35 | 1.25 | 1.25 | 0.165 | 1.25 | 1.10 | 0.145 | 1.10 |
| 50 | 0.93 | 0.93 | 0.165 | 0.94 | 0.80 | 0.140 | 0.81 |
| 70 | 0.63 | 0.63 | 0.160 | 0.65 | 0.55 | 0.140 | 0.57 |
| 95 | 0.46 | 0.47 | 0.155 | 0.50 | 0.41 | 0.135 | 0.43 |
| 120 | 0.36 | 0.38 | 0.155 | 0.41 | 0.33 | 0.135 | 0.35 |
| 150 | 0.29 | 0.30 | 0.155 | 0.34 | 0.26 | 0.130 | 0.29 |
| 185 | 0.23 | 0.25 | 0.150 | 0.29 | 0.21 | 0.130 | 0.25 |
| 240 | 0.180 | 0.190 | 0.150 | 0.24 | 0.165 | 0.130 | 0.21 |

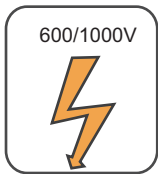
| Nominal Cross Section Area 1 | Two-core cables d.c. 2 | Two-core cable, single-phase a.c. 3 | | | Three- or four-core cable, 4 | | |
|---------------------------------|---------------------------|----------------------------------------|-------|-------|---------------------------------|-------|-------|
| mm ² | mV/A/m | mV/A/m | | | mV/A/m | | |
| 300 | 0.145 | 0.155 | 0.145 | 0.21 | 0.135 | 0.130 | 0.185 |
| 400 | 0.105 | 0.115 | 0.145 | 0.185 | 0.100 | 0.125 | 0.160 |

Note: *Spacings larger than one cable diameter will result in a large voltage drop.

r = conductor resistance at operating temperature

x = reactance

z = impedance



Rated Voltage



Standard

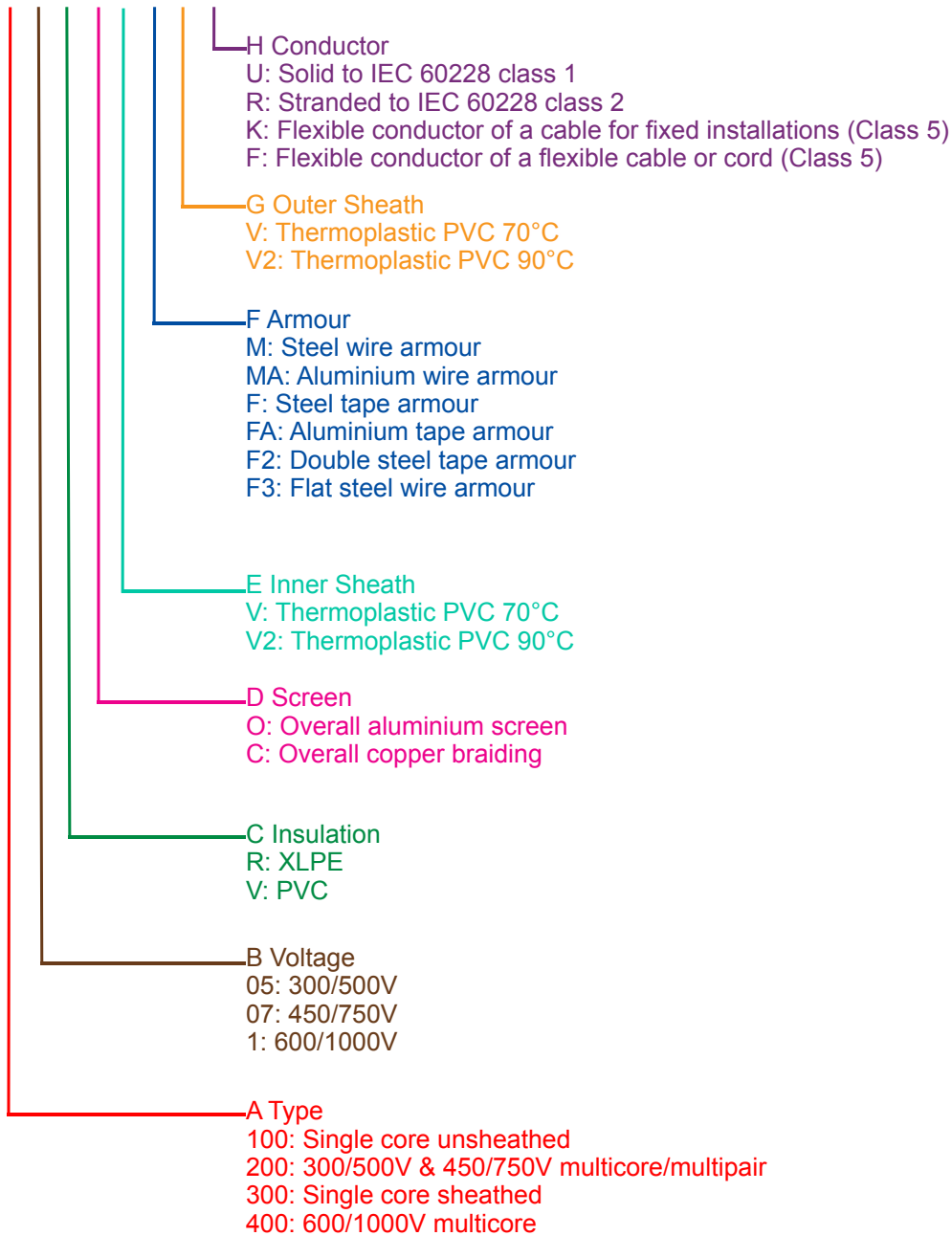


Flame Retardancy
IEC 60332-1



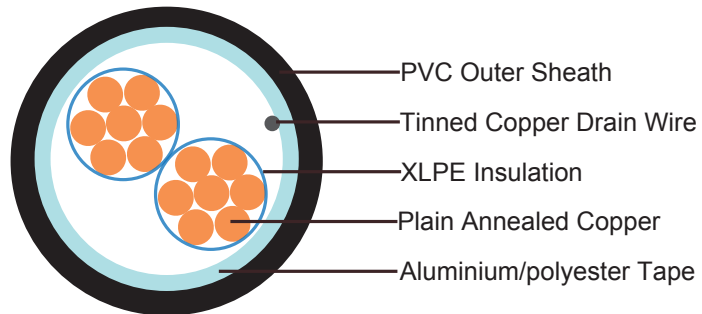
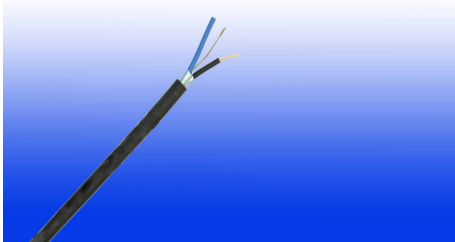
TYPE CODES FOR FLAME RETARDANT POWER & CONTROL CABLES

FGD A-B-C-D-E-F-G-H



Flame Retardant Overall Screened Instrumentation Cables (Multicore)

RE-2X(St)Y



APPLICATION

The unarmoured XLPE versions are generally use for indoor installation and suitable for wet and damp areas. Generally used within industrial process manufacturing plants for communication, data and voice transmission signals and services.

STANDARDS

Basic design to BS EN 50288-7 (formerly BS 5308)

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 60332-1-2 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

300V, 500V

CABLE CONSTRUCTION

Conductor: Plain or metal coated copper wire, solid, stranded or flexible according to IEC 60228 class 1, 2 and 5.

Insulation: Extruded XLPE compound according to EN 50290-2-29. PVC, PE, PP compound can be offered as option.

Overall Screen: Aluminium/polyester tape is applied over the laid up cores with metallic side down in contact with tinned copper drain wire, 0.5mm².

Outer Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.



COLOUR CODE

Insulation Colour: Colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting.

Outer sheath: Black. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: -30°C - +90°C

Temperature range fixed installation: -5°C - +50°C

Maximum short circuit temperature (5 Seconds): 160°C

Minimum bending radius: 7.5 x Overall Diameter

ELECTRICAL PROPERTIES

300V

| | | | | | |
|--------------------------------------|-----------------|------|-------|------|------|
| Conductor Area Size | mm ² | 0.5 | 0.75 | 1 | 1.5 |
| Insulation thickness (nominal) | mm | 0.35 | 0.38 | 0.4 | 0.45 |
| Insulation thickness (minimum) | mm | 0.26 | 0.26 | 0.26 | 0.35 |
| Conductor resistance (20°C) | Ω/km | 36.7 | 25 | 18.5 | 12.3 |
| Minimum Insulation resistance (20°C) | MΩ/km | 1000 | | | |
| Maximum Mutual Capacitance | nf/km | 250 | | | |
| Capacitance Unbalance | pf/500m | 500 | | | |
| Maximum L/R (ratio) | μH/Ω | 25 | 25 | 25 | 40 |
| Operating Voltage | V | 300 | | | |
| Dielectric Strength for 1 minute | AC | V | ≥1000 | | |
| | DC | V | ≥2000 | | |

500V

| | | | | | | |
|--------------------------------------|-----------------|------|-------|------|------|------|
| Conductor Area Size | mm ² | 0.5 | 0.75 | 1 | 1.5 | 2.5 |
| Insulation thickness (nominal) | mm | 0.55 | 0.55 | 0.55 | 0.6 | 0.7 |
| Insulation thickness (minimum) | mm | 0.44 | 0.44 | 0.44 | 0.44 | 0.53 |
| Conductor resistance (20°C) | Ω/km | 36.7 | 25 | 18.5 | 12.3 | 7.4 |
| Minimum Insulation resistance (20°C) | MΩ/km | 1000 | | | | |
| Maximum Mutual Capacitance | nf/km | 250 | | | | |
| Capacitance Unbalance | pf/500m | 500 | | | | |
| Maximum L/R (ratio) | μH/Ω | 25 | 25 | 25 | 40 | 60 |
| Operating Voltage | V | 500 | | | | |
| Dielectric Strength for 1 minute | AC | V | ≥2000 | | | |
| | DC | V | ≥3000 | | | |

CONSTRUCTION PARAMETERS

300V

| Conductor | | | | RE-2X(St)Y | |
|--------------------------------|-----------------------|------------------------------------|--------------------------------|-----------------------------|-------------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | kg/km |
| 0.5mm ² | | | | | |
| 2x0.5 | 2 | 0.35 | 0.9 | 5.4 | 45 |
| 3x0.5 | 2 | 0.35 | 0.9 | 5.6 | 48 |
| 4x0.5 | 2 | 0.35 | 0.9 | 6.0 | 57 |
| 5x0.5 | 2 | 0.35 | 0.9 | 6.5 | 67 |
| 8x0.5 | 2 | 0.35 | 1.0 | 7.8 | 89 |
| 10x0.5 | 2 | 0.35 | 1.0 | 8.8 | 119 |
| 12x0.5 | 2 | 0.35 | 1.0 | 9.0 | 141 |
| 14x0.5 | 2 | 0.35 | 1.0 | 9.5 | 151 |
| 16x0.5 | 2 | 0.35 | 1.1 | 9.9 | 167 |
| 20x0.5 | 2 | 0.35 | 1.1 | 11.2 | 206 |
| 24x0.5 | 2 | 0.35 | 1.1 | 12.3 | 255 |
| 27x0.5 | 2 | 0.35 | 1.2 | 12.5 | 260 |
| 30x0.5 | 2 | 0.35 | 1.2 | 13.1 | 294 |
| 37x0.5 | 2 | 0.35 | 1.2 | 14.1 | 342 |
| 40x0.5 | 2 | 0.35 | 1.2 | 14.7 | 340 |
| 0.75mm ² | | | | | |
| 2x0.75 | 2 | 0.38 | 0.9 | 6.5 | 49 |
| 3x0.75 | 2 | 0.38 | 0.9 | 6.9 | 60 |
| 4x0.75 | 2 | 0.38 | 0.9 | 7.4 | 71 |
| 5x0.75 | 2 | 0.38 | 0.9 | 8.1 | 92 |
| 8x0.75 | 2 | 0.38 | 1.0 | 9.7 | 120 |
| 10x0.75 | 2 | 0.38 | 1.0 | 11.1 | 148 |
| 12x0.75 | 2 | 0.38 | 1.0 | 11.5 | 174 |
| 14x0.75 | 2 | 0.38 | 1.1 | 12.2 | 189 |
| 16x0.75 | 2 | 0.38 | 1.1 | 12.9 | 212 |
| 20x0.75 | 2 | 0.38 | 1.1 | 14.3 | 269 |
| 24x0.75 | 2 | 0.38 | 1.2 | 16.0 | 306 |
| 27x0.75 | 2 | 0.38 | 1.2 | 16.3 | 342 |
| 30x0.75 | 2 | 0.38 | 1.2 | 16.9 | 373 |
| 37x0.75 | 2 | 0.38 | 1.2 | 18.2 | 444 |
| 40x0.75 | 2 | 0.38 | 1.3 | 19.1 | 483 |
| 1.0mm ² | | | | | |
| 2x1.0 | 2 | 0.4 | 0.9 | 6.3 | 59 |
| 3x1.0 | 2 | 0.4 | 0.9 | 6.7 | 68 |
| 4x1.0 | 2 | 0.4 | 0.9 | 7.2 | 82 |
| 5x1.0 | 2 | 0.4 | 0.9 | 7.8 | 105 |
| 8x1.0 | 2 | 0.4 | 1.0 | 9.3 | 151 |



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| Conductor | | | | RE-2X(St)Y | |
|--------------------------------|-----------------------|------------------------------------|--------------------------------|-----------------------------|-------------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | kg/km |
| 10x1.0 | 2 | 0.4 | 1.0 | 10.7 | 185 |
| 12x1.0 | 2 | 0.4 | 1.0 | 11.0 | 205 |
| 14x1.0 | 2 | 0.4 | 1.1 | 11.7 | 232 |
| 16x1.0 | 2 | 0.4 | 1.1 | 12.3 | 268 |
| 20x1.0 | 2 | 0.4 | 1.1 | 13.7 | 320 |
| 24x1.0 | 2 | 0.4 | 1.2 | 15.2 | 395 |
| 27x1.0 | 2 | 0.4 | 1.2 | 15.6 | 422 |
| 30x1.0 | 2 | 0.4 | 1.2 | 16.1 | 461 |
| 37x1.0 | 2 | 0.4 | 1.2 | 17.5 | 561 |
| 40x1.0 | 2 | 0.4 | 1.3 | 18.2 | 600 |
| 1.5mm ² | | | | | |
| 2x1.5 | 2 | 0.45 | 0.9 | 7.1 | 76 |
| 3x1.5 | 2 | 0.45 | 0.9 | 7.5 | 95 |
| 4x1.5 | 2 | 0.45 | 0.9 | 8.1 | 116 |
| 5x1.5 | 2 | 0.45 | 1.0 | 9.0 | 148 |
| 8x1.5 | 2 | 0.45 | 1.0 | 10.6 | 211 |
| 10x1.5 | 2 | 0.45 | 1.1 | 12.5 | 259 |
| 12x1.5 | 2 | 0.45 | 1.1 | 12.9 | 304 |
| 14x1.5 | 2 | 0.45 | 1.1 | 13.5 | 328 |
| 16x1.5 | 2 | 0.45 | 1.1 | 14.2 | 377 |
| 20x1.5 | 2 | 0.45 | 1.2 | 16.1 | 466 |
| 24x1.5 | 2 | 0.45 | 1.3 | 17.8 | 557 |
| 27x1.5 | 2 | 0.45 | 1.3 | 18.3 | 601 |
| 30x1.5 | 2 | 0.45 | 1.3 | 18.9 | 657 |
| 37x1.5 | 2 | 0.45 | 1.4 | 20.5 | 800 |
| 40x1.5 | 2 | 0.45 | 1.4 | 21.4 | 861 |

500V

| Conductor | | | | RE-2X(St)Y | |
|--------------------------------|-----------------------|------------------------------------|--------------------------------|-----------------------------|-------------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | kg/km |
| 0.5mm ² | | | | | |
| 2x0.5 | 2 | 0.55 | 0.9 | 6.2 | 47 |
| 3x0.5 | 2 | 0.55 | 0.9 | 6.5 | 50 |
| 4x0.5 | 2 | 0.55 | 0.9 | 7.0 | 60 |
| 5x0.5 | 2 | 0.55 | 0.9 | 7.6 | 71 |
| 8x0.5 | 2 | 0.55 | 1.0 | 9.1 | 95 |
| 10x0.5 | 2 | 0.55 | 1.0 | 10.4 | 127 |
| 12x0.5 | 2 | 0.55 | 1.0 | 10.7 | 151 |

| Conductor | | | | RE-2X(St)Y | |
|--------------------------------|-----------------------|------------------------------------|--------------------------------|-----------------------------|-------------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | kg/km |
| 14x0.5 | 2 | 0.55 | 1.0 | 11.3 | 162 |
| 16x0.5 | 2 | 0.55 | 1.1 | 11.8 | 180 |
| 20x0.5 | 2 | 0.55 | 1.1 | 13.3 | 222 |
| 24x0.5 | 2 | 0.55 | 1.1 | 14.7 | 274 |
| 27x0.5 | 2 | 0.55 | 1.2 | 15.0 | 282 |
| 30x0.5 | 2 | 0.55 | 1.2 | 15.7 | 318 |
| 37x0.5 | 2 | 0.55 | 1.2 | 16.9 | 372 |
| 40x0.5 | 2 | 0.55 | 1.2 | 17.6 | 372 |
| 0.75mm ² | | | | | |
| 2x0.75 | 2 | 0.55 | 0.9 | 6.5 | 51 |
| 3x0.75 | 2 | 0.55 | 0.9 | 6.9 | 62 |
| 4x0.75 | 2 | 0.55 | 0.9 | 7.4 | 74 |
| 5x0.75 | 2 | 0.55 | 0.9 | 8.1 | 96 |
| 8x0.75 | 2 | 0.55 | 1.0 | 9.7 | 126 |
| 10x0.75 | 2 | 0.55 | 1.0 | 11.1 | 156 |
| 12x0.75 | 2 | 0.55 | 1.0 | 11.5 | 183 |
| 14x0.75 | 2 | 0.55 | 1.1 | 12.2 | 200 |
| 16x0.75 | 2 | 0.55 | 1.1 | 12.9 | 224 |
| 20x0.75 | 2 | 0.55 | 1.1 | 14.3 | 284 |
| 24x0.75 | 2 | 0.55 | 1.2 | 16.0 | 324 |
| 27x0.75 | 2 | 0.55 | 1.2 | 16.3 | 363 |
| 30x0.75 | 2 | 0.55 | 1.2 | 16.9 | 396 |
| 37x0.75 | 2 | 0.55 | 1.2 | 18.2 | 472 |
| 40x0.75 | 2 | 0.55 | 1.3 | 19.1 | 514 |
| 1.0mm ² | | | | | |
| 2x1.0 | 2 | 0.55 | 0.9 | 6.9 | 61 |
| 3x1.0 | 2 | 0.55 | 0.9 | 7.3 | 70 |
| 4x1.0 | 2 | 0.55 | 0.9 | 7.9 | 85 |
| 5x1.0 | 2 | 0.55 | 0.9 | 8.6 | 109 |
| 8x1.0 | 2 | 0.55 | 1.0 | 10.3 | 157 |
| 10x1.0 | 2 | 0.55 | 1.0 | 11.9 | 193 |
| 12x1.0 | 2 | 0.55 | 1.0 | 12.2 | 214 |
| 14x1.0 | 2 | 0.55 | 1.1 | 13.0 | 243 |
| 16x1.0 | 2 | 0.55 | 1.1 | 13.7 | 280 |
| 20x1.0 | 2 | 0.55 | 1.1 | 15.2 | 336 |
| 24x1.0 | 2 | 0.55 | 1.2 | 17.0 | 414 |
| 27x1.0 | 2 | 0.55 | 1.2 | 17.4 | 443 |
| 30x1.0 | 2 | 0.55 | 1.2 | 18.0 | 484 |
| 37x1.0 | 2 | 0.55 | 1.2 | 19.6 | 590 |
| 40x1.0 | 2 | 0.55 | 1.3 | 20.4 | 631 |



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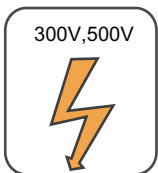
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| Conductor | | | | RE-2X(St)Y | |
|--------------------------------|-----------------------|------------------------------------|--------------------------------|-----------------------------|-------------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | | mm | mm | mm | kg/km |
| 1.5mm² | | | | | |
| 2x1.5 | 2 | 0.6 | 0.9 | 7.7 | 78 |
| 3x1.5 | 2 | 0.6 | 0.9 | 8.1 | 98 |
| 4x1.5 | 2 | 0.6 | 0.9 | 8.8 | 120 |
| 5x1.5 | 2 | 0.6 | 1.0 | 9.8 | 153 |
| 8x1.5 | 2 | 0.6 | 1.0 | 11.6 | 218 |
| 10x1.5 | 2 | 0.6 | 1.1 | 13.7 | 268 |
| 12x1.5 | 2 | 0.6 | 1.1 | 14.1 | 315 |
| 14x1.5 | 2 | 0.6 | 1.1 | 14.8 | 341 |
| 16x1.5 | 2 | 0.6 | 1.1 | 15.6 | 392 |
| 20x1.5 | 2 | 0.6 | 1.2 | 17.6 | 484 |
| 24x1.5 | 2 | 0.6 | 1.3 | 19.6 | 579 |
| 27x1.5 | 2 | 0.6 | 1.3 | 20.1 | 626 |
| 30x1.5 | 2 | 0.6 | 1.3 | 20.8 | 685 |
| 37x1.5 | 2 | 0.6 | 1.4 | 22.6 | 834 |
| 40x1.5 | 2 | 0.6 | 1.4 | 23.6 | 898 |
| 2.5mm² | | | | | |
| 2x2.5 | 2 | 0.7 | 0.9 | 8.9 | 111 |
| 3x2.5 | 2 | 0.7 | 1.0 | 9.7 | 132 |
| 4x2.5 | 2 | 0.7 | 1.0 | 10.5 | 169 |
| 5x2.5 | 2 | 0.7 | 1.0 | 11.9 | 209 |
| 8x2.5 | 2 | 0.7 | 1.1 | 13.9 | 321 |
| 10x2.5 | 2 | 0.7 | 1.2 | 16.3 | 386 |
| 12x2.5 | 2 | 0.7 | 1.2 | 16.9 | 447 |
| 14x2.5 | 2 | 0.7 | 1.2 | 17.7 | 509 |
| 16x2.5 | 2 | 0.7 | 1.3 | 18.9 | 585 |
| 20x2.5 | 2 | 0.7 | 1.3 | 21.1 | 712 |
| 24x2.5 | 2 | 0.7 | 1.4 | 23.6 | 855 |
| 27x2.5 | 2 | 0.7 | 1.4 | 24.1 | 956 |
| 30x2.5 | 2 | 0.7 | 1.5 | 25.2 | 1049 |
| 37x2.5 | 2 | 0.7 | 1.5 | 27.2 | 1277 |
| 40x2.5 | 2 | 0.7 | 1.6 | 28.5 | 1370 |

Note : Other conductor sizes & core configurations are available upon request.



300V,500V

Rated Voltage



EN 50288-7
formerly BS 5308

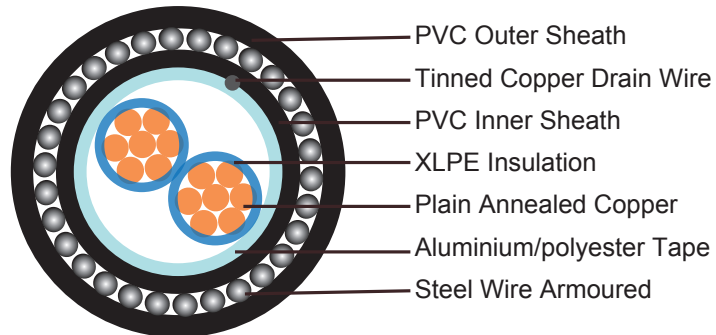
Standard



Flame Retardancy
BS EN 60332-1-2

Flame Retardant Overall Screened, Armoured Instrumentation Cables (Multicore)

RE-2X(St)YSWAY



APPLICATION

The armoured XLPE versions are generally used when the risk of mechanical damage is increased. The galvanized steel wire armour provides excellent protection. Generally used within industrial process manufacturing plants for communication, data and voice transmission signals and services.

STANDARDS

Basic design to BS EN 50288-7 (formerly BS 5308)

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 60332-1-2 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

500V

CABLE CONSTRUCTION

Conductor: Plain or metal coated copper wire, solid, stranded or flexible according to IEC 60228 class 1, 2 and 5.

Insulation: Extruded XLPE compound according to EN 50290-2-29. PVC, PE, PP compound can be offered as option.

Overall Screen: Aluminium/polyester tape is applied over the laid up cores with metallic side down in contact with tinned copper drain wire, 0.5mm².

Inner Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Armouring: Galvanised steel wire.

Outer Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.



COLOUR CODE

Insulation Colour: Colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting.

Outer sheath: Black. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: -30°C - +90°C

Temperature range fixed installation: -5°C - +50°C

Maximum short circuit temperature (5 Seconds): 160°C

Minimum bending radius: 10 x Overall Diameter

ELECTRICAL PROPERTIES

300V

| | | | | | |
|--------------------------------------|-----------------|------|-------|------|------|
| Conductor Area Size | mm ² | 0.5 | 0.75 | 1 | 1.5 |
| Insulation thickness (nominal) | mm | 0.35 | 0.38 | 0.4 | 0.45 |
| Insulation thickness (minimum) | mm | 0.26 | 0.26 | 0.26 | 0.35 |
| Conductor resistance (20°C) | Ω/km | 36.7 | 25 | 18.5 | 12.3 |
| Minimum Insulation resistance (20°C) | MΩ/km | 1000 | | | |
| Maximum Mutual Capacitance | nf/km | 250 | | | |
| Capacitance Unbalance | pf/500m | 500 | | | |
| Maximum L/R (ratio) | μH/Ω | 25 | 25 | 25 | 40 |
| Operating Voltage | V | 300 | | | |
| Dielectric Strength for 1 minute | AC | V | ≥1000 | | |
| | DC | V | ≥2000 | | |

500V

| | | | | | | |
|--------------------------------------|-----------------|------|-------|------|------|------|
| Conductor Area Size | mm ² | 0.5 | 0.75 | 1 | 1.5 | 2.5 |
| Insulation thickness (nominal) | mm | 0.55 | 0.55 | 0.55 | 0.6 | 0.7 |
| Insulation thickness (minimum) | mm | 0.44 | 0.44 | 0.44 | 0.44 | 0.53 |
| Conductor resistance (20°C) | Ω/km | 36.7 | 25 | 18.5 | 12.3 | 7.4 |
| Minimum Insulation resistance (20°C) | MΩ/km | 1000 | | | | |
| Maximum Mutual Capacitance | nf/km | 250 | | | | |
| Capacitance Unbalance | pf/500m | 500 | | | | |
| Maximum L/R (ratio) | μH/Ω | 25 | 25 | 25 | 40 | 60 |
| Operating Voltage | V | 500 | | | | |
| Dielectric Strength for 1 minute | AC | V | ≥2000 | | | |
| | DC | V | ≥3000 | | | |

CONSTRUCTION PARAMETERS

300V

| Conductor | | RE-2X(St)YSWAY | | | | | |
|--------------------------------|-----------------------|------------------------------------|-----------------------------------------|---------------------------------------|-----------------------------------------|--------------------------------|-------------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | No./mm | mm | mm | mm | mm | mm | kg/km |
| 0.5mm ² | | | | | | | |
| 2x0.5 | 2 | 0.35 | 0.9 | 0.9 | 1.3 | 9.8 | 208 |
| 3x0.5 | 2 | 0.35 | 0.9 | 0.9 | 1.3 | 10.0 | 228 |
| 4x0.5 | 2 | 0.35 | 0.9 | 0.9 | 1.3 | 10.4 | 250 |
| 5x0.5 | 2 | 0.35 | 0.9 | 0.9 | 1.3 | 10.9 | 279 |
| 8x0.5 | 2 | 0.35 | 1.0 | 0.9 | 1.4 | 12.4 | 338 |
| 10x0.5 | 2 | 0.35 | 1.0 | 0.9 | 1.4 | 13.4 | 391 |
| 12x0.5 | 2 | 0.35 | 1.0 | 0.9 | 1.4 | 13.6 | 432 |
| 14x0.5 | 2 | 0.35 | 1.0 | 0.9 | 1.4 | 14.1 | 463 |
| 16x0.5 | 2 | 0.35 | 1.1 | 0.9 | 1.4 | 14.5 | 492 |
| 20x0.5 | 2 | 0.35 | 1.1 | 0.9 | 1.5 | 16.0 | 553 |
| 24x0.5 | 2 | 0.35 | 1.1 | 0.9 | 1.5 | 17.1 | 623 |
| 27x0.5 | 2 | 0.35 | 1.2 | 0.9 | 1.5 | 17.3 | 786 |
| 30x0.5 | 2 | 0.35 | 1.2 | 0.9 | 1.5 | 17.9 | 824 |
| 37x0.5 | 2 | 0.35 | 1.2 | 0.9 | 1.6 | 19.1 | 933 |
| 40x0.5 | 2 | 0.35 | 1.2 | 1.25 | 1.6 | 20.4 | 982 |
| 0.75mm ² | | | | | | | |
| 2x0.75 | 2 | 0.38 | 0.9 | 0.9 | 1.3 | 10.9 | 228 |
| 3x0.75 | 2 | 0.38 | 0.9 | 0.9 | 1.3 | 11.3 | 245 |
| 4x0.75 | 2 | 0.38 | 0.9 | 0.9 | 1.3 | 11.8 | 275 |
| 5x0.75 | 2 | 0.38 | 0.9 | 0.9 | 1.4 | 12.7 | 318 |
| 8x0.75 | 2 | 0.38 | 1.0 | 0.9 | 1.4 | 14.3 | 377 |
| 10x0.75 | 2 | 0.38 | 1.0 | 0.9 | 1.4 | 15.7 | 453 |
| 12x0.75 | 2 | 0.38 | 1.0 | 0.9 | 1.4 | 16.1 | 468 |
| 14x0.75 | 2 | 0.38 | 1.1 | 0.9 | 1.5 | 17.0 | 516 |
| 16x0.75 | 2 | 0.38 | 1.1 | 0.9 | 1.5 | 17.7 | 560 |
| 20x0.75 | 2 | 0.38 | 1.1 | 0.9 | 1.5 | 19.1 | 654 |
| 24x0.75 | 2 | 0.38 | 1.2 | 0.9 | 1.5 | 20.8 | 859 |
| 27x0.75 | 2 | 0.38 | 1.2 | 0.9 | 1.6 | 21.3 | 908 |
| 30x0.75 | 2 | 0.38 | 1.2 | 0.9 | 1.6 | 21.9 | 963 |



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| Conductor | | RE-2X(St)YSWAY | | | | | |
|-----------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | No./mm | mm | mm | mm | mm | mm | kg/km |
| 37x0.75 | 2 | 0.38 | 1.2 | 1.25 | 1.6 | 23.9 | 1074 |
| 40x0.75 | 2 | 0.38 | 1.3 | 1.25 | 1.6 | 24.8 | 1150 |
| 1.0mm ² | | | | | | | |
| 2x1.0 | 2 | 0.4 | 0.9 | 0.9 | 1.3 | 11.3 | 245 |
| 3x1.0 | 2 | 0.4 | 0.9 | 0.9 | 1.3 | 11.7 | 268 |
| 4x1.0 | 2 | 0.4 | 0.9 | 0.9 | 1.4 | 12.5 | 296 |
| 5x1.0 | 2 | 0.4 | 0.9 | 0.9 | 1.4 | 13.2 | 338 |
| 8x1.0 | 2 | 0.4 | 1.0 | 0.9 | 1.4 | 14.9 | 418 |
| 10x1.0 | 2 | 0.4 | 1.0 | 0.9 | 1.4 | 16.5 | 506 |
| 12x1.0 | 2 | 0.4 | 1.0 | 0.9 | 1.5 | 17.0 | 539 |
| 14x1.0 | 2 | 0.4 | 1.1 | 0.9 | 1.5 | 17.8 | 579 |
| 16x1.0 | 2 | 0.4 | 1.1 | 0.9 | 1.5 | 18.5 | 637 |
| 20x1.0 | 2 | 0.4 | 1.1 | 0.9 | 1.5 | 20.0 | 848 |
| 24x1.0 | 2 | 0.4 | 1.2 | 0.9 | 1.6 | 22.0 | 986 |
| 27x1.0 | 2 | 0.4 | 1.2 | 1.25 | 1.6 | 23.1 | 1037 |
| 30x1.0 | 2 | 0.4 | 1.2 | 1.25 | 1.6 | 23.7 | 1090 |
| 37x1.0 | 2 | 0.4 | 1.2 | 1.25 | 1.6 | 25.3 | 1242 |
| 40x1.0 | 2 | 0.4 | 1.3 | 1.25 | 1.7 | 26.3 | 1320 |
| 1.5mm ² | | | | | | | |
| 2x1.5 | 2 | 0.45 | 0.9 | 0.9 | 1.3 | 12.1 | 277 |
| 3x1.5 | 2 | 0.45 | 0.9 | 0.9 | 1.4 | 12.7 | 319 |
| 4x1.5 | 2 | 0.45 | 0.9 | 0.9 | 1.4 | 13.4 | 343 |
| 5x1.5 | 2 | 0.45 | 1.0 | 0.9 | 1.4 | 14.4 | 387 |
| 8x1.5 | 2 | 0.45 | 1.0 | 0.9 | 1.4 | 16.2 | 511 |
| 10x1.5 | 2 | 0.45 | 1.1 | 0.9 | 1.5 | 18.5 | 605 |
| 12x1.5 | 2 | 0.45 | 1.1 | 0.9 | 1.5 | 18.9 | 659 |
| 14x1.5 | 2 | 0.45 | 1.1 | 0.9 | 1.5 | 19.6 | 729 |
| 16x1.5 | 2 | 0.45 | 1.1 | 0.9 | 1.5 | 20.4 | 910 |
| 20x1.5 | 2 | 0.45 | 1.2 | 1.25 | 1.6 | 23.3 | 1044 |
| 24x1.5 | 2 | 0.45 | 1.3 | 1.25 | 1.6 | 25.3 | 1196 |
| 27x1.5 | 2 | 0.45 | 1.3 | 1.25 | 1.6 | 25.8 | 1264 |
| 30x1.5 | 2 | 0.45 | 1.3 | 1.25 | 1.7 | 26.7 | 1390 |
| 37x1.5 | 2 | 0.45 | 1.4 | 1.25 | 1.7 | 28.5 | 1552 |
| 40x1.5 | 2 | 0.45 | 1.4 | 1.25 | 1.7 | 29.5 | 1650 |

500V

| Conductor | | RE-2X(St)YSWAY | | | | | |
|-----------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | No./mm | mm | mm | mm | mm | mm | kg/km |
| 0.5mm ² | | | | | | | |
| 2x0.5 | 2 | 0.55 | 0.9 | 0.9 | 1.3 | 10.6 | 210 |
| 3x0.5 | 2 | 0.55 | 0.9 | 0.9 | 1.3 | 10.9 | 230 |
| 4x0.5 | 2 | 0.55 | 0.9 | 0.9 | 1.3 | 11.4 | 253 |
| 5x0.5 | 2 | 0.55 | 0.9 | 0.9 | 1.3 | 12.0 | 283 |
| 8x0.5 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 13.7 | 344 |
| 10x0.5 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 15.0 | 399 |
| 12x0.5 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 15.3 | 442 |
| 14x0.5 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 15.9 | 474 |
| 16x0.5 | 2 | 0.55 | 1.1 | 0.9 | 1.4 | 16.4 | 505 |
| 20x0.5 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 18.1 | 569 |
| 24x0.5 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 19.5 | 642 |
| 27x0.5 | 2 | 0.55 | 1.2 | 0.9 | 1.5 | 19.8 | 808 |
| 30x0.5 | 2 | 0.55 | 1.2 | 0.9 | 1.5 | 20.5 | 848 |
| 37x0.5 | 2 | 0.55 | 1.2 | 0.9 | 1.6 | 21.9 | 963 |
| 40x0.5 | 2 | 0.55 | 1.2 | 1.25 | 1.6 | 23.3 | 1014 |
| 0.75mm ² | | | | | | | |
| 2x0.75 | 2 | 0.55 | 0.9 | 0.9 | 1.3 | 10.9 | 230 |
| 3x0.75 | 2 | 0.55 | 0.9 | 0.9 | 1.3 | 11.3 | 247 |
| 4x0.75 | 2 | 0.55 | 0.9 | 0.9 | 1.3 | 11.8 | 278 |
| 5x0.75 | 2 | 0.55 | 0.9 | 0.9 | 1.4 | 12.7 | 322 |
| 8x0.75 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 14.3 | 383 |
| 10x0.75 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 15.7 | 461 |
| 12x0.75 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 16.1 | 477 |
| 14x0.75 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 17.0 | 527 |
| 16x0.75 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 17.7 | 572 |
| 20x0.75 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 19.1 | 669 |
| 24x0.75 | 2 | 0.55 | 1.2 | 0.9 | 1.5 | 20.8 | 877 |
| 27x0.75 | 2 | 0.55 | 1.2 | 0.9 | 1.6 | 21.3 | 929 |
| 30x0.75 | 2 | 0.55 | 1.2 | 0.9 | 1.6 | 21.9 | 986 |
| 37x0.75 | 2 | 0.55 | 1.2 | 1.25 | 1.6 | 23.9 | 1102 |



Caledonian

Flame Retardant Instrumentation Cables

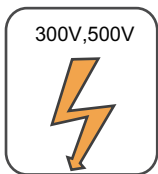
www.caledonian-cables.co.uk www.addison-cables.com



| Conductor | | RE-2X(St)YSWAY | | | | | |
|-----------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | No./mm | mm | mm | mm | mm | mm | kg/km |
| 40x0.75 | 2 | 0.55 | 1.3 | 1.25 | 1.6 | 24.8 | 1181 |
| 1.0mm ² | | | | | | | |
| 2x1.0 | 2 | 0.55 | 0.9 | 0.9 | 1.3 | 11.3 | 247 |
| 3x1.0 | 2 | 0.55 | 0.9 | 0.9 | 1.3 | 11.7 | 270 |
| 4x1.0 | 2 | 0.55 | 0.9 | 0.9 | 1.4 | 12.5 | 299 |
| 5x1.0 | 2 | 0.55 | 0.9 | 0.9 | 1.4 | 13.2 | 342 |
| 8x1.0 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 14.9 | 424 |
| 10x1.0 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 16.5 | 514 |
| 12x1.0 | 2 | 0.55 | 1.0 | 0.9 | 1.5 | 17.0 | 548 |
| 14x1.0 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 17.8 | 590 |
| 16x1.0 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 18.5 | 649 |
| 20x1.0 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 20.0 | 864 |
| 24x1.0 | 2 | 0.55 | 1.2 | 0.9 | 1.6 | 22.0 | 1005 |
| 27x1.0 | 2 | 0.55 | 1.2 | 1.25 | 1.6 | 23.1 | 1058 |
| 30x1.0 | 2 | 0.55 | 1.2 | 1.25 | 1.6 | 23.7 | 1113 |
| 37x1.0 | 2 | 0.55 | 1.2 | 1.25 | 1.6 | 25.3 | 1271 |
| 40x1.0 | 2 | 0.55 | 1.3 | 1.25 | 1.7 | 26.3 | 1351 |
| 1.5mm ² | | | | | | | |
| 2x1.5 | 2 | 0.6 | 0.9 | 0.9 | 1.3 | 12.1 | 279 |
| 3x1.5 | 2 | 0.6 | 0.9 | 0.9 | 1.4 | 12.7 | 322 |
| 4x1.5 | 2 | 0.6 | 0.9 | 0.9 | 1.4 | 13.4 | 347 |
| 5x1.5 | 2 | 0.6 | 1.0 | 0.9 | 1.4 | 14.4 | 392 |
| 8x1.5 | 2 | 0.6 | 1.0 | 0.9 | 1.4 | 16.2 | 518 |
| 10x1.5 | 2 | 0.6 | 1.1 | 0.9 | 1.5 | 18.5 | 614 |
| 12x1.5 | 2 | 0.6 | 1.1 | 0.9 | 1.5 | 18.9 | 670 |
| 14x1.5 | 2 | 0.6 | 1.1 | 0.9 | 1.5 | 19.6 | 742 |
| 16x1.5 | 2 | 0.6 | 1.1 | 0.9 | 1.5 | 20.4 | 925 |
| 20x1.5 | 2 | 0.6 | 1.2 | 1.25 | 1.6 | 23.3 | 1062 |
| 24x1.5 | 2 | 0.6 | 1.3 | 1.25 | 1.6 | 25.3 | 1218 |
| 27x1.5 | 2 | 0.6 | 1.3 | 1.25 | 1.6 | 25.8 | 1289 |
| 30x1.5 | 2 | 0.6 | 1.3 | 1.25 | 1.7 | 26.7 | 1418 |
| 37x1.5 | 2 | 0.6 | 1.4 | 1.25 | 1.7 | 28.5 | 1586 |

| Conductor | | RE-2X(St)YSWAY | | | | | |
|-----------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Core X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| mm ² | No./mm | mm | mm | mm | mm | mm | kg/km |
| 40x1.5 | 2 | 0.6 | 1.4 | 1.25 | 1.7 | 29.5 | 1687 |
| 2.5mm ² | | | | | | | |
| 2x2.5 | 2 | 0.7 | 0.9 | 0.9 | 1.4 | 13.5 | 364 |
| 3x2.5 | 2 | 0.7 | 1.0 | 0.9 | 1.4 | 14.3 | 389 |
| 4x2.5 | 2 | 0.7 | 1.0 | 0.9 | 1.4 | 15.1 | 430 |
| 5x2.5 | 2 | 0.7 | 1.0 | 0.9 | 1.4 | 16.5 | 547 |
| 8x2.5 | 2 | 0.7 | 1.1 | 0.9 | 1.5 | 18.7 | 684 |
| 10x2.5 | 2 | 0.7 | 1.2 | 0.9 | 1.6 | 21.3 | 952 |
| 12x2.5 | 2 | 0.7 | 1.2 | 0.9 | 1.6 | 21.9 | 1012 |
| 14x2.5 | 2 | 0.7 | 1.2 | 1.25 | 1.6 | 23.4 | 1126 |
| 16x2.5 | 2 | 0.7 | 1.3 | 1.25 | 1.6 | 24.6 | 1252 |
| 20x2.5 | 2 | 0.7 | 1.3 | 1.25 | 1.7 | 27.0 | 1456 |
| 24x2.5 | 2 | 0.7 | 1.4 | 1.25 | 1.7 | 29.5 | 1644 |
| 27x2.5 | 2 | 0.7 | 1.4 | 1.25 | 1.8 | 30.2 | 1811 |
| 30x2.5 | 2 | 0.7 | 1.5 | 1.25 | 1.8 | 31.3 | 2154 |
| 37x2.5 | 2 | 0.7 | 1.5 | 1.25 | 1.8 | 33.3 | 2477 |
| 40x2.5 | 2 | 0.7 | 1.6 | 1.25 | 1.9 | 34.8 | 2614 |

Note : Other conductor sizes & core configurations are available upon request.



Rated Voltage



Standard

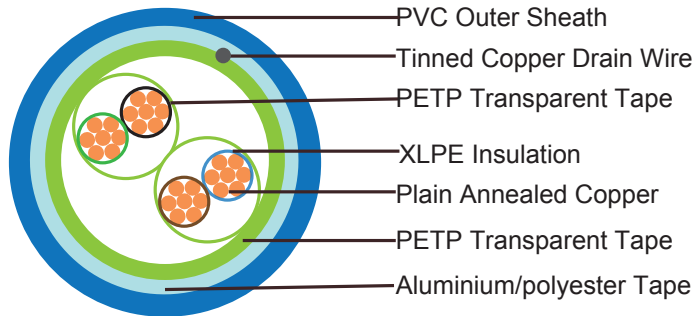


Flame Retardancy
BS EN 60332-1-2



Flame Retardant Overall Screened Instrumentation Cables (Multipair)

RE-2X(St)Y



APPLICATION

The unarmoured XLPE versions are generally use for indoor installation and suitable for wet and damp areas. Generally used within industrial process manufacturing plants for communication, data and voice transmission signals and services.

STANDARDS

Basic design to BS EN 50288-7 (formerly BS 5308)

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 60332-1-2 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

300V, 500V

CABLE CONSTRUCTION

Conductor: Plain or metal coated copper wire, solid, stranded or flexible according to IEC 60228 class 1, 2 and 5.

Insulation: Extruded XLPE compound according to EN 50290-2-29. PVC, PE, PP compound can be offered as option.

Pairs: Two insulated conductors uniformly twisted together with a lay not exceeding 100mm ($\leq 1.5\text{mm}^2$) nor 150mm (for 2.5mm^2).

Binder tape: PETP transparent tape

Overall Screen: Aluminium/polyester tape is applied over the laid up pairs with metallic side down in contact with tinned copper drain wire, 0.5mm^2 .

Outer Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting.

Outer sheath: Black. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: 30°C - +90°C

Temperature range fixed installation: -5°C - +50°C

Maximum short circuit temperature (5 Seconds): 160°C

Minimum bending radius: 7.5 x Overall Diameter

ELECTRICAL PROPERTIES

300V

| | | | | | |
|--------------------------------------|-----------------|------|-------|------|------|
| Conductor Area Size | mm ² | 0.5 | 0.75 | 1 | 1.5 |
| Insulation thickness (nominal) | mm | 0.35 | 0.38 | 0.4 | 0.45 |
| Insulation thickness (minimum) | mm | 0.26 | 0.26 | 0.26 | 0.35 |
| Conductor resistance (20°C) | Ω/km | 36.7 | 25 | 18.5 | 12.3 |
| Minimum Insulation resistance (20°C) | MΩ/km | 1000 | | | |
| Maximum Mutual Capacitance | nf/km | 250 | | | |
| Capacitance Unbalance | pf/500m | 500 | | | |
| Maximum L/R (ratio) | μH/Ω | 25 | 25 | 25 | 40 |
| Operating Voltage | V | 300 | | | |
| Dielectric Strength for 1 minute | AC | V | ≥1000 | | |
| | DC | V | ≥2000 | | |

500V

| | | | | | | |
|--------------------------------------|-----------------|------|-------|------|------|------|
| Conductor Area Size | mm ² | 0.5 | 0.75 | 1 | 1.5 | 2.5 |
| Insulation thickness (nominal) | mm | 0.55 | 0.55 | 0.55 | 0.6 | 0.7 |
| Insulation thickness (minimum) | mm | 0.44 | 0.44 | 0.44 | 0.44 | 0.53 |
| Conductor resistance (20°C) | Ω/km | 36.7 | 25 | 18.5 | 12.3 | 7.4 |
| Minimum Insulation resistance (20°C) | MΩ/km | 1000 | | | | |
| Maximum Mutual Capacitance | nf/km | 250 | | | | |
| Capacitance Unbalance | pf/500m | 500 | | | | |
| Maximum L/R (ratio) | μH/Ω | 25 | 25 | 25 | 40 | 60 |
| Operating Voltage | V | 500 | | | | |
| Dielectric Strength for 1 minute | AC | V | ≥2000 | | | |
| | DC | V | ≥3000 | | | |



CONSTRUCTION PARAMETERS

300V

| Conductor | | RE-2X(St)Y | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | kg/km |
| 0.5mm ² | | | | | |
| 2x2x0.5 | 2 | 0.35 | 0.9 | 7.6 | 66 |
| 3x2x0.5 | 2 | 0.35 | 0.9 | 8.8 | 98 |
| 4x2x0.5 | 2 | 0.35 | 1.0 | 9.8 | 112 |
| 5x2x0.5 | 2 | 0.35 | 1.0 | 10.6 | 133 |
| 8x2x0.5 | 2 | 0.35 | 1.0 | 11.3 | 161 |
| 10x2x0.5 | 2 | 0.35 | 1.1 | 12.9 | 200 |
| 12x2x0.5 | 2 | 0.35 | 1.1 | 13.5 | 242 |
| 16x2x0.5 | 2 | 0.35 | 1.1 | 15.2 | 288 |
| 20x2x0.5 | 2 | 0.35 | 1.2 | 16.9 | 376 |
| 24x2x0.5 | 2 | 0.35 | 1.2 | 18.3 | 426 |
| 0.75mm ² | | | | | |
| 2x2x0.75 | 2 | 0.38 | 0.9 | 8.5 | 87 |
| 3x2x0.75 | 2 | 0.38 | 1.0 | 10 | 122 |
| 4x2x0.75 | 2 | 0.38 | 1.0 | 10.9 | 154 |
| 5x2x0.75 | 2 | 0.38 | 1.0 | 11.8 | 174 |
| 8x2x0.75 | 2 | 0.38 | 1.1 | 12.8 | 213 |
| 10x2x0.75 | 2 | 0.38 | 1.1 | 14.5 | 266 |
| 12x2x0.75 | 2 | 0.38 | 1.1 | 15.1 | 304 |
| 16x2x0.75 | 2 | 0.38 | 1.2 | 17.3 | 398 |
| 20x2x0.75 | 2 | 0.38 | 1.3 | 19.2 | 478 |
| 24x2x0.75 | 2 | 0.38 | 1.3 | 20.8 | 559 |
| 1.0mm ² | | | | | |
| 2x2x1.0 | 2 | 0.4 | 0.9 | 9.2 | 101 |
| 3x2x1.0 | 2 | 0.4 | 1.0 | 10.9 | 157 |
| 4x2x1.0 | 2 | 0.4 | 1.0 | 11.9 | 194 |
| 5x2x1.0 | 2 | 0.4 | 1.0 | 13 | 223 |
| 8x2x1.0 | 2 | 0.4 | 1.1 | 14 | 272 |
| 10x2x1.0 | 2 | 0.4 | 1.1 | 15.9 | 334 |
| 12x2x1.0 | 2 | 0.4 | 1.2 | 16.8 | 390 |
| 16x2x1.0 | 2 | 0.4 | 1.2 | 19 | 511 |
| 20x2x1.0 | 2 | 0.4 | 1.3 | 21.1 | 617 |
| 24x2x1.0 | 2 | 0.4 | 1.4 | 23.1 | 749 |
| 1.5mm ² | | | | | |
| 2x2x1.5 | 2 | 0.45 | 1.0 | 10.8 | 139 |

| Conductor | | RE-2X(St)Y | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No.×2×mm ² | | mm | mm | mm | kg/km |
| 3x2x1.5 | 2 | 0.45 | 1.1 | 12.7 | 214 |
| 4x2x1.5 | 2 | 0.45 | 1.1 | 14.0 | 259 |
| 5x2x1.5 | 2 | 0.45 | 1.2 | 15.2 | 305 |
| 8x2x1.5 | 2 | 0.45 | 1.2 | 16.4 | 385 |
| 10x2x1.5 | 2 | 0.45 | 1.3 | 18.8 | 460 |
| 12x2x1.5 | 2 | 0.45 | 1.3 | 19.7 | 558 |
| 16x2x1.5 | 2 | 0.45 | 1.4 | 22.5 | 725 |
| 20x2x1.5 | 2 | 0.45 | 1.5 | 25.0 | 881 |
| 24x2x1.5 | 2 | 0.45 | 1.5 | 27.1 | 1047 |

500V

| Conductor | | RE-2X(St)Y | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No.×2×mm ² | | mm | mm | mm | kg/km |
| 0.5mm ² | | | | | |
| 2x2x0.5 | 2 | 0.55 | 0.9 | 8.9 | 69 |
| 3x2x0.5 | 2 | 0.55 | 0.9 | 10.2 | 103 |
| 4x2x0.5 | 2 | 0.55 | 1.0 | 11.4 | 118 |
| 5x2x0.5 | 2 | 0.55 | 1.0 | 12.4 | 141 |
| 8x2x0.5 | 2 | 0.55 | 1.0 | 13.5 | 174 |
| 10x2x0.5 | 2 | 0.55 | 1.1 | 15.5 | 216 |
| 12x2x0.5 | 2 | 0.55 | 1.1 | 16.2 | 261 |
| 16x2x0.5 | 2 | 0.55 | 1.1 | 18.3 | 314 |
| 20x2x0.5 | 2 | 0.55 | 1.2 | 20.3 | 408 |
| 24x2x0.5 | 2 | 0.55 | 1.2 | 22.2 | 464 |
| 0.75mm ² | | | | | |
| 2x2x0.75 | 2 | 0.55 | 0.9 | 9.6 | 90 |
| 3x2x0.75 | 2 | 0.55 | 1.0 | 11.2 | 127 |
| 4x2x0.75 | 2 | 0.55 | 1.0 | 12.2 | 160 |
| 5x2x0.75 | 2 | 0.55 | 1.0 | 13.3 | 182 |
| 8x2x0.75 | 2 | 0.55 | 1.1 | 14.6 | 225 |
| 10x2x0.75 | 2 | 0.55 | 1.1 | 16.7 | 281 |
| 12x2x0.75 | 2 | 0.55 | 1.1 | 17.4 | 322 |
| 16x2x0.75 | 2 | 0.55 | 1.2 | 19.9 | 423 |
| 20x2x0.75 | 2 | 0.55 | 1.3 | 22.1 | 509 |
| 24x2x0.75 | 2 | 0.55 | 1.3 | 24.1 | 596 |



Caledonian

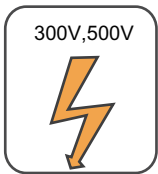
Flame Retardant Instrumentation Cables

www.caledonian-cables.co.uk

www.addison-cables.com



| Conductor | | RE-2X(St)Y | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | kg/km |
| 1.0mm ² | | | | | |
| 2x2x1.0 | 2 | 0.55 | 0.9 | 10.2 | 104 |
| 3x2x1.0 | 2 | 0.55 | 1.0 | 12.0 | 162 |
| 4x2x1.0 | 2 | 0.55 | 1.0 | 13.1 | 200 |
| 5x2x1.0 | 2 | 0.55 | 1.0 | 14.3 | 231 |
| 8x2x1.0 | 2 | 0.55 | 1.1 | 15.6 | 284 |
| 10x2x1.0 | 2 | 0.55 | 1.1 | 17.9 | 350 |
| 12x2x1.0 | 2 | 0.55 | 1.2 | 18.8 | 409 |
| 16x2x1.0 | 2 | 0.55 | 1.2 | 21.3 | 536 |
| 20x2x1.0 | 2 | 0.55 | 1.3 | 23.6 | 648 |
| 24x2x1.0 | 2 | 0.55 | 1.4 | 26.1 | 786 |
| 1.5mm ² | | | | | |
| 2x2x1.5 | 2 | 0.6 | 1.0 | 11.8 | 143 |
| 3x2x1.5 | 2 | 0.6 | 1.1 | 13.8 | 220 |
| 4x2x1.5 | 2 | 0.6 | 1.1 | 15.2 | 266 |
| 5x2x1.5 | 2 | 0.6 | 1.2 | 16.5 | 314 |
| 8x2x1.5 | 2 | 0.6 | 1.2 | 18.0 | 400 |
| 10x2x1.5 | 2 | 0.6 | 1.3 | 20.8 | 478 |
| 12x2x1.5 | 2 | 0.6 | 1.3 | 21.7 | 580 |
| 16x2x1.5 | 2 | 0.6 | 1.4 | 24.8 | 755 |
| 20x2x1.5 | 2 | 0.6 | 1.5 | 27.5 | 918 |
| 24x2x1.5 | 2 | 0.6 | 1.5 | 30.1 | 1091 |
| 2.5mm ² | | | | | |
| 2x2x2.5 | 2 | 0.7 | 1.0 | 13.4 | 194 |
| 3x2x2.5 | 2 | 0.7 | 1.1 | 15.6 | 296 |
| 4x2x2.5 | 2 | 0.7 | 1.1 | 17.3 | 367 |
| 5x2x2.5 | 2 | 0.7 | 1.2 | 18.9 | 440 |
| 8x2x2.5 | 2 | 0.7 | 1.2 | 21.0 | 602 |
| 10x2x2.5 | 2 | 0.7 | 1.3 | 24.2 | 731 |
| 12x2x2.5 | 2 | 0.7 | 1.3 | 25.4 | 883 |
| 16x2x2.5 | 2 | 0.7 | 1.4 | 28.9 | 1159 |
| 20x2x2.5 | 2 | 0.7 | 1.5 | 32.0 | 1423 |
| 24x2x2.5 | 2 | 0.7 | 1.5 | 35.2 | 1679 |



300V, 500V

Rated Voltage



EN 50288-7
formerly BS 5308

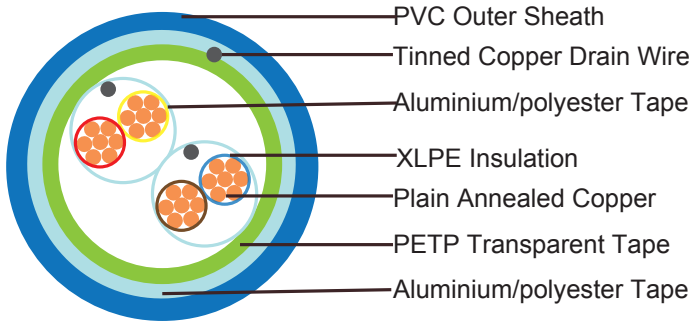
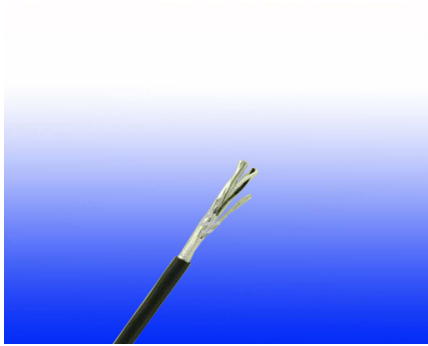
Standard



Flame Retardancy
BS EN 60332-1-2

Flame Retardant Individual and Overall Screened Instrumentation Cables (Multipair)

RE-2X(St)Y PiMF



APPLICATION

The unarmoured XLPE versions are generally use for indoor installation and suitable for wet and damp areas. Generally used within industrial process manufacturing plants for communication, data and voice transmission signals and services.

STANDARDS

Basic design to BS EN 50288-7 (formerly BS 5308)

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 60332-1-2 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

300V, 500V

CABLE CONSTRUCTION

Conductor: Plain or metal coated copper wire, solid, stranded or flexible according to IEC 60228 class 1, 2 and 5.

Insulation: Extruded XLPE compound according to EN 50290-2-29. PVC, PE, PP compound can be offered as option.

Pairs: Two insulated conductors uniformly twisted together with a lay not exceeding 100mm ($\leq 1.5\text{mm}^2$) nor 150mm (for 2.5mm^2).

Individual Screen: Aluminium/polyester tape is applied over each pair with metallic side down in contact with tinned copper drain wire, 0.5mm^2

Binder tape: PETP transparent tape

Overall Screen: Aluminium/polyester tape is applied over the laid up pairs with metallic side down in contact with tinned copper drain wire, 0.5mm^2

Outer Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.



COLOUR CODE

Insulation Colour: Colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting.

Outer sheath: Black. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: 30°C - +90°C

Temperature range fixed installation: -5°C - +50°C

Maximum short circuit temperature (5 Seconds): 250°C

Minimum bending radius: 7.5 x Overall Diameter

ELECTRICAL PROPERTIES

300V

| | | | | | |
|--------------------------------------|-----------------|------|-------|------|------|
| Conductor Area Size | mm ² | 0.5 | 0.75 | 1 | 1.5 |
| Insulation thickness (nominal) | mm | 0.35 | 0.38 | 0.4 | 0.45 |
| Insulation thickness (minimum) | mm | 0.26 | 0.26 | 0.26 | 0.35 |
| Conductor resistance (20°C) | Ω/km | 36.7 | 25 | 18.5 | 12.3 |
| Minimum Insulation resistance (20°C) | MΩ/km | 1000 | | | |
| Maximum Mutual Capacitance | nf/km | 250 | | | |
| Capacitance Unbalance | pf/500m | 500 | | | |
| Maximum L/R (ratio) | μH/Ω | 25 | 25 | 25 | 40 |
| Operating Voltage | V | 300 | | | |
| Dielectric Strength for 1 minute | AC | V | ≥1000 | | |
| | DC | V | ≥2000 | | |

500V

| | | | | | | |
|--------------------------------------|-----------------|------|-------|------|------|------|
| Conductor Area Size | mm ² | 0.5 | 0.75 | 1 | 1.5 | 2.5 |
| Insulation thickness (nominal) | mm | 0.55 | 0.55 | 0.55 | 0.6 | 0.7 |
| Insulation thickness (minimum) | mm | 0.44 | 0.44 | 0.44 | 0.44 | 0.53 |
| Conductor resistance (20°C) | Ω/km | 36.7 | 25 | 18.5 | 12.3 | 7.4 |
| Minimum Insulation resistance (20°C) | MΩ/km | 1000 | | | | |
| Maximum Mutual Capacitance | nf/km | 250 | | | | |
| Capacitance Unbalance | pf/500m | 500 | | | | |
| Maximum L/R (ratio) | μH/Ω | 25 | 25 | 25 | 40 | 60 |
| Operating Voltage | V | 500 | | | | |
| Dielectric Strength for 1 minute | AC | V | ≥2000 | | | |
| | DC | V | ≥3000 | | | |

CONSTRUCTION PARAMETERS

300V

| Conductor | | RE-2X(St)Y PiMF | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x2xmm ² | | mm | mm | mm | kg/km |
| 0.5mm ² | | | | | |
| 2x2x0.5 | 2 | 0.35 | 0.9 | 8.7 | 85 |
| 3x2x0.5 | 2 | 0.35 | 1.0 | 10.2 | 120 |
| 4x2x0.5 | 2 | 0.35 | 1.0 | 11.2 | 145 |
| 5x2x0.5 | 2 | 0.35 | 1.0 | 12.1 | 170 |
| 8x2x0.5 | 2 | 0.35 | 1.1 | 13.1 | 214 |
| 10x2x0.5 | 2 | 0.35 | 1.2 | 15.1 | 265 |
| 12x2x0.5 | 2 | 0.35 | 1.2 | 15.7 | 286 |
| 16x2x0.5 | 2 | 0.35 | 1.2 | 17.8 | 380 |
| 20x2x0.5 | 2 | 0.35 | 1.3 | 19.7 | 475 |
| 24x2x0.5 | 2 | 0.35 | 1.4 | 21.5 | 561 |
| 0.75mm ² | | | | | |
| 2x2x0.75 | 2 | 0.38 | 1.0 | 9.7 | 101 |
| 3x2x0.75 | 2 | 0.38 | 1.0 | 11.2 | 159 |
| 4x2x0.75 | 2 | 0.38 | 1.1 | 12.5 | 183 |
| 5x2x0.75 | 2 | 0.38 | 1.1 | 13.6 | 215 |
| 8x2x0.75 | 2 | 0.38 | 1.1 | 14.4 | 272 |
| 10x2x0.75 | 2 | 0.38 | 1.2 | 16.6 | 333 |
| 12x2x0.75 | 2 | 0.38 | 1.2 | 17.4 | 383 |
| 16x2x0.75 | 2 | 0.38 | 1.3 | 19.8 | 492 |
| 20x2x0.75 | 2 | 0.38 | 1.4 | 22.0 | 603 |
| 24x2x0.75 | 2 | 0.38 | 1.5 | 24.0 | 704 |
| 1.0mm ² | | | | | |
| 2x2x1.0 | 2 | 0.4 | 1.0 | 10.4 | 112 |
| 3x2x1.0 | 2 | 0.4 | 1.0 | 12.1 | 179 |
| 4x2x1.0 | 2 | 0.4 | 1.1 | 13.5 | 220 |
| 5x2x1.0 | 2 | 0.4 | 1.1 | 14.7 | 256 |
| 8x2x1.0 | 2 | 0.4 | 1.2 | 15.8 | 323 |
| 10x2x1.0 | 2 | 0.4 | 1.2 | 18.0 | 401 |
| 12x2x1.0 | 2 | 0.4 | 1.3 | 19.0 | 454 |
| 16x2x1.0 | 2 | 0.4 | 1.3 | 21.5 | 601 |
| 20x2x1.0 | 2 | 0.4 | 1.4 | 23.9 | 719 |
| 24x2x1.0 | 2 | 0.4 | 1.5 | 26.1 | 884 |
| 1.5mm ² | | | | | |
| 2x2x1.5 | 2 | 0.45 | 1.0 | 11.8 | 164 |

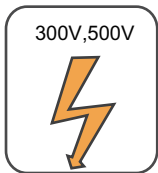


| Conductor | | RE-2X(St)Y PiMF | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | kg/km |
| 3x2x1.5 | 2 | 0.45 | 1.1 | 13.9 | 235 |
| 4x2x1.5 | 2 | 0.45 | 1.2 | 15.5 | 289 |
| 5x2x1.5 | 2 | 0.45 | 1.2 | 16.9 | 366 |
| 8x2x1.5 | 2 | 0.45 | 1.3 | 18.2 | 446 |
| 10x2x1.5 | 2 | 0.45 | 1.4 | 21.0 | 565 |
| 12x2x1.5 | 2 | 0.45 | 1.4 | 21.9 | 637 |
| 16x2x1.5 | 2 | 0.45 | 1.5 | 25.1 | 828 |
| 20x2x1.5 | 2 | 0.45 | 1.6 | 27.8 | 1024 |
| 24x2x1.5 | 2 | 0.45 | 1.7 | 30.4 | 1219 |

500V

| Conductor | | RE-2X(St)Y PiMF | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | kg/km |
| 0.5mm ² | | | | | |
| 2x2x0.5 | 2 | 0.55 | 0.9 | 10.1 | 88 |
| 3x2x0.5 | 2 | 0.55 | 1.0 | 11.7 | 125 |
| 4x2x0.5 | 2 | 0.55 | 1.0 | 12.9 | 151 |
| 5x2x0.5 | 2 | 0.55 | 1.0 | 14.0 | 178 |
| 8x2x0.5 | 2 | 0.55 | 1.1 | 15.4 | 227 |
| 10x2x0.5 | 2 | 0.55 | 1.2 | 17.9 | 281 |
| 12x2x0.5 | 2 | 0.55 | 1.2 | 18.7 | 305 |
| 16x2x0.5 | 2 | 0.55 | 1.2 | 21.1 | 406 |
| 20x2x0.5 | 2 | 0.55 | 1.3 | 23.4 | 507 |
| 24x2x0.5 | 2 | 0.55 | 1.4 | 25.8 | 599 |
| 0.75mm ² | | | | | |
| 2x2x0.75 | 2 | 0.55 | 1.0 | 10.9 | 104 |
| 3x2x0.75 | 2 | 0.55 | 1.0 | 12.5 | 164 |
| 4x2x0.75 | 2 | 0.55 | 1.1 | 14.0 | 189 |
| 5x2x0.75 | 2 | 0.55 | 1.1 | 15.2 | 223 |
| 8x2x0.75 | 2 | 0.55 | 1.1 | 16.4 | 284 |
| 10x2x0.75 | 2 | 0.55 | 1.2 | 19.0 | 348 |
| 12x2x0.75 | 2 | 0.55 | 1.2 | 19.9 | 401 |
| 16x2x0.75 | 2 | 0.55 | 1.3 | 22.6 | 517 |
| 20x2x0.75 | 2 | 0.55 | 1.4 | 25.1 | 634 |
| 24x2x0.75 | 2 | 0.55 | 1.5 | 27.6 | 741 |

| Conductor | | RE-2X(St)Y PiMF | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x2xmm ² | | mm | mm | mm | kg/km |
| 1.0mm ² | | | | | |
| 2x2x1.0 | 2 | 0.55 | 1.0 | 11.5 | 115 |
| 3x2x1.0 | 2 | 0.55 | 1.0 | 13.3 | 184 |
| 4x2x1.0 | 2 | 0.55 | 1.1 | 14.8 | 226 |
| 5x2x1.0 | 2 | 0.55 | 1.1 | 16.1 | 264 |
| 8x2x1.0 | 2 | 0.55 | 1.2 | 17.6 | 335 |
| 10x2x1.0 | 2 | 0.55 | 1.2 | 20.1 | 417 |
| 12x2x1.0 | 2 | 0.55 | 1.3 | 21.2 | 473 |
| 16x2x1.0 | 2 | 0.55 | 1.3 | 24.0 | 626 |
| 20x2x1.0 | 2 | 0.55 | 1.4 | 26.7 | 750 |
| 24x2x1.0 | 2 | 0.55 | 1.5 | 29.3 | 921 |
| 1.5mm ² | | | | | |
| 2x2x1.5 | 2 | 0.6 | 1.0 | 12.9 | 168 |
| 3x2x1.5 | 2 | 0.6 | 1.1 | 15.1 | 241 |
| 4x2x1.5 | 2 | 0.6 | 1.2 | 16.8 | 296 |
| 5x2x1.5 | 2 | 0.6 | 1.2 | 18.3 | 375 |
| 8x2x1.5 | 2 | 0.6 | 1.3 | 20.0 | 461 |
| 10x2x1.5 | 2 | 0.6 | 1.4 | 23.1 | 583 |
| 12x2x1.5 | 2 | 0.6 | 1.4 | 24.1 | 659 |
| 16x2x1.5 | 2 | 0.6 | 1.5 | 27.6 | 858 |
| 20x2x1.5 | 2 | 0.6 | 1.6 | 30.6 | 1061 |
| 24x2x1.5 | 2 | 0.6 | 1.7 | 33.6 | 1263 |
| 2.5mm ² | | | | | |
| 2x2x2.5 | 2 | 0.7 | 1.0 | 15.1 | 219 |
| 3x2x2.5 | 2 | 0.7 | 1.1 | 18.2 | 317 |
| 4x2x2.5 | 2 | 0.7 | 1.1 | 20.7 | 397 |
| 5x2x2.5 | 2 | 0.7 | 1.2 | 23.9 | 501 |
| 8x2x2.5 | 2 | 0.7 | 1.2 | 28.0 | 663 |
| 10x2x2.5 | 2 | 0.7 | 1.3 | 33.7 | 836 |
| 12x2x2.5 | 2 | 0.7 | 1.3 | 37.2 | 962 |
| 16x2x2.5 | 2 | 0.7 | 1.4 | 44.1 | 1262 |
| 20x2x2.5 | 2 | 0.7 | 1.5 | 50.4 | 1566 |
| 24x2x2.5 | 2 | 0.7 | 1.5 | 59.4 | 1869 |



Rated Voltage



Standard

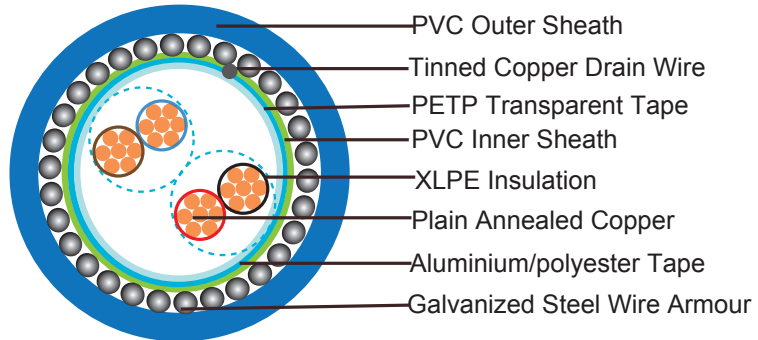
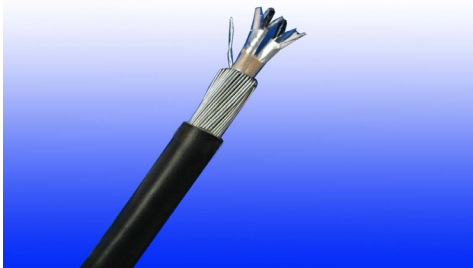


Flame Retardancy
BS EN 60332-1-2



Flame Retardant Overall Screened, Armoured Instrumentation Cables (Multipair)

RE-2X(St)YSWAY



APPLICATION

The armoured XLPE versions are generally used when the risk of mechanical damage is increased. The galvanized steel wire armour provides excellent protection. Generally used within industrial process manufacturing plants for communication, data and voice transmission signals and services.

STANDARDS

Basic design to BS EN 50288-7 (formerly BS 5308)

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 60332-1-2 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

300V, 500V

CABLE CONSTRUCTION

Conductor: Plain or metal coated copper wire, solid, stranded or flexible according to IEC 60228 class 1, 2 and 5.

Insulation: Extruded XLPE compound according to EN 50290-2-29. PVC, PE, PP compound can be offered as option.

Pairs: Two insulated conductors uniformly twisted together with a lay not exceeding 100mm ($\leq 1.5\text{mm}^2$) nor 150mm (for 2.5mm^2).

Binder tape: PETP transparent tape

Overall Screen: Aluminium/polyester tape is applied over the laid up pairs with metallic side down in contact with tinned copper drain wire, 0.5mm^2 .

Inner Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Armouring: Galvanized steel wire armour

Outer Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1,

IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting.

Outer sheath: Black. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: 30°C - +90°C

Temperature range during installation: -5°C - +50°C

Maximum short circuit temperature (5 Seconds): 250°C

Minimum bending radius: 6 x Overall Diameter

ELECTRICAL PROPERTIES

300V

| | | | | | |
|--------------------------------------|-----------------|------|-------|------|------|
| Conductor Area Size | mm ² | 0.5 | 0.75 | 1 | 1.5 |
| Insulation thickness (nominal) | mm | 0.35 | 0.38 | 0.4 | 0.45 |
| Insulation thickness (minimum) | mm | 0.26 | 0.26 | 0.26 | 0.35 |
| Conductor resistance (20°C) | Ω/km | 36.7 | 25 | 18.5 | 12.3 |
| Minimum Insulation resistance (20°C) | MΩ/km | 1000 | | | |
| Maximum Mutual Capacitance | nf/km | 250 | | | |
| Capacitance Unbalance | pf/500m | 500 | | | |
| Maximum L/R (ratio) | μH/Ω | 25 | 25 | 25 | 40 |
| Operating Voltage | V | 300 | | | |
| Dielectric Strength for 1 minute | AC | V | ≥1000 | | |
| | DC | V | ≥2000 | | |

500V

| | | | | | | |
|--------------------------------------|-----------------|------|-------|------|------|------|
| Conductor Area Size | mm ² | 0.5 | 0.75 | 1 | 1.5 | 2.5 |
| Insulation thickness (nominal) | mm | 0.55 | 0.55 | 0.55 | 0.6 | 0.7 |
| Insulation thickness (minimum) | mm | 0.44 | 0.44 | 0.44 | 0.44 | 0.53 |
| Conductor resistance (20°C) | Ω/km | 36.7 | 25 | 18.5 | 12.3 | 7.4 |
| Minimum Insulation resistance (20°C) | MΩ/km | 1000 | | | | |
| Maximum Mutual Capacitance | nf/km | 250 | | | | |
| Capacitance Unbalance | pf/500m | 500 | | | | |
| Maximum L/R (ratio) | μH/Ω | 25 | 25 | 25 | 40 | 60 |
| Operating Voltage | V | 500 | | | | |
| Dielectric Strength for 1 minute | AC | V | ≥2000 | | | |
| | DC | V | ≥3000 | | | |



CONSTRUCTION PARAMETERS

300V

| Conductor | | RE-2X(St)YSWAY | | | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 0.5mm ² | | | | | | | |
| 2x2x0.5 | 2 | 0.35 | 0.9 | 0.9 | 1.3 | 12.0 | 269 |
| 3x2x0.5 | 2 | 0.35 | 0.9 | 0.9 | 1.4 | 13.4 | 325 |
| 4x2x0.5 | 2 | 0.35 | 1.0 | 0.9 | 1.4 | 14.4 | 375 |
| 5x2x0.5 | 2 | 0.35 | 1.0 | 0.9 | 1.4 | 15.2 | 423 |
| 8x2x0.5 | 2 | 0.35 | 1.0 | 0.9 | 1.4 | 15.9 | 473 |
| 10x2x0.5 | 2 | 0.35 | 1.1 | 0.9 | 1.5 | 17.7 | 521 |
| 12x2x0.5 | 2 | 0.35 | 1.1 | 0.9 | 1.5 | 18.3 | 592 |
| 16x2x0.5 | 2 | 0.35 | 1.1 | 0.9 | 1.5 | 20.0 | 823 |
| 20x2x0.5 | 2 | 0.35 | 1.2 | 0.9 | 1.6 | 21.9 | 920 |
| 24x2x0.5 | 2 | 0.35 | 1.2 | 1.25 | 1.6 | 24.0 | 1028 |
| 0.75mm ² | | | | | | | |
| 2x2x0.75 | 2 | 0.38 | 0.9 | 0.9 | 1.4 | 13.1 | 308 |
| 3x2x0.75 | 2 | 0.38 | 1.0 | 0.9 | 1.4 | 14.6 | 371 |
| 4x2x0.75 | 2 | 0.38 | 1.0 | 0.9 | 1.4 | 15.5 | 436 |
| 5x2x0.75 | 2 | 0.38 | 1.0 | 0.9 | 1.4 | 16.4 | 495 |
| 8x2x0.75 | 2 | 0.38 | 1.1 | 0.9 | 1.5 | 17.6 | 533 |
| 10x2x0.75 | 2 | 0.38 | 1.1 | 0.9 | 1.5 | 19.3 | 637 |
| 12x2x0.75 | 2 | 0.38 | 1.1 | 0.9 | 1.5 | 19.9 | 825 |
| 16x2x0.75 | 2 | 0.38 | 1.2 | 0.9 | 1.6 | 22.3 | 965 |
| 20x2x0.75 | 2 | 0.38 | 1.3 | 1.25 | 1.6 | 24.9 | 1116 |
| 24x2x0.75 | 2 | 0.38 | 1.3 | 1.25 | 1.6 | 26.7 | 1257 |
| 1.0mm ² | | | | | | | |
| 2x2x1.0 | 2 | 0.4 | 0.9 | 0.9 | 1.4 | 13.8 | 336 |
| 3x2x1.0 | 2 | 0.4 | 1.0 | 0.9 | 1.4 | 15.5 | 436 |
| 4x2x1.0 | 2 | 0.4 | 1.0 | 0.9 | 1.4 | 16.5 | 494 |
| 5x2x1.0 | 2 | 0.4 | 1.0 | 0.9 | 1.4 | 17.6 | 550 |
| 8x2x1.0 | 2 | 0.4 | 1.1 | 0.9 | 1.5 | 18.8 | 633 |
| 10x2x1.0 | 2 | 0.4 | 1.1 | 0.9 | 1.5 | 20.7 | 859 |

| Conductor | | RE-2X(St)YSWAY | | | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 12x2x1.0 | 2 | 0.4 | 1.2 | 0.9 | 1.5 | 21.6 | 972 |
| 16x2x1.0 | 2 | 0.4 | 1.2 | 1.25 | 1.6 | 24.7 | 1171 |
| 20x2x1.0 | 2 | 0.4 | 1.3 | 1.25 | 1.7 | 27.0 | 1316 |
| 24x2x1.0 | 2 | 0.4 | 1.4 | 1.25 | 1.7 | 29.0 | 1520 |
| 1.5mm ² | | | | | | | |
| 2x2x1.5 | 2 | 0.45 | 1.0 | 0.9 | 1.4 | 15.4 | 419 |
| 3x2x1.5 | 2 | 0.45 | 1.1 | 0.9 | 1.5 | 17.5 | 544 |
| 4x2x1.5 | 2 | 0.45 | 1.1 | 0.9 | 1.5 | 18.8 | 627 |
| 5x2x1.5 | 2 | 0.45 | 1.2 | 0.9 | 1.5 | 20.0 | 833 |
| 8x2x1.5 | 2 | 0.45 | 1.2 | 0.9 | 1.6 | 21.4 | 943 |
| 10x2x1.5 | 2 | 0.45 | 1.3 | 1.25 | 1.6 | 24.5 | 1095 |
| 12x2x1.5 | 2 | 0.45 | 1.3 | 1.25 | 1.7 | 25.6 | 1197 |
| 16x2x1.5 | 2 | 0.45 | 1.4 | 1.25 | 1.7 | 28.4 | 1511 |
| 20x2x1.5 | 2 | 0.45 | 1.5 | 1.25 | 1.8 | 31.1 | 1968 |
| 24x2x1.5 | 2 | 0.45 | 1.5 | 1.25 | 1.8 | 33.2 | 2247 |

500V

| Conductor | | RE-2X(St)YSWAY | | | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 0.5mm ² | | | | | | | |
| 2x2x0.5 | 2 | 0.55 | 0.9 | 0.9 | 1.3 | 13.3 | 272 |
| 3x2x0.5 | 2 | 0.55 | 0.9 | 0.9 | 1.4 | 14.8 | 330 |
| 4x2x0.5 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 16.0 | 381 |
| 5x2x0.5 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 17.0 | 431 |
| 8x2x0.5 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 18.1 | 486 |
| 10x2x0.5 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 20.3 | 537 |
| 12x2x0.5 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 21.0 | 611 |
| 16x2x0.5 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 23.1 | 849 |
| 20x2x0.5 | 2 | 0.55 | 1.2 | 0.9 | 1.6 | 25.3 | 952 |
| 24x2x0.5 | 2 | 0.55 | 1.2 | 1.25 | 1.6 | 27.9 | 1066 |



Caledonian

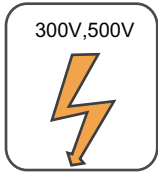
Flame Retardant Instrumentation Cables

www.caledonian-cables.co.uk www.addison-cables.com



| Conductor | | RE-2X(St)YSWAY | | | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 0.75mm² | | | | | | | |
| 2x2x0.75 | 2 | 0.55 | 0.9 | 0.9 | 1.4 | 14.2 | 311 |
| 3x2x0.75 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 15.8 | 376 |
| 4x2x0.75 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 16.8 | 442 |
| 5x2x0.75 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 17.9 | 503 |
| 8x2x0.75 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 19.4 | 545 |
| 10x2x0.75 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 21.5 | 652 |
| 12x2x0.75 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 22.2 | 843 |
| 16x2x0.75 | 2 | 0.55 | 1.2 | 0.9 | 1.6 | 24.9 | 990 |
| 20x2x0.75 | 2 | 0.55 | 1.3 | 1.25 | 1.6 | 27.8 | 1147 |
| 24x2x0.75 | 2 | 0.55 | 1.3 | 1.25 | 1.6 | 30.0 | 1294 |
| 1.0mm² | | | | | | | |
| 2x2x1.0 | 2 | 0.55 | 0.9 | 0.9 | 1.4 | 14.8 | 339 |
| 3x2x1.0 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 16.6 | 441 |
| 4x2x1.0 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 17.7 | 500 |
| 5x2x1.0 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 18.9 | 558 |
| 8x2x1.0 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 20.4 | 645 |
| 10x2x1.0 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 22.7 | 875 |
| 12x2x1.0 | 2 | 0.55 | 1.2 | 0.9 | 1.5 | 23.6 | 991 |
| 16x2x1.0 | 2 | 0.55 | 1.2 | 1.25 | 1.6 | 27.0 | 1196 |
| 20x2x1.0 | 2 | 0.55 | 1.3 | 1.25 | 1.7 | 29.5 | 1347 |
| 24x2x1.0 | 2 | 0.55 | 1.4 | 1.25 | 1.7 | 32.0 | 1557 |
| 1.5mm² | | | | | | | |
| 2x2x1.5 | 2 | 0.6 | 1.0 | 0.9 | 1.4 | 16.4 | 423 |
| 3x2x1.5 | 2 | 0.6 | 1.1 | 0.9 | 1.5 | 18.6 | 550 |
| 4x2x1.5 | 2 | 0.6 | 1.1 | 0.9 | 1.5 | 20.0 | 634 |
| 5x2x1.5 | 2 | 0.6 | 1.2 | 0.9 | 1.5 | 21.3 | 842 |
| 8x2x1.5 | 2 | 0.6 | 1.2 | 0.9 | 1.6 | 23.0 | 958 |
| 10x2x1.5 | 2 | 0.6 | 1.3 | 1.25 | 1.6 | 26.5 | 1113 |
| 12x2x1.5 | 2 | 0.6 | 1.3 | 1.25 | 1.7 | 27.6 | 1219 |
| 16x2x1.5 | 2 | 0.6 | 1.4 | 1.25 | 1.7 | 30.7 | 1541 |
| 20x2x1.5 | 2 | 0.6 | 1.5 | 1.25 | 1.8 | 33.6 | 2005 |
| 24x2x1.5 | 2 | 0.6 | 1.5 | 1.25 | 1.8 | 36.2 | 2291 |

| Conductor | | RE-2X(St)YSWAY | | | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 2.5mm ² | | | | | | | |
| 2x2x2.5 | 2 | 0.7 | 1.0 | 0.9 | 1.4 | 18.4 | 474 |
| 3x2x2.5 | 2 | 0.7 | 1.1 | 0.9 | 1.5 | 20.8 | 626 |
| 4x2x2.5 | 2 | 0.7 | 1.1 | 0.9 | 1.5 | 22.5 | 735 |
| 5x2x2.5 | 2 | 0.7 | 1.2 | 0.9 | 1.5 | 24.0 | 968 |
| 8x2x2.5 | 2 | 0.7 | 1.2 | 0.9 | 1.6 | 26.4 | 1160 |
| 10x2x2.5 | 2 | 0.7 | 1.3 | 1.25 | 1.6 | 30.6 | 1366 |
| 12x2x2.5 | 2 | 0.7 | 1.3 | 1.25 | 1.7 | 31.8 | 1522 |
| 16x2x2.5 | 2 | 0.7 | 1.4 | 1.25 | 1.7 | 35.5 | 1945 |
| 20x2x2.5 | 2 | 0.7 | 1.5 | 1.25 | 1.8 | 38.8 | 2510 |
| 24x2x2.5 | 2 | 0.7 | 1.5 | 1.25 | 1.8 | 42.3 | 2897 |



300V,500V

Rated Voltage



EN 50288-7
formerly BS 5308

Standard

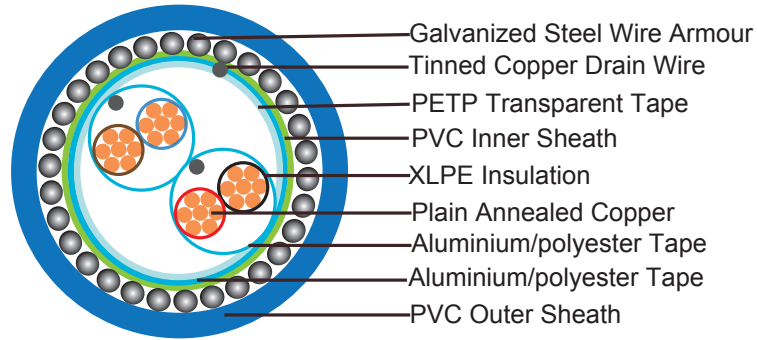


Flame Retardancy
BS EN 60332-1-2



Flame Retardant Individual and Overall Screened, Armoured Instrumentation Cables (Multipair)

RE-2X(St)YSWAY PiMF



APPLICATION

The armoured XLPE versions are generally used when the risk of mechanical damage is increased. The galvanized steel wire armour provides excellent protection. Generally used within industrial process manufacturing plants for communication, data and voice transmission signals and services.

STANDARDS

Basic design to BS EN 50288-7 (formerly BS 5308)

FIRE PERFORMANCE

| | |
|----------------------------------------------|-----------------|
| Flame Retardance (Single Vertical Wire Test) | BS EN 60332-1-2 |
|----------------------------------------------|-----------------|

VOLTAGE RATING

300V, 500V

CABLE CONSTRUCTION

Conductor: Plain or metal coated copper wire, solid, stranded or flexible according to IEC 60228 class 1, 2 and 5.

Insulation: Extruded XLPE compound according to EN 50290-2-29. PVC, PE, PP compound can be offered as option.

Pairs: Two insulated conductors uniformly twisted together with a lay not exceeding 100mm ($\leq 1.5\text{mm}^2$) nor 150mm (for 2.5mm^2).

Individual Screen: Aluminium/polyester tape is applied over the laid up pairs with metallic side down in contact with tinned copper drain wire, 0.5mm^2 .

Binder tape: PETP transparent tape

Overall Screen: Aluminium/polyester tape is applied over the laid up pairs with metallic side down in contact with tinned copper drain wire, 0.5mm^2 .

Inner Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Armouring: Galvanized steel wire armour

Outer Sheath: Thermoplastic PVC compound according to EN 50290-2-22.

Outer Sheath Option: Thermoplastic PVC compound. UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

COLOUR CODE

Insulation Colour: Colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting.

Outer sheath: Black. Other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: 30°C - +90°C

Temperature range during installation: -5°C - +50°C

Maximum short circuit temperature (5 Seconds): 250°C

Minimum bending radius: 6 x Overall Diameter

ELECTRICAL PROPERTIES

300V

| | | | | | |
|--------------------------------------|-----------------|-------|------|------|------|
| Conductor Area Size | mm ² | 0.5 | 0.75 | 1 | 1.5 |
| Insulation thickness (nominal) | mm | 0.35 | 0.38 | 0.4 | 0.45 |
| Insulation thickness (minimum) | mm | 0.26 | 0.26 | 0.26 | 0.35 |
| Conductor resistance (20°C) | Ω/km | 36.7 | 25 | 18.5 | 12.3 |
| Minimum Insulation resistance (20°C) | MΩ/km | 1000 | | | |
| Maximum Mutual Capacitance | nf/km | 250 | | | |
| Capacitance Unbalance | pf/500m | 500 | | | |
| Maximum L/R (ratio) | μH/Ω | 25 | 25 | 25 | 40 |
| Operating Voltage | V | 300 | | | |
| Dielectric Strength for 1 minute | AC | ≥1000 | | | |
| | DC | ≥2000 | | | |

500V

| | | | | | | |
|--------------------------------------|-----------------|-------|------|------|------|------|
| Conductor Area Size | mm ² | 0.5 | 0.75 | 1 | 1.5 | 2.5 |
| Insulation thickness (nominal) | mm | 0.55 | 0.55 | 0.55 | 0.6 | 0.7 |
| Insulation thickness (minimum) | mm | 0.44 | 0.44 | 0.44 | 0.44 | 0.53 |
| Conductor resistance (20°C) | Ω/km | 36.7 | 25 | 18.5 | 12.3 | 7.4 |
| Minimum Insulation resistance (20°C) | MΩ/km | 1000 | | | | |
| Maximum Mutual Capacitance | nf/km | 250 | | | | |
| Capacitance Unbalance | pf/500m | 500 | | | | |
| Maximum L/R (ratio) | μH/Ω | 25 | 25 | 25 | 40 | 60 |
| Operating Voltage | V | 500 | | | | |
| Dielectric Strength for 1 minute | AC | ≥2000 | | | | |
| | DC | ≥3000 | | | | |



CONSTRUCTION PARAMETERS

300V

| Conductor | | RE-2X(St)YSWAY PiMF | | | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 0.5mm ² | | | | | | | |
| 2x2x0.5 | 2 | 0.35 | 0.9 | 0.9 | 1.4 | 13.3 | 311 |
| 3x2x0.5 | 2 | 0.35 | 1.0 | 0.9 | 1.4 | 14.8 | 373 |
| 4x2x0.5 | 2 | 0.35 | 1.0 | 0.9 | 1.4 | 15.8 | 451 |
| 5x2x0.5 | 2 | 0.35 | 1.0 | 0.9 | 1.6 | 16.9 | 483 |
| 8x2x0.5 | 2 | 0.35 | 1.1 | 0.9 | 1.6 | 17.9 | 537 |
| 10x2x0.5 | 2 | 0.35 | 1.2 | 0.9 | 1.5 | 19.9 | 781 |
| 12x2x0.5 | 2 | 0.35 | 1.2 | 0.9 | 1.5 | 20.5 | 804 |
| 16x2x0.5 | 2 | 0.35 | 1.2 | 1.25 | 1.6 | 23.5 | 968 |
| 20x2x0.5 | 2 | 0.35 | 1.3 | 1.25 | 1.7 | 25.6 | 1143 |
| 24x2x0.5 | 2 | 0.35 | 1.4 | 1.25 | 1.7 | 27.4 | 1264 |
| 0.75mm ² | | | | | | | |
| 2x2x0.75 | 2 | 0.38 | 1.0 | 0.9 | 1.4 | 14.3 | 342 |
| 3x2x0.75 | 2 | 0.38 | 1.0 | 0.9 | 1.4 | 15.8 | 439 |
| 4x2x0.75 | 2 | 0.38 | 1.1 | 0.9 | 1.5 | 17.3 | 496 |
| 5x2x0.75 | 2 | 0.38 | 1.1 | 0.9 | 1.5 | 18.4 | 578 |
| 8x2x0.75 | 2 | 0.38 | 1.1 | 0.9 | 1.5 | 19.2 | 664 |
| 10x2x0.75 | 2 | 0.38 | 1.2 | 1.25 | 1.6 | 22.3 | 876 |
| 12x2x0.75 | 2 | 0.38 | 1.2 | 1.25 | 1.6 | 23.1 | 942 |
| 16x2x0.75 | 2 | 0.38 | 1.3 | 1.25 | 1.7 | 25.7 | 1130 |
| 20x2x0.75 | 2 | 0.38 | 1.4 | 1.25 | 1.7 | 27.9 | 1325 |
| 24x2x0.75 | 2 | 0.38 | 1.5 | 1.25 | 1.8 | 30.1 | 1490 |
| 1.0mm ² | | | | | | | |
| 2x2x1.0 | 2 | 0.4 | 1.0 | 0.9 | 1.4 | 15.0 | 382 |
| 3x2x1.0 | 2 | 0.4 | 1.0 | 0.9 | 1.4 | 16.7 | 487 |
| 4x2x1.0 | 2 | 0.4 | 1.1 | 0.9 | 1.5 | 18.3 | 566 |
| 5x2x1.0 | 2 | 0.4 | 1.1 | 0.9 | 1.5 | 19.5 | 641 |
| 8x2x1.0 | 2 | 0.4 | 1.2 | 0.9 | 1.5 | 20.6 | 718 |
| 10x2x1.0 | 2 | 0.4 | 1.2 | 1.25 | 1.6 | 23.7 | 994 |

| Conductor | | RE-2X(St)YSWAY PiMF | | | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 12x2x1.0 | 2 | 0.4 | 1.3 | 1.25 | 1.7 | 24.7 | 1083 |
| 16x2x1.0 | 2 | 0.4 | 1.3 | 1.25 | 1.7 | 27.4 | 1361 |
| 20x2x1.0 | 2 | 0.4 | 1.4 | 1.25 | 1.7 | 29.8 | 1510 |
| 24x2x1.0 | 2 | 0.4 | 1.5 | 1.25 | 1.8 | 32.2 | 1902 |
| 1.5mm ² | | | | | | | |
| 2x2x1.5 | 2 | 0.45 | 1.0 | 0.9 | 1.5 | 16.6 | 475 |
| 3x2x1.5 | 2 | 0.45 | 1.1 | 0.9 | 1.5 | 18.7 | 599 |
| 4x2x1.5 | 2 | 0.45 | 1.2 | 0.9 | 1.5 | 20.3 | 818 |
| 5x2x1.5 | 2 | 0.45 | 1.2 | 1.25 | 1.6 | 22.6 | 940 |
| 8x2x1.5 | 2 | 0.45 | 1.3 | 1.25 | 1.7 | 24.1 | 1037 |
| 10x2x1.5 | 2 | 0.45 | 1.4 | 1.25 | 1.7 | 26.9 | 1273 |
| 12x2x1.5 | 2 | 0.45 | 1.4 | 1.25 | 1.7 | 27.8 | 1353 |
| 16x2x1.5 | 2 | 0.45 | 1.5 | 1.25 | 1.8 | 31.2 | 1932 |
| 20x2x1.5 | 2 | 0.45 | 1.6 | 1.25 | 1.9 | 34.8 | 2224 |
| 24x2x1.5 | 2 | 0.45 | 1.7 | 1.25 | 2 | 37.6 | 2541 |

500V

| Conductor | | RE-2X(St)YSWAY PiMF | | | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 0.5mm ² | | | | | | | |
| 2x2x0.5 | 2 | 0.55 | 0.9 | 0.9 | 1.4 | 14.7 | 314 |
| 3x2x0.5 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 16.3 | 378 |
| 4x2x0.5 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 17.5 | 457 |
| 5x2x0.5 | 2 | 0.55 | 1.0 | 0.9 | 1.6 | 18.8 | 491 |
| 8x2x0.5 | 2 | 0.55 | 1.1 | 0.9 | 1.6 | 20.2 | 550 |
| 10x2x0.5 | 2 | 0.55 | 1.2 | 0.9 | 1.5 | 22.7 | 797 |
| 12x2x0.5 | 2 | 0.55 | 1.2 | 0.9 | 1.5 | 23.5 | 823 |
| 16x2x0.5 | 2 | 0.55 | 1.2 | 1.25 | 1.6 | 26.8 | 994 |
| 20x2x0.5 | 2 | 0.55 | 1.3 | 1.25 | 1.7 | 29.3 | 1175 |



Caledonian

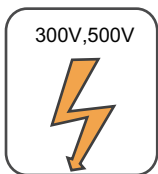
Flame Retardant Instrumentation Cables

www.caledonian-cables.co.uk www.addison-cables.com



| Conductor | | RE-2X(St)YSWAY PiMF | | | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 24x2x0.5 | 2 | 0.55 | 1.4 | 1.25 | 1.7 | 31.7 | 1302 |
| 0.75mm ² | | | | | | | |
| 2x2x0.75 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 15.5 | 345 |
| 3x2x0.75 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 17.1 | 444 |
| 4x2x0.75 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 18.8 | 502 |
| 5x2x0.75 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 20.0 | 586 |
| 8x2x0.75 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 21.2 | 676 |
| 10x2x0.75 | 2 | 0.55 | 1.2 | 1.25 | 1.6 | 24.7 | 891 |
| 12x2x0.75 | 2 | 0.55 | 1.2 | 1.25 | 1.6 | 25.6 | 960 |
| 16x2x0.75 | 2 | 0.55 | 1.3 | 1.25 | 1.7 | 28.5 | 1155 |
| 20x2x0.75 | 2 | 0.55 | 1.4 | 1.25 | 1.7 | 31.0 | 1356 |
| 24x2x0.75 | 2 | 0.55 | 1.5 | 1.25 | 1.8 | 33.7 | 1527 |
| 1.0mm ² | | | | | | | |
| 2x2x1.0 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 16.1 | 385 |
| 3x2x1.0 | 2 | 0.55 | 1.0 | 0.9 | 1.4 | 17.9 | 492 |
| 4x2x1.0 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 19.6 | 572 |
| 5x2x1.0 | 2 | 0.55 | 1.1 | 0.9 | 1.5 | 20.9 | 649 |
| 8x2x1.0 | 2 | 0.55 | 1.2 | 0.9 | 1.5 | 22.4 | 730 |
| 10x2x1.0 | 2 | 0.55 | 1.2 | 1.25 | 1.6 | 25.8 | 1010 |
| 12x2x1.0 | 2 | 0.55 | 1.3 | 1.25 | 1.7 | 26.9 | 1102 |
| 16x2x1.0 | 2 | 0.55 | 1.3 | 1.25 | 1.7 | 29.9 | 1386 |
| 20x2x1.0 | 2 | 0.55 | 1.4 | 1.25 | 1.7 | 32.6 | 1541 |
| 24x2x1.0 | 2 | 0.55 | 1.5 | 1.25 | 1.8 | 35.4 | 1939 |
| 1.5mm ² | | | | | | | |
| 2x2x1.5 | 2 | 0.6 | 1.0 | 0.9 | 1.5 | 17.7 | 479 |
| 3x2x1.5 | 2 | 0.6 | 1.1 | 0.9 | 1.5 | 19.9 | 605 |
| 4x2x1.5 | 2 | 0.6 | 1.2 | 0.9 | 1.5 | 21.6 | 825 |
| 5x2x1.5 | 2 | 0.6 | 1.2 | 1.25 | 1.6 | 24.0 | 949 |
| 8x2x1.5 | 2 | 0.6 | 1.3 | 1.25 | 1.7 | 25.9 | 1052 |
| 10x2x1.5 | 2 | 0.6 | 1.4 | 1.25 | 1.7 | 29.0 | 1291 |
| 12x2x1.5 | 2 | 0.6 | 1.4 | 1.25 | 1.7 | 30.0 | 1375 |
| 16x2x1.5 | 2 | 0.6 | 1.5 | 1.25 | 1.8 | 33.7 | 1962 |

| Conductor | | RE-2X(St)YSWAY PiMF | | | | | |
|------------------------------|--------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| No. of Pairs X Cross Section | Class of Conductor | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Armour Wire Diameter | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
| No. x 2 x mm ² | | mm | mm | mm | mm | mm | kg/km |
| 20x2x1.5 | 2 | 0.6 | 1.6 | 1.25 | 1.9 | 37.6 | 2261 |
| 24x2x1.5 | 2 | 0.6 | 1.7 | 1.25 | 2 | 40.8 | 2585 |
| 2.5mm ² | | | | | | | |
| 2x2x2.5 | 2 | 0.7 | 1.0 | 0.9 | 1.5 | 20.4 | 530 |
| 3x2x2.5 | 2 | 0.7 | 1.1 | 0.9 | 1.5 | 23.5 | 681 |
| 4x2x2.5 | 2 | 0.7 | 1.2 | 0.9 | 1.5 | 26.0 | 926 |
| 5x2x2.5 | 2 | 0.7 | 1.2 | 1.25 | 1.6 | 30.0 | 1075 |
| 8x2x2.5 | 2 | 0.7 | 1.3 | 1.25 | 1.7 | 34.5 | 1254 |
| 10x2x2.5 | 2 | 0.7 | 1.4 | 1.25 | 1.7 | 40.4 | 1544 |
| 12x2x2.5 | 2 | 0.7 | 1.4 | 1.25 | 1.7 | 43.8 | 1678 |
| 16x2x2.5 | 2 | 0.7 | 1.5 | 1.25 | 1.8 | 51.1 | 2366 |
| 20x2x2.5 | 2 | 0.7 | 1.6 | 1.25 | 1.9 | 58.4 | 2766 |
| 24x2x2.5 | 2 | 0.7 | 1.7 | 1.25 | 2.0 | 67.8 | 3191 |



Rated Voltage



Standard



Flame Retardancy
BS EN 60332-1-2

EN 50288-7 Colour Code

Unless otherwise specified e.g. by means of numbered cores or tapes, the coding for identification shall be given in IEC 60189-2 or EN 60708, as appropriate. The colours shall meet the requirements of 4.4 of EN 50288-1.

Coloured or numbered non-hygroscopic binder tapes may be applied over screened cabling elements as identification.

4.4 of EN 50288-1:

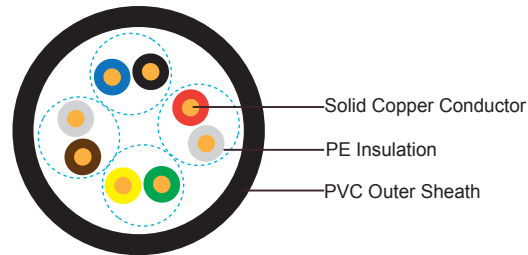
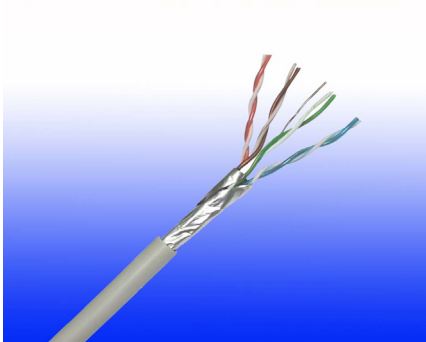
When required, the insulated conductors shall be identified by colours and/or additional ring markings and/or symbols achieved by the use of coloured insulation or by a coloured surface using extrusion, printing or painting. Colours shall be clearly identifiable and shall correspond reasonably with the standard colours shown in HD 402.

The colour(s) or the symbol used for core identification shall be durable such that it cannot be removed when tested to EN 50289-3-8.



Flame Retardant CAT5E Data Cables

CAT5E U/UTP4P24
CAT5E F/UTP4P24
CAT5E SF/UTP4P24



APPLICATION

Cat5E is a cable standard for Gigabit Ethernet and other network protocol, suitable for basic voice and data installations up to 100 MHz. In addition, these cables can be offered with copper wire braid armoured & flame retardant outer sheath, providing additional mechanical protection still maintaining the flexibility of the cable.

STANDARDS

Basic design adapted to EN50173

FIRE PERFORMANCE

| | |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

VOLTAGE RATING

60V

CABLE CONSTRUCTION

Conductors: 24AWG solid bare copper.

Insulation: HDPE.

Twinning: Two coloured insulated conductors twisted together to form a pair.

Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1,

IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

Cat5E F/UTP: These cables have collective shielding of aluminium/Polyester tape with drain wire.

Cat5E SF/UTP: These cables have double collective shieldings of aluminium/Polyester tape & copper wire braid.

PHYSICAL AND THERMAL PROPERTIES

Temperature range: -30°C ~ +75°C

Minimum bending radius during installation (mobile state): 8 x Overall Diameter

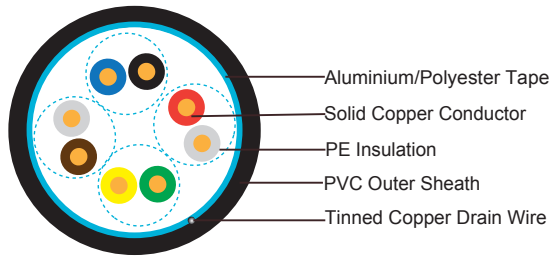
Minimum bending radius during operation (fixed state): 4 x Overall Diameter

ELECTRICAL PROPERTIES

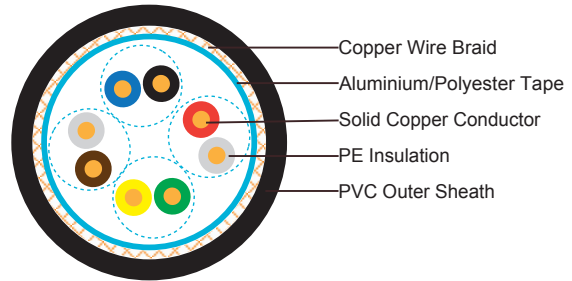
| | | |
|-----------------------------------|---------|---------------|
| AWG | | 24 |
| Nominal Conductor Diameter | mm | 0.5/0.51/0.53 |
| Maximum DC Resistance@20°C | Ω/100m | 9.38 |
| Maximum DCR Unbalance | % | 5 |
| Maximum Mutual Capacitance | pF/m | 55.8 |
| Maximum Capacitance Unbalance | pF/100m | 330 |
| Characteristic Impedance@1-100MHz | Ω | 100±15 |
| Maximum Propagation Delay Skew | ns/100m | 45 |

TRANSMISSION PROPERTIES

| FREQ MHz | Maximum Attenuation dB/100m | Minimum NEXT dB | Minimum PSNEXT dB | Minimum ELFEXT dB/100m | Minimum PSELFEXT dB/100m | Minimum RL dB |
|-------------|-----------------------------------|-----------------------|-------------------------|------------------------------|--------------------------------|---------------------|
| 0.772 | 1.8 | 67.0 | 64.0 | 66.0 | 63.0 | — |
| 1 | 2.0 | 65.3 | 62.3 | 63.8 | 60.8 | 20.0 |
| 4 | 4.1 | 56.3 | 53.3 | 51.7 | 48.7 | 23.0 |
| 8 | 5.8 | 51.8 | 48.8 | 45.7 | 42.7 | 24.5 |
| 10 | 6.5 | 50.3 | 47.3 | 43.8 | 40.8 | 25.0 |
| 16 | 8.2 | 47.3 | 44.3 | 39.7 | 36.7 | 25.0 |
| 20 | 9.3 | 45.8 | 42.8 | 37.7 | 34.7 | 25.0 |
| 25 | 10.4 | 44.3 | 41.3 | 35.8 | 32.8 | 24.3 |
| 31.25 | 11.7 | 42.9 | 39.9 | 33.9 | 30.9 | 23.6 |
| 62.5 | 17.0 | 38.4 | 35.4 | 27.8 | 24.8 | 21.5 |
| 100 | 22.0 | 35.3 | 32.3 | 23.8 | 20.8 | 20.1 |



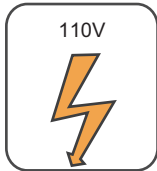
F/UTP CAT5E



SF/UTP CAT5E

CONSTRUCTION PARAMETERS

| Cable Code | Conductor Diameter | Diameter Over Insulation | Pairs | Screen | Nominal Overall Diameter |
|------------------|--------------------|--------------------------|-------|--------------------------------------------------|--------------------------|
| | mm | mm | | | mm |
| Cat5E U/UTP4P24 | 0.5/0.51 | 0.91 | 4 | Nil | 5.1 |
| Cat5E F/UTP4P24 | 0.53 | 1.00 | 4 | Overall Aluminum Tape Screen | 6.3 |
| Cat5E SF/UTP4P24 | 0.53 | 1.00 | 4 | Overall Aluminum Tape Screen & Copper Wire Braid | 6.6 |



Rated Voltage



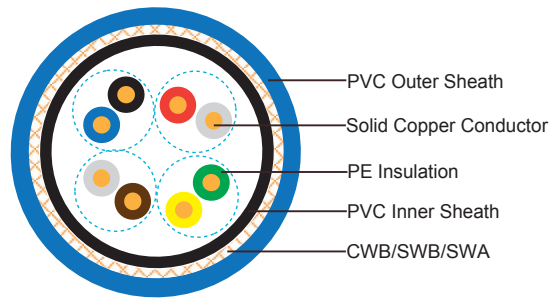
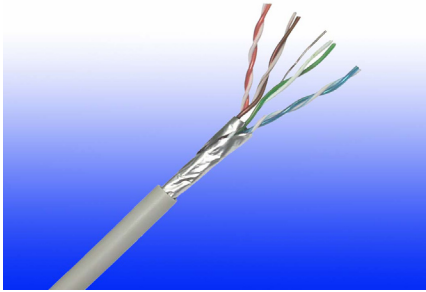
Standard



Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1

Flame Retardant CAT5E CWB/SWB/SWA Armoured Data Cables

CAT5E U/UTP4P24 CWB/SWB/SWA
 CAT5E F/UTP4P24 CWB/SWB/SWA
 CAT5E SF/FTP4P24 CWB/SWB/SWA



APPLICATION

Cat5E is a cable standard for Gigabit Ethernet and other network protocol, suitable for basic voice and data installations up to 100 MHz. In addition, these cables can be offered with copper wire braid armoured & flame retardant outer sheath, providing additional mechanical protection still maintaining the flexibility of the cable.

STANDARDS

Basic design adapted to EN50173

FIRE PERFORMANCE

| | |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
| Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)** | EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4 |

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

VOLTAGE RATING

60V

CABLE CONSTRUCTION

Conductors: 24AWG solid bare copper.

Insulation: HDPE.

Twinning: Two coloured insulated conductors twisted together to form a pair.

Inner Sheath: Flame retardant, low smoke and halogen-free polyolefin, coloured black.



Armouring:

CWB: Copper Wire Braid

SWB: Steel Wire Braid

SWA: Steel Wire Armour

Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

Cat5E F/UTP: These cables have collective shielding of aluminium/Polyester tape with drain wire.

Cat5E SF/UTP: These cables have double collective shieldings of aluminium/Polyester tape & copper wire braid.

PHYSICAL AND THERMAL PROPERTIES

Temperature range: -30°C ~ +75°C

Minimum bending radius during installation (mobile state): 8 x Overall Diameter

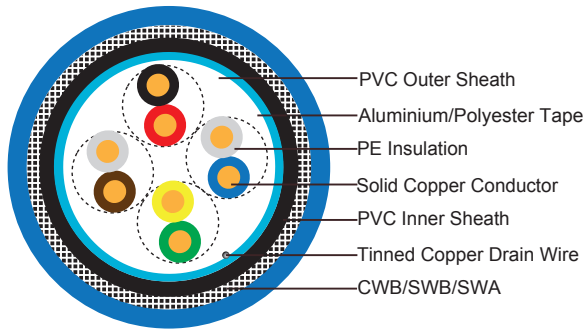
Minimum bending radius during operation (fixed state): 4 x Overall Diameter

ELECTRICAL PROPERTIES

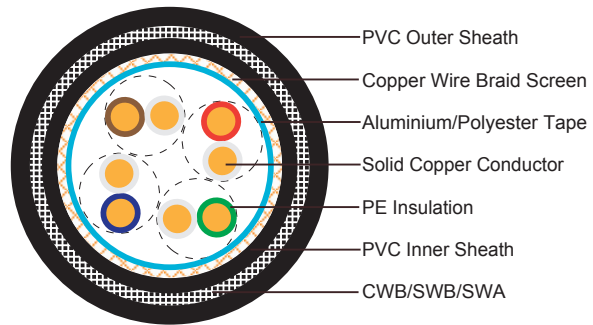
| | | |
|-----------------------------------|---------|----------|
| AWG | | 24 |
| Nominal Conductor Diameter | mm | 0.5/0.53 |
| Maximum DC Resistance@20°C | Ω/100m | 9.38 |
| Maximum DCR Unbalance | % | 5 |
| Maximum Mutual Capacitance | pF/m | 55.8 |
| Maximum Capacitance Unbalance | pF/100m | 330 |
| Characteristic Impedance@1-100MHz | Ω | 100±15 |
| Maximum Propagation Delay Skew | ns/100m | 45 |

TRANSMISSION PROPERTIES

| FREQ MHz | Maximum Attenuation dB/100m | Minimum NEXT dB | Minimum PSNEXT dB | Minimum ELFEXT dB/100m | Minimum PSELFEXT dB/100m | Minimum RL dB |
|-------------|-----------------------------------|-----------------------|-------------------------|------------------------------|--------------------------------|---------------------|
| 0.772 | 1.8 | 67.0 | 64.0 | 66.0 | 63.0 | — |
| 1 | 2.0 | 65.3 | 62.3 | 63.8 | 60.8 | 20.0 |
| 4 | 4.1 | 56.3 | 53.3 | 51.7 | 48.7 | 23.0 |
| 8 | 5.8 | 51.8 | 48.8 | 45.7 | 42.7 | 24.5 |
| 10 | 6.5 | 50.3 | 47.3 | 43.8 | 40.8 | 25.0 |
| 16 | 8.2 | 47.3 | 44.3 | 39.7 | 36.7 | 25.0 |
| 20 | 9.3 | 45.8 | 42.8 | 37.7 | 34.7 | 25.0 |
| 25 | 10.4 | 44.3 | 41.3 | 35.8 | 32.8 | 24.3 |
| 31.25 | 11.7 | 42.9 | 39.9 | 33.9 | 30.9 | 23.6 |
| 62.5 | 17.0 | 38.4 | 35.4 | 27.8 | 24.8 | 21.5 |
| 100 | 22.0 | 35.3 | 32.3 | 23.8 | 20.8 | 20.1 |



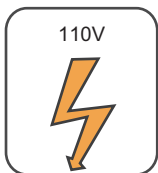
F/UTP CAT5E



SF/UTP CAT5E

CONSTRUCTION PARAMETERS

| Cable Code | Construction | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Nominal Weight |
|----------------------|------------------------------------------------------------|------------------------------|--------------------------------|--------------------------------|--------------------------|----------------|
| | No. of elements×No. of cores in element×Conductor diameter | | | | | |
| | No.×2×mm | mm | mm | mm | mm | kg/km |
| CAT5E U/UTP4P24 CWB | 4×2×0.5 | 0.2 | 0.6 | 1.0 | 7.68 | 97 |
| CAT5E U/UTP4P24 SWB | 4×2×0.5 | 0.2 | 0.6 | 1.0 | 7.68 | 93 |
| CAT5E U/UTP4P24 SWA | 4×2×0.5 | 0.2 | 0.6 | 1.0 | 8.68 | 165 |
| CAT5E F/UTP4P24 CWB | 4×2×0.53 | 0.2 | 0.6 | 1.0 | 8.28 | 116 |
| CAT5E F/UTP4P24 SWB | 4×2×0.53 | 0.2 | 0.6 | 1.0 | 8.28 | 112 |
| CAT5E F/UTP4P24 SWA | 4×2×0.53 | 0.2 | 0.6 | 1.0 | 9.28 | 192 |
| CAT5E SF/UTP4P24 CWB | 4×2×0.53 | 0.2 | 0.6 | 1.0 | 8.76 | 123 |
| CAT5E SF/UTP4P24 SWB | 4×2×0.53 | 0.2 | 0.6 | 1.0 | 8.76 | 119 |
| CAT5E SF/UTP4P24 SWA | 4×2×0.53 | 0.2 | 0.6 | 1.0 | 9.76 | 216 |



Rated Voltage



Standard



Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1

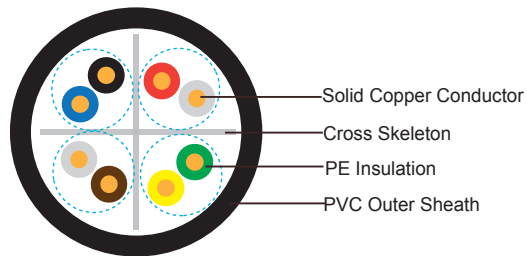
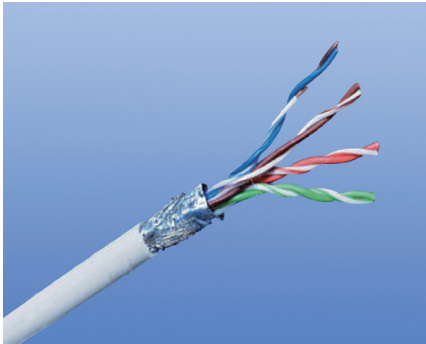


Reduced Fire Propagation**
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4



Flame Retardant CAT6 Data Cables

CAT6 U/UTP4P23
CAT6 F/UTP4P23
CAT6 SF/FTP4P23



APPLICATION

Cat6 Cable is a cable standard for Gigabit Ethernet and other network protocol, suitable for 10BaseT, 100BaseTx & 1000BaseT (Gigabit Ethernet) application. In addition, these cables can be offered with copper wire braid armoured & flame retardant outer sheath, providing additional mechanically protection still maintaining the flexibility of the cable.

STANDARDS

Basic design adapted to EN50173

FIRE PERFORMANCE

| | |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

VOLTAGE RATING

60V

CABLE CONSTRUCTION

Conductors: 23AWG solid bare copper.

Insulation: HDPE.

Twining: Two coloured insulated conductors twisted together to form a pair.

Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1,

IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

Cat6 F/UTP: These cables have collective shielding of aluminium/Polyester tape with drain wire.

Cat6 SF/UTP: These cables have double collective shieldings of aluminium/Polyester tape & copper wire braid with drain wire.

PHYSICAL AND THERMAL PROPERTIES

Temperature range: -30°C ~ +75°C

Minimum bending radius during installation (mobile state): 8 x Overall Diameter

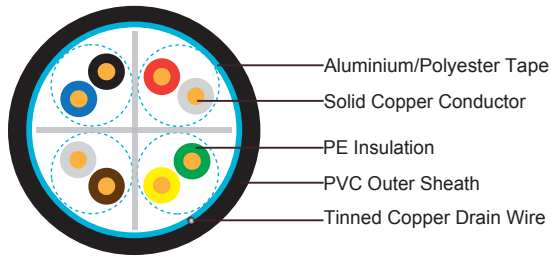
Minimum bending radius during operation (fixed state): 4 x Overall Diameter

ELECTRICAL PROPERTIES

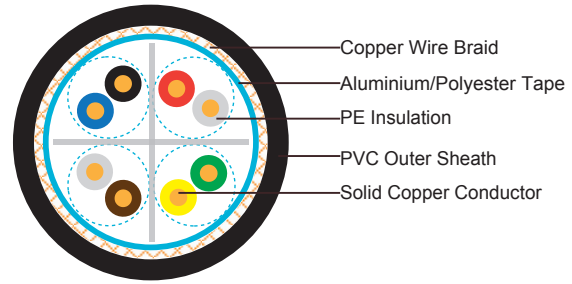
| | | |
|-----------------------------------|---------|----------------|
| AWG | | 23 |
| Nominal Conductor Diameter | mm | 0.56/0.57/0.58 |
| Maximum DC Resistance@20°C | Ω/100m | 9.38 |
| Maximum DCR Unbalance | % | 3 |
| Maximum Mutual Capacitance | pF/m | 5.8 |
| Maximum Capacitance Unbalance | pF/100m | 30 |
| Characteristic Impedance@1-100MHz | Ω | 100±15 |
| Maximum Propagation Delay Skew | ns/100m | 18 |

TRANSMISSION PROPERTIES

| FREQ MHz | Maximum Attenuation dB/100m | Minimum NEXT dB | Minimum PSNEXT dB | Minimum ELFEXT dB/100m | Minimum PSELFEXT dB/100m | Minimum RL dB |
|-------------|-----------------------------------|-----------------------|-------------------------|------------------------------|--------------------------------|---------------------|
| 0.772 | 1.8 | 76.0 | 74. | 70.0 | 67.0 | — |
| 1 | 2.0 | 74.3 | 72.3 | 67.8 | 64.8 | 20.0 |
| 4 | 3.8 | 65.3 | 63.3 | 55.7 | 52.7 | 23.0 |
| 8 | 5.3 | 60.8 | 58.8 | 49.7 | 46.7 | 24.5 |
| 10 | 6.0 | 59.3 | 57.3 | 47.8 | 44.8 | 25.0 |
| 16 | 7.6 | 56.3 | 54.3 | 43.7 | 40.7 | 25.0 |
| 20 | 8.5 | 54.8 | 52.8 | 41.7 | 38.7 | 25.0 |
| 25 | 9.5 | 53.3 | 51.3 | 39.8 | 36.8 | 24.3 |
| 31.25 | 10.7 | 51.9 | 49.9 | 37.9 | 34.9 | 23.6 |
| 62.5 | 15.4 | 47.4 | 45.4 | 31.8 | 28.8 | 21.5 |
| 100 | 19.8 | 44.3 | 42.3 | 27.8 | 24.8 | 20.1 |
| 155 | 25.2 | 41.5 | 39.5 | 23.9 | 20.9 | 18.8 |
| 200 | 29.0 | 39.8 | 37.8 | 21.7 | 18.7 | 18.0 |
| 250 | 32.8 | 38.3 | 36.3 | 19.8 | 16.8 | 17.3 |



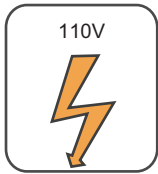
F/UTP CAT6



SF/UTP CAT6

CONSTRUCTION PARAMETERS

| Cable Code | Conductor Diameter | Diameter Over Insulation | Pairs | Screen | Overall Diameter |
|-----------------|--------------------|--------------------------|-------|--------------------------------------------------|------------------|
| | mm | mm | | | mm |
| Cat6 U/UTP4P23 | 0.56/0.57 | 1.02 | 4 | Nil | 6.0 |
| Cat6 F/UTP4P23 | 0.57/0.58 | 1.02 | 4 | Overall Aluminum Tape Screen | 6.3 |
| Cat6 SF/UTP4P23 | 0.57/0.58 | 1.02 | 4 | Overall Aluminum Tape Screen & Copper Wire Braid | 6.6 |



Rated Voltage



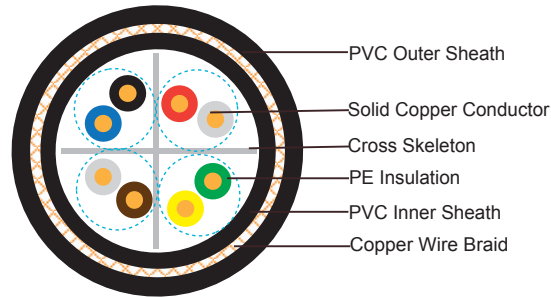
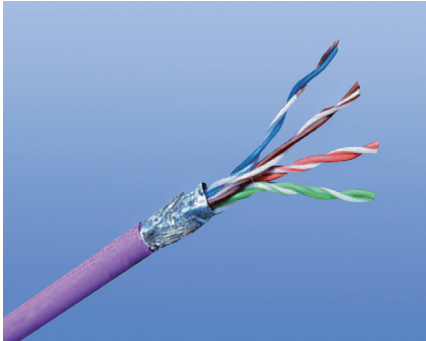
Standard



Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1

Flame Retardant CAT6 CWB/SWB/SWA Armoured Data Cables

CAT6 U/UTP4P23 CWB/SWB/SWA
 CAT6 F/UTP4P23 CWB/SWB/SWA
 CAT6 SF/UTP4P23 CWB/SWB/SWA



APPLICATION

Cat6 Cable is a cable standard for Gigabit Ethernet and other network protocol, suitable for 10BaseT, 100BaseTx & 1000BaseT (Gigabit Ethernet) application. In addition, these cables can be offered with copper wire braid armoured & flame retardant outer sheath, providing additional mechanically protection still maintaining the flexibility of the cable.

STANDARDS

Basic design adapted to EN50173

FIRE PERFORMANCE

| | |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
| Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)** | EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4 |

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

VOLTAGE RATING

60V

CABLE CONSTRUCTION

Conductors: 23AWG solid bare copper.

Insulation: HDPE .

Twinning: Two coloured insulated conductors twisted together to form a pair.

Inner Sheath: Flame retardant, low smoke and halogen-free polyolefin, coloured black.

Armouring:

CWB: Copper Wire Braid

SWB: Steel Wire Braid

SWA: Steel Wire Armour



Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

Cat6 F/UTP: These cables have collective shielding of aluminium/Polyester tape with drain wire.

Cat6 SF/UTP: These cables have double collective shieldings of aluminium/Polyester tape & copper wire braid.

PHYSICAL AND THERMAL PROPERTIES

Temperature range: -30°C ~ +75°C

Minimum bending radius during installation (mobile state): 8 x Overall Diameter

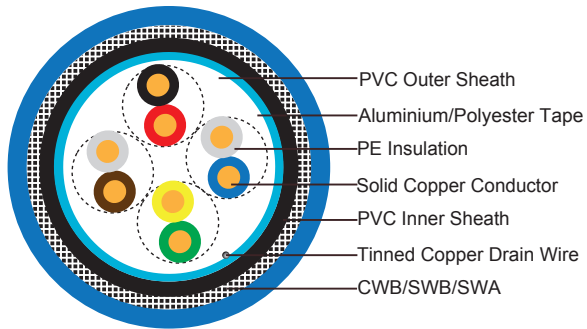
Minimum bending radius during operation (fixed state): 4 x Overall Diameter

ELECTRICAL PROPERTIES

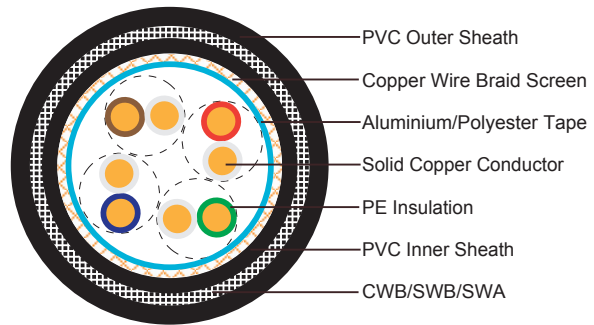
| | | |
|-----------------------------------|---------|----------------|
| AWG | | 23 |
| Nominal Conductor Diameter | mm | 0.56/0.57/0.58 |
| Maximum DC Resistance@20°C | Ω/100m | 9.38 |
| Maximum DCR Unbalance | % | 3 |
| Maximum Mutual Capacitance | pF/m | 5.8 |
| Maximum Capacitance Unbalance | pF/100m | 30 |
| Characteristic Impedance@1-100MHz | Ω | 100±15 |
| Maximum Propagation Delay Skew | ns/100m | 18 |

TRANSMISSION PROPERTIES

| FREQ MHz | Maximum Attenuation dB/100m | Minimum NEXT dB | Minimum PSNEXT dB | Minimum ELFEXT dB/100m | Minimum PSELFEXT dB/100m | Minimum RL dB |
|-------------|-----------------------------------|-----------------------|-------------------------|------------------------------|--------------------------------|---------------------|
| 0.772 | 1.8 | 76.0 | 74. | 70.0 | 67.0 | — |
| 1 | 2.0 | 74.3 | 72.3 | 67.8 | 64.8 | 20.0 |
| 4 | 3.8 | 65.3 | 63.3 | 55.7 | 52.7 | 23.0 |
| 8 | 5.3 | 60.8 | 58.8 | 49.7 | 46.7 | 24.5 |
| 10 | 6.0 | 59.3 | 57.3 | 47.8 | 44.8 | 25.0 |
| 16 | 7.6 | 56.3 | 54.3 | 43.7 | 40.7 | 25.0 |
| 20 | 8.5 | 54.8 | 52.8 | 41.7 | 38.7 | 25.0 |
| 25 | 9.5 | 53.3 | 51.3 | 39.8 | 36.8 | 24.3 |
| 31.25 | 10.7 | 51.9 | 49.9 | 37.9 | 34.9 | 23.6 |
| 62.5 | 15.4 | 47.4 | 45.4 | 31.8 | 28.8 | 21.5 |
| 100 | 19.8 | 44.3 | 42.3 | 27.8 | 24.8 | 20.1 |
| 155 | 25.2 | 41.5 | 39.5 | 23.9 | 20.9 | 18.8 |
| 200 | 29.0 | 39.8 | 37.8 | 21.7 | 18.7 | 18.0 |
| 250 | 32.8 | 38.3 | 36.3 | 19.8 | 16.8 | 17.3 |



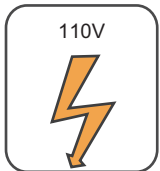
F/UTP CAT6



SF/UTP CAT6

CONSTRUCTION PARAMETERS

| Cable Code | Construction No. of elements×No. of cores in element×Conductor diameter | Nominal Insulation Thickness | Nominal Inner Sheath Thickness | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Nominal Weight |
|---------------------|-------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------|-----------------------------------------|--------------------------------|-------------------|
| | No.×2×mm | mm | mm | mm | mm | kg/km |
| CAT6 U/UTP4P23 CWB | 4×2×0.56/0.57 | 0.2 | 0.6 | 1.0 | 7.88 | 115 |
| CAT6 U/UTP4P23 SWB | 4×2×0.56/0.57 | 0.2 | 0.6 | 1.0 | 7.88 | 109 |
| CAT6 U/UTP4P23 SWA | 4×2×0.56/0.57 | 0.2 | 0.6 | 1.0 | 8.88 | 189 |
| CAT6 F/UTP4P23 CWB | 4×2×0.57/0.58 | 0.2 | 0.6 | 1.0 | 8.48 | 126 |
| CAT6 F/UTP4P23 SWB | 4×2×0.57/0.58 | 0.2 | 0.6 | 1.0 | 8.48 | 132 |
| CAT6 F/UTP4P23 SWA | 4×2×0.57/0.58 | 0.2 | 0.6 | 1.0 | 9.48 | 213 |
| CAT6 SF/UTP4P23 CWB | 4×2×0.57/0.58 | 0.2 | 0.6 | 1.0 | 8.96 | 154 |
| CAT6 SF/UTP4P23 SWB | 4×2×0.57/0.58 | 0.2 | 0.6 | 1.0 | 8.96 | 148 |
| CAT6 SF/UTP4P23 SWA | 4×2×0.57/0.58 | 0.2 | 0.6 | 1.0 | 9.96 | 242 |



Rated Voltage



Standard



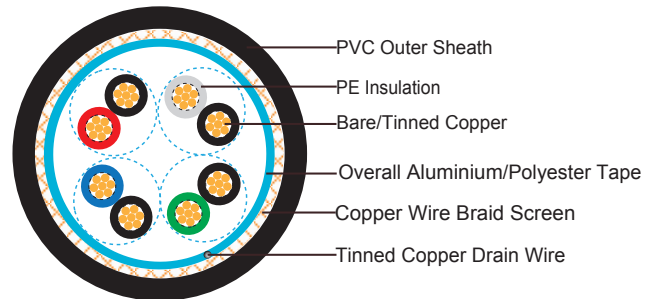
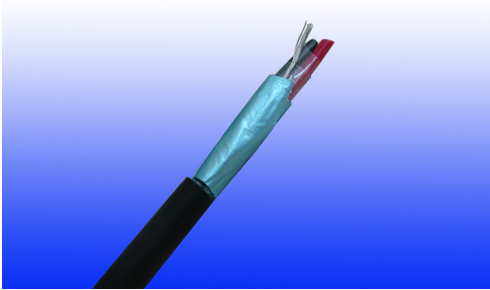
Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1



Reduced Fire Propagation**
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4



Flame Retardant RS485 Databus Cables



APPLICATION

The cables are designed for RS485 data connections where continued functionality is required during a fire situation. This cable combines low capacitance insulation with one of the highest levels of screening to provide high speed, interference free, data transmission where continued functionality is required during a fire situation.

STANDARDS

Basic design adapted to EIA/TIA 485

FIRE PERFORMANCE

| | |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

CABLE CONSTRUCTION

Multipair RS 485 Overall Screened Databus Cable

Conductors: Tinned copper wire, stranded according to IEC 60228 class 2.

Insulation: Foam PE or foam skin PE.

Cabling Elements: Insulated cores are twisted to form pairs with varying lay length to minimize crosstalk. Two pair cable had four cores laid in quad formation.

Cabling: Pairs are cabled together in concentric layers.

Overall Screen: Aluminum/polyester tape with tinned copper drain wire.

Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

Multipair RS 485 Overall Double Screened Databus Cable

Conductors: Tinned copper wire, stranded according to IEC 60228 class 2.

Insulation: Foam PE or foam skin PE.

Cabling Elements: Insulated cores are twisted to form pairs with varying lay length to minimize crosstalk. Two pair cable had four cores laid in quad formation.

Cabling: Pairs are cabled together in concentric layers.

Overall Screen: Aluminium/polyester tape+copper wire braid.

Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

Multipair RS 485 Individual & Overall Screened Databus Cable

Conductors: Tinned copper wire, stranded according to IEC 60228 class 2.

Insulation: Foam PE or foam skin PE.

Cabling Elements: Insulated cores are twisted to form pairs with varying lay length to minimize crosstalk. Two pair cable had four cores laid in quad formation.

Cabling: Pairs are cabled together in concentric layers.

Individual Screen: Individual aluminium/polyester tape.

Overall Screen: Copper wire braid.

Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

Multipair RS 485 Overall Screened Databus Cable

Conductors: Tinned copper wire, stranded according to IEC 60228 class 2.

Insulation: Foam PE or foam skin PE.

Cabling Elements: Insulated cores are twisted to form pairs with varying lay length to minimize crosstalk. Two pair cable had four cores laid in quad formation.

Cabling: Pairs are cabled together in concentric layers.

Overall Screen: Copper wire braid.

Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -20°C - +90°C

Temperature range during installation (mobile state): -5°C - +60°C

Minimum bending radius: 8 x Overall Diameter



ELECTRICAL PROPERTIES

| | |
|------------------------|-----------------------------------|
| Dielectric test | 1000V r.m.s. for 5' (core-core) |
| | 1000V r.m.s. for 5' (core-screen) |
| Impedance | 120Ω |
| Capacitance | 45 nF/km conductor to conductor |
| | 90 nF/km conductor to shield |

CONSTRUCTION PARAMETERS

Multipair RS 485 Overall Screened Databus Cable

RE-02Y(St)Y / RE-02YS(St)Y

| No. of Pairs | Nominal Cross Sectional Area | No./Nominal Diameter of Strands | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
|--------------|------------------------------|---------------------------------|------------------------------|--------------------------|--------------------------|----------------|
| No. | mm ² | No./mm | mm | mm | mm | kg/km |
| 1 | 0.22 | 7/0.2 | 0.7 | 1.1 | 6.0 | 21 |
| 2 | 0.22 | 7/0.2 | 0.7 | 1.1 | 9.2 | 42 |
| 4 | 0.22 | 7/0.2 | 0.7 | 1.1 | 10.7 | 68 |
| 1 | 0.50 | 16/0.2 | 0.7 | 1.1 | 6.6 | 32 |
| 2 | 0.50 | 16/0.2 | 0.7 | 1.1 | 10.3 | 68 |
| 4 | 0.50 | 16/0.2 | 0.7 | 1.1 | 12.2 | 115 |
| 1 | 0.75 | 24/0.2 | 0.7 | 1.1 | 7.1 | 40 |
| 2 | 0.75 | 24/0.2 | 0.7 | 1.1 | 11.2 | 84 |
| 4 | 0.75 | 24/0.2 | 0.7 | 1.1 | 13.3 | 144 |
| 1 | 1.00 | 30/0.2 | 0.7 | 1.1 | 7.2 | 49 |
| 2 | 1.00 | 30/0.2 | 0.7 | 1.1 | 11.6 | 105 |
| 4 | 1.00 | 30/0.2 | 0.7 | 1.1 | 13.6 | 182 |

Multipair RS 485 Overall Double Screened Databus Cable

RE-02Y(St)CY / RE-02YS(St)CY

| No. of Pairs | Nominal Cross Sectional Area | No./Nominal Diameter of Strands | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
|--------------|------------------------------|---------------------------------|------------------------------|--------------------------|--------------------------|----------------|
| No. | mm ² | No./mm | mm | mm | mm | kg/km |
| 1 | 0.22 | 7/0.2 | 0.7 | 1.1 | 6.5 | 34 |
| 2 | 0.22 | 7/0.2 | 0.7 | 1.1 | 9.6 | 67 |
| 4 | 0.22 | 7/0.2 | 0.7 | 1.1 | 11.2 | 97 |
| 1 | 0.50 | 16/0.2 | 0.7 | 1.1 | 7.1 | 48 |

| No. of Pairs | Nominal Cross Sectional Area | No./Nominal Diameter of Strands | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
|--------------|------------------------------|---------------------------------|------------------------------|--------------------------|--------------------------|----------------|
| No. | mm ² | No./mm | mm | mm | mm | kg/km |
| 2 | 0.50 | 16/0.2 | 0.7 | 1.1 | 10.8 | 97 |
| 4 | 0.50 | 16/0.2 | 0.7 | 1.1 | 12.7 | 150 |
| 1 | 0.75 | 24/0.2 | 0.7 | 1.1 | 7.6 | 57 |
| 2 | 0.75 | 24/0.2 | 0.7 | 1.1 | 11.8 | 116 |
| 4 | 0.75 | 24/0.2 | 0.7 | 1.1 | 13.8 | 182 |
| 1 | 1.00 | 30/0.2 | 0.7 | 1.1 | 7.7 | 67 |
| 2 | 1.00 | 30/0.2 | 0.7 | 1.1 | 12.1 | 138 |
| 4 | 1.00 | 30/0.2 | 0.7 | 1.1 | 14.2 | 222 |

Multipair RS 485 Individual & Overall Screened Databus Cable

RE-02Y(St)Y PiMF / RE-02YS(St)Y PiMF

| No. of Pairs | Nominal Cross Sectional Area | No./Nominal Diameter of Strands | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
|--------------|------------------------------|---------------------------------|------------------------------|--------------------------|--------------------------|----------------|
| No. | mm ² | No./mm | mm | mm | mm | kg/km |
| 1 | 0.22 | 7/0.2 | 0.7 | 1.1 | 6.4 | 35 |
| 2 | 0.22 | 7/0.2 | 0.7 | 1.1 | 9.6 | 69 |
| 4 | 0.22 | 7/0.2 | 0.7 | 1.1 | 11.2 | 106 |
| 1 | 0.50 | 16/0.2 | 0.7 | 1.1 | 7.0 | 49 |
| 2 | 0.50 | 16/0.2 | 0.7 | 1.1 | 10.8 | 100 |
| 4 | 0.50 | 16/0.2 | 0.7 | 1.1 | 12.7 | 159 |
| 1 | 0.75 | 24/0.2 | 0.7 | 1.1 | 7.5 | 58 |
| 2 | 0.75 | 24/0.2 | 0.7 | 1.1 | 11.8 | 119 |
| 4 | 0.75 | 24/0.2 | 0.7 | 1.1 | 13.6 | 174 |
| 1 | 1.00 | 30/0.2 | 0.7 | 1.1 | 7.6 | 68 |
| 2 | 1.00 | 30/0.2 | 0.7 | 1.1 | 12.1 | 142 |
| 4 | 1.00 | 30/0.2 | 0.7 | 1.1 | 14.2 | 234 |



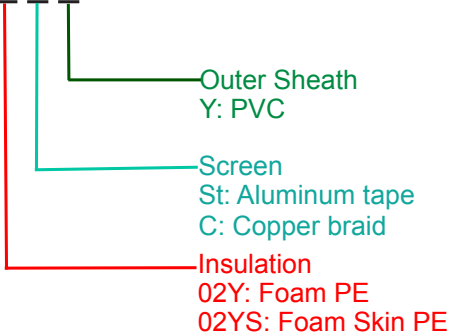
Multipair RS 485 Overall Screened Databus Cable

RE-02YCY / RE-02YSCY

| No. of Pairs | Nominal Cross Sectional Area | No./Nominal Diameter of Strands | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Approx. Weight |
|--------------|------------------------------|---------------------------------|------------------------------|--------------------------|--------------------------|----------------|
| No. | mm ² | No./mm | mm | mm | mm | kg/km |
| 1 | 0.22 | 7/0.2 | 0.7 | 1.1 | 8.4 | 31 |
| 2 | 0.22 | 7/0.2 | 0.7 | 1.1 | 11.7 | 61 |
| 4 | 0.22 | 7/0.2 | 0.7 | 1.1 | 13.6 | 91 |
| 1 | 0.50 | 16/0.2 | 0.7 | 1.1 | 9.0 | 44 |
| 2 | 0.50 | 16/0.2 | 0.7 | 1.1 | 12.9 | 91 |
| 4 | 0.50 | 16/0.2 | 0.7 | 1.1 | 15.1 | 142 |
| 1 | 0.75 | 24/0.2 | 0.7 | 1.1 | 9.5 | 53 |
| 2 | 0.75 | 24/0.2 | 0.7 | 1.1 | 13.9 | 109 |
| 4 | 0.75 | 24/0.2 | 0.7 | 1.1 | 16.0 | 174 |
| 1 | 1.00 | 30/0.2 | 0.7 | 1.1 | 9.6 | 63 |
| 2 | 1.00 | 30/0.2 | 0.7 | 1.1 | 14.2 | 131 |
| 4 | 1.00 | 30/0.2 | 0.7 | 1.1 | 16.6 | 213 |

TYPE CODES

RE-A-B-D



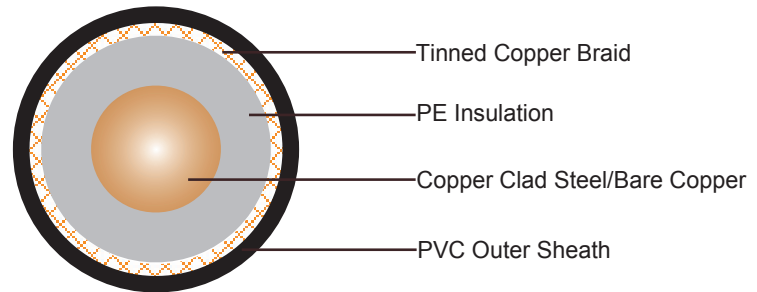
Standard



Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1

Flame Retardant RG59 B/U Coaxial cables

RG59 B/U



APPLICATION

The cables are used as a connection cable in the high signal sequences of wireless and data communication systems where lower attenuation required, RF and microwave transmission, data transmission and instrumentation control.

STANDARDS

Basic design adapted to MIL-C-17

FIRE PERFORMANCE

| | |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

CABLE CONSTRUCTION

Conductors: Copper clad steel or bare copper, solid according to IEC 60228 class 1.

Insulation: PE compound.

Overall Screen: Plain copper wire braid

Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -30°C - +70°C

Temperature range during installation (mobile state): -5°C - +60°C

Minimum bending radius: 8 x Overall Diameter



ELECTRICAL PROPERTIES

| | |
|-----------------------|-------------|
| Impedance | 75±5Ω |
| Capacitance | 67 nF/km |
| Velocity ratio | 67% |
| Insulation resistance | >2000 MΩ.Km |
| Shield coverage | 95% |
| DC resistance | |
| Inner conductor | 154 Ω/km |
| Outer conductor | 9 Ω/km |

ATTENUATION

| Frequency(MHz) | Attenuation (dB/100 m) | Attenuation (dB/100ft) |
|----------------|------------------------|------------------------|
| 50 | 7.4 | 2.26 |
| 100 | 10.7 | 3.26 |
| 200 | 15.7 | 4.79 |
| 400 | 22.7 | 6.92 |
| 500 | 25.7 | 7.84 |
| 600 | 28.7 | 8.75 |
| 800 | 33.6 | 10.24 |
| 1000 | 38.0 | 11.59 |

RETURN LOSS

| Frequency(MHz) | Return Loss (dB) |
|----------------|------------------|
| 30-300 MHz | >31dB |
| 300-600 MHz | >28dB |
| 600-900 MHz | >24dB |

CONSTRUCTION PARAMETERS

| Cable Code | Conductor Diameter | Nominal Insulation Diameter | Nominal Screen No.x Diameter | Nominal Overall Diameter | Approx. Weight |
|------------|--------------------|-----------------------------|------------------------------|--------------------------|----------------|
| | mm | mm | No. x mm | mm | kg/km |
| RG59 B/U | 0.58 ± 0.03 | 3.70 ± 0.10 m | 120 x 0.15 | 6.20 | 60.3 |



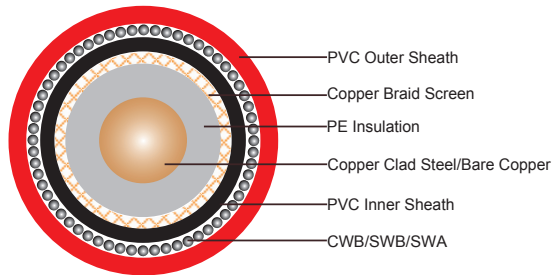
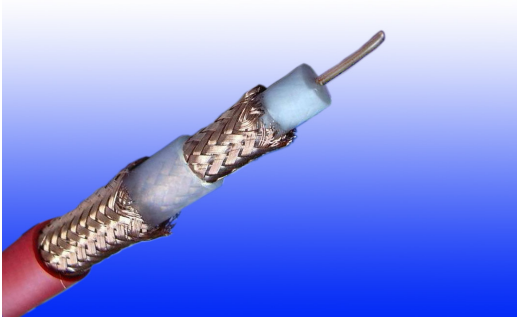
Standard



Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1

Flame Retardant RG59 B/U CWB/SWB/SWA Armoured Coaxial Cables

RG59 B/U CWB/SWB/SWA



APPLICATION

The cables are used as a connection cable in the high signal sequences of wireless and data communication systems where lower attenuation required, RF and microwave transmission, data transmission and instrumentation control.

STANDARDS

Basic design adapted to MIL-C-17

FIRE PERFORMANCE

| | |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
| Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)** | EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4 |

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

CABLE CONSTRUCTION

Conductors: Copper clad steel or bare copper, solid according to IEC 60228 class 1.

Insulation: PE compound.

Overall Screen: Plain copper wire braid

Inner Sheath: Thermoplastic PVC compound.

Armouring:

CWB: Copper Wire Braid

SWB: Steel Wire Braid

SWA: Steel Wire Armour

Outer Sheath: Thermoplastic PVC compound.



Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range: -30°C - +75°C

Minimum bending radius: 15 X Overall Diameter

ELECTRICAL PROPERTIES

| | |
|-----------------------|-------------|
| Impedance | 75±5Ω |
| Capacitance | 67 nF/km |
| Velocity ratio | 66% |
| Insulation resistance | >2000 MΩ.Km |
| Shield coverage | 95% |
| DC resistance | |
| Inner conductor | 154 Ω/km |
| Outer conductor | 9 Ω/km |

ATTENUATION

| Frequency(MHz) | Attenuation (dB/100 m) | Attenuation (dB/100ft) |
|----------------|------------------------|------------------------|
| 50 | 7.4 | 2.26 |
| 100 | 10.7 | 3.26 |
| 200 | 15.7 | 4.79 |
| 400 | 22.7 | 6.92 |
| 500 | 25.7 | 7.84 |
| 600 | 28.7 | 8.75 |
| 800 | 33.6 | 10.24 |
| 1000 | 38.0 | 11.59 |

RETURN LOSS

| Frequency(MHz) | Return Loss (dB) |
|----------------|------------------|
| 30-300 MHz | >31dB |
| 300-600 MHz | >28dB |
| 600-900 MHz | >24dB |

CONSTRUCTION PARAMETERS

| Cable Code | Nominal Inner Conductor Diameter | Nominal Insulation Thickness | Nominal Outer Sheath Thickness | Nominal Overall Diameter | Nominal Weight |
|--------------|----------------------------------|------------------------------|--------------------------------|--------------------------|----------------|
| | mm | mm | mm | mm | kg/km |
| RG59 B/U CWB | 0.58 | 1.4 | 1.2 | 9.78 | 146 |
| RG59 B/U SWB | 0.58 | 1.4 | 1.2 | 9.78 | 114 |
| RG59 B/U SWA | 0.58 | 1.4 | 1.2 | 10.8 | 220 |



Standard



Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1

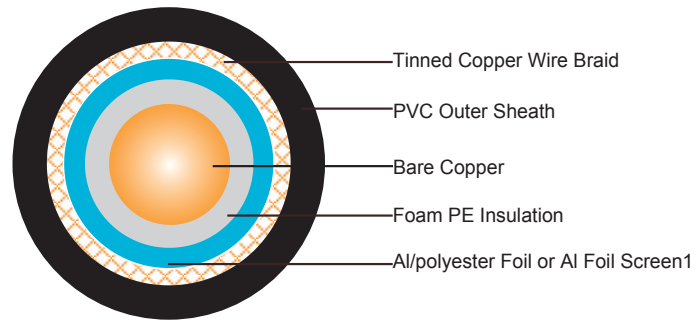


Reduced Fire Propagation**
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4



Flame Retardant RG6/U4 Coaxial cables

RG6/U4



APPLICATION

The cables are used as a connection cable in the high signal sequences of wireless and data communication systems where lower attenuation required, RF and microwave transmission, data transmission and instrumentation control.

STANDARDS

Basic design adapted to MIL-C-17

FIRE PERFORMANCE

| | |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

CABLE CONSTRUCTION

Conductors: 18AWG bare copper wire, solid according to IEC 60228 class 1.

Insulation: Foam PE.

Screen1: Aluminium/polyester or aluminium tape.

Screen2: Tinned copper wire braid.

Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -30°C - +70°C

Temperature range during installation (mobile state): -5°C - +60°C

Minimum bending radius: 8 X Overall Diameter

ELECTRICAL PROPERTIES

| | |
|-----------------------|-------------|
| Impedance | 75±5Ω |
| Capacitance | 53 nF/km |
| Velocity ratio | 83% |
| Insulation resistance | >5000 MΩ.Km |
| DC resistance | |
| Inner conductor | 23.1 Ω/km |
| Outer conductor | 28 Ω/km |

ATTENUATION

| Frequency(MHz) | Attenuation (dB/100 m) | Attenuation (dB/100ft) |
|----------------|------------------------|------------------------|
| 50 | 4.5 | 1.4 |
| 100 | 6.2 | 1.9 |
| 200 | 8.9 | 2.7 |
| 500 | 15.1 | 4.6 |
| 600 | 16.8 | 5.1 |
| 800 | 19.0 | 5.8 |
| 1000 | 21.5 | 6.6 |
| 1350 | 24.9 | 7.6 |
| 1750 | 28.3 | 8.6 |
| 2150 | 31.1 | 9.5 |
| 2400 | 33.3 | 10.1 |

RETURN LOSS

| Frequency(MHz) | Return Loss (dB) |
|----------------|------------------|
| 30-300 | >28dB |
| 300-600 | >24dB |
| 600-900 | >22dB |



CONSTRUCTION PARAMETERS

| Cable Code | Conductor Diameter | Nominal Insulation Diameter | Nominal Screen No.x Diameter | Nominal Overall Diameter | Approx. Weight |
|------------|--------------------|-----------------------------|------------------------------|--------------------------|----------------|
| | mm | mm | No. x mm | mm | kg/km |
| RG6/U4 | 1.02 | 4.6 ± 0.20 | 64 x 0.12 | 6.8 ± 0.20 | 46 |



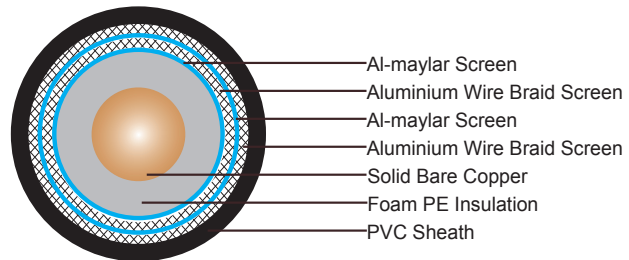
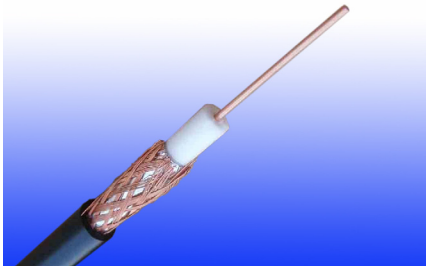
Standard



Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1

Flame Retardant RG6 Quad Shield Coaxial cables

RG6 Quad Shield



APPLICATION

The cables are used as a connection cable in the high signal sequences of wireless and data communication systems where lower attenuation required, RF and microwave transmission, data transmission and instrumentation control.

STANDARDS

Basic design adapted to MIL-C-17

FIRE PERFORMANCE

| | |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

CABLE CONSTRUCTION

Conductors: 18AWG bare copper wire, solid according to IEC 60228 class 1.

Insulation: Foam PE.

Screen1: Aluminium-maylar.

Screen2: Aluminium wire braid.

Screen3: Aluminium-maylar.

Screen4: Aluminium wire braid.

Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -30°C - +70°C



Temperature range during installation (mobile state): -5°C - +60°C
Minimum bending radius: 8 X Overall Diameter

ELECTRICAL PROPERTIES

| | |
|-----------------------|-------------|
| Impedance | 75±5Ω |
| Capacitance | 54 nF/km |
| Velocity ratio | 82% |
| Insulation resistance | >5000 MΩ.Km |
| DC resistance | |
| Inner conductor | 24.1 Ω/km |

ATTENUATION

| Frequency(MHz) | Attenuation (dB/100 m) | Attenuation (dB/100ft) |
|----------------|------------------------|------------------------|
| 50 | 4.8 | 1.5 |
| 100 | 6.7 | 2.0 |
| 200 | 9.3 | 2.8 |
| 500 | 15.0 | 4.6 |
| 600 | 16.9 | 5.1 |
| 800 | 19.4 | 5.9 |
| 1000 | 21.6 | 6.6 |
| 1350 | 24.2 | 7.4 |
| 1750 | 28.0 | 8.4 |
| 2150 | 31.5 | 9.6 |
| 2400 | 32.8 | 10.0 |

CONSTRUCTION PARAMETERS

| Cable Code | Conductor Diameter | Nominal Insulation Diameter | Nominal Screen2 No.x Diameter | Nominal Screen4 No.x Diameter | Nominal Overall Diameter | Approx. Weight |
|------------|--------------------|-----------------------------|----------------------------------|----------------------------------|--------------------------|----------------|
| | mm | mm | No. x mm | No. x mm | mm | kg/km |
| RG6 QUAD | 1.02 | 4.6 ± 0.20 | 80 x 0.12 | 64 x 0.12 | 7.55 ± 0.20 | 59.8 |



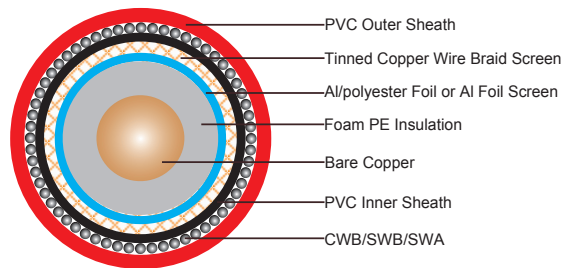
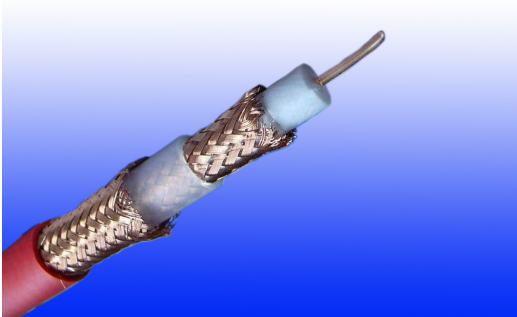
Standard



Flame Retardancy**
 NF C32-070-2.1(C2)
 IEC60332-1-2/EN50265-2-1

Flame Retardant RG6/U4 CWB/SWB/SWA Armoured Coaxial cables

RG6/U4 CWB/SWB/SWA



APPLICATION

The cables are used as a connection cable in the high signal sequences of wireless and data communication systems where lower attenuation required, RF and microwave transmission, data transmission and instrumentation control.

STANDARDS

Basic design adapted to MIL-C-17

FIRE PERFORMANCE

| | |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
| Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)** | EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4 |

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

CABLE CONSTRUCTION

Conductors: 18AWG bare copper wire, solid according to IEC 60228 class 1.

Insulation: Foam PE.

Screen1: Aluminium/polyester or aluminium tape.

Screen2: Tinned copper wire braid.

Inner Sheath: PVC compound.

Armour:

CWB: Copper Wire Braid

SWB: Steel Wire Braid

SWA: Steel Wire Armour



Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range: -30°C - +75°C

Minimum bending radius: 15 X Overall Diameter

ELECTRICAL PROPERTIES

| | |
|-----------------------|-------------|
| Impedance | 75±5Ω |
| Capacitance | 53 nF/km |
| Velocity ratio | 83% |
| Insulation resistance | >5000 MΩ.Km |
| DC resistance | |
| Inner conductor | 23.1 Ω/km |
| Outer conductor | 28 Ω/km |

ATTENUATION

| Frequency(MHz) | Attenuation (dB/100 m) | Attenuation (dB/100ft) |
|----------------|------------------------|------------------------|
| 50 | 4.5 | 1.4 |
| 100 | 6.2 | 1.9 |
| 200 | 8.9 | 2.7 |
| 500 | 15.1 | 4.6 |
| 600 | 16.8 | 5.1 |
| 800 | 19.0 | 5.8 |
| 1000 | 21.5 | 6.6 |
| 1350 | 24.9 | 7.6 |
| 1750 | 28.3 | 8.6 |
| 2150 | 31.1 | 9.5 |
| 2400 | 33.3 | 10.1 |

RETURN LOSS

| Frequency(MHz) | Return Loss (dB) |
|----------------|------------------|
| 30-300 | >28dB |
| 300-600 | >24dB |
| 600-900 | >22dB |

CONSTRUCTION PARAMETERS

| Cable Code | Nominal Inner Conductor Diameter | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Nominal Weight |
|------------|----------------------------------|------------------------------|--------------------------|--------------------------|----------------|
| | mm | mm | mm | mm | kg/km |
| RG6/U4 CWB | 1.0 | 1.8 | 1.2 | 10.8 | 181 |
| RG6/U4 SWB | 1.0 | 1.8 | 1.2 | 10.8 | 177 |
| RG6/U4 SWA | 1.0 | 1.8 | 1.2 | 11.8 | 267 |



Standard



Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1

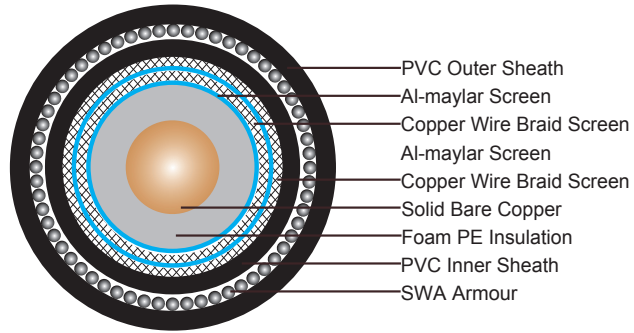
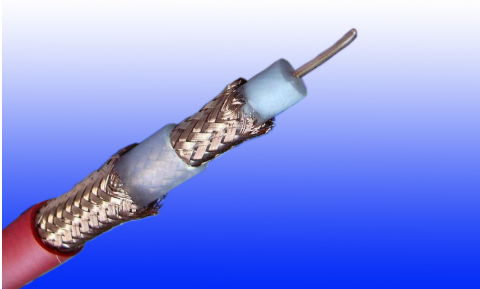


Reduced Fire Propagation**
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4



Flame Retardant RG6 Quad Shield CWB/SWB/SWA Armoured Coaxial cables

RG6 Quad Shield CWB/SWB/SWA Armoured



APPLICATION

The cables are used as a connection cable in the high signal sequences of wireless and data communication systems where lower attenuation required, RF and microwave transmission, data transmission and instrumentation control.

STANDARDS

Basic design adapted to MIL-C-17

FIRE PERFORMANCE

| | |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
| Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)** | EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4 |

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

CABLE CONSTRUCTION

Conductors: 18AWG bare copper wire, solid according to IEC 60228 class 1.

Insulation: Foam PE.

Screen1: Aluminium-maylar.

Screen2: Aluminium wire braid.

Screen3: Aluminium-maylar.

Screen4: Aluminium wire braid.

Inner Sheath: PVC compound.

Armour:

CWB: Copper Wire Braid

SWB: Steel Wire Braid

SWA: Steel Wire Armour

Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -30°C - +70°C

Temperature range during installation (mobile state): -5°C - +60°C

Minimum bending radius: 8 X Overall Diameter

ELECTRICAL PROPERTIES

| | |
|-----------------------|-------------|
| Impedance | 75±5Ω |
| Capacitance | 54 nF/km |
| Velocity ratio | 82% |
| Insulation resistance | >5000 MΩ.Km |
| DC resistance | |
| Inner conductor | 24.1 Ω/km |

ATTENUATION

| Frequency(MHz) | Attenuation (dB/100 m) | Attenuation (dB/100ft) |
|----------------|------------------------|------------------------|
| 50 | 4.8 | 1.5 |
| 100 | 6.7 | 2.0 |
| 200 | 9.3 | 2.8 |
| 500 | 15.0 | 4.6 |
| 600 | 16.9 | 5.1 |
| 800 | 19.4 | 5.9 |
| 1000 | 21.6 | 6.6 |
| 1350 | 24.2 | 7.4 |
| 1750 | 28.0 | 8.4 |
| 2150 | 31.5 | 9.6 |
| 2400 | 32.8 | 10.0 |



CONSTRUCTION PARAMETERS

| Cable Code | Nominal Inner Conductor Diameter | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Nominal Weight |
|--------------|----------------------------------|------------------------------|--------------------------|--------------------------|----------------|
| | mm | mm | mm | mm | kg/km |
| RG6 QUAD CWB | 1.02 | 1.8 | 1.2 | 11.5 | 194.8 |
| RG6 QUAD SWB | 1.02 | 1.8 | 1.2 | 11.5 | 190.8 |
| RG6 QUAD SWA | 1.02 | 1.8 | 1.2 | 12.5 | 280.8 |



Standard



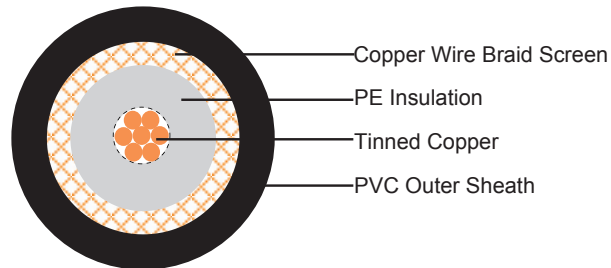
Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1



Reduced Fire Propagation**
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4

Flame Retardant RG11 A/U Coaxial Cables

RG11 A/U



APPLICATION

The cables are used as a connection cable in the high signal sequences of wireless and data communication systems where lower attenuation required, RF and microwave transmission, data transmission and instrumentation control.

STANDARDS

Basic design adapted to MIL-C-17

FIRE PERFORMANCE

| | |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

CABLE CONSTRUCTION

Conductors: Tinned copper wire, stranded according to IEC 60228 class 2.

Insulation: PE compound.

Overall Screen: Plain copper wire braid.

Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.



PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -30°C - +70°C

Temperature range during installation (mobile state): -5°C - +60°C

Minimum bending radius: 8 X Overall Diameter

ELECTRICAL PROPERTIES

| | |
|-----------------------|-------------|
| Impedance | 75±5Ω |
| Capacitance | 67 nF/km |
| Velocity ratio | 66% |
| Insulation resistance | >2000 MΩ.Km |
| Shield coverage | 97% |
| DC resistance | |
| Inner conductor | 20.5 Ω/km |
| Outer conductor | 4.5 Ω/km |

ATTENUATION

| Frequency(MHz) | Attenuation (dB/100 m) | Attenuation (dB/100ft) |
|----------------|------------------------|------------------------|
| 50 | 4.2 | 1.28 |
| 100 | 6.2 | 1.89 |
| 200 | 9.3 | 2.84 |
| 400 | 13.8 | 4.21 |
| 500 | 15.5 | 4.73 |
| 600 | 17.1 | 5.21 |
| 860 | 20.1 | 6.13 |
| 1000 | 23.4 | 7.13 |

RETURN LOSS

| Frequency(MHz) | Return Loss (dB) |
|----------------|------------------|
| 30-300 MHz | >30dB |
| 300-600 MHz | >27dB |
| 600-900 MHz | >25dB |

CONSTRUCTION PARAMETERS

| Cable Code | Conductor Diameter | Nominal Insulation Diameter | Nominal Screen No.x Diameter | Nominal Overall Diameter | Approx. Weight |
|------------|--------------------|-----------------------------|------------------------------|--------------------------|----------------|
| | mm | mm | No. x mm | mm | kg/km |
| RG11 A/U | 7 x 0.40 | 7.25 ± 0.18 | 192 x 0.18 | 10.3 ± 0.18 | 150 |



Standard

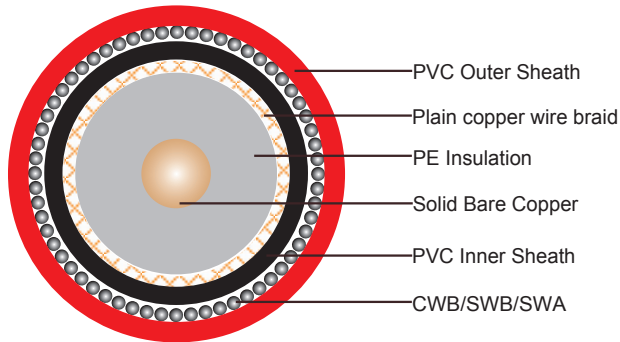
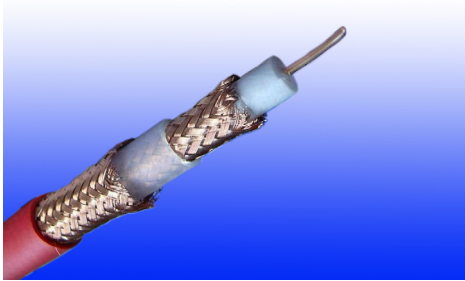


Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1



Flame Retardant RG11 A/U CWB/SWB/SWA Armoured Coaxial Cables

RG11 A/U CWB/SWB/SWA



APPLICATION

The cables are used as a connection cable in the high signal sequences of wireless and data communication systems where lower attenuation required, RF and microwave transmission, data transmission and instrumentation control.

STANDARDS

Basic design adapted to MIL-C-17

FIRE PERFORMANCE

| | |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
| Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)** | EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4 |

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

CABLE CONSTRUCTION

Conductors: Tinned copper wire, stranded according to IEC 60228 class 2.

Insulation: PE compound.

Overall Screen: Plain copper wire braid.

Inner Sheath: Thermoplastic PVC compound.

Armour:

CWB: Copper Wire Braid

SWB: Steel Wire Braid

SWA: Steel Wire Armour

Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -30°C - +75°C

Minimum bending radius: 15 x Overall Diameter

ELECTRICAL PROPERTIES

| | |
|-----------------------|-------------|
| Impedance | 75±5Ω |
| Capacitance | 67 nF/km |
| Velocity ratio | 66% |
| Insulation resistance | >2000 MΩ.Km |
| Shield coverage | 97% |
| DC resistance | |
| Inner conductor | 20.5 Ω/km |
| Outer conductor | 4.5 Ω/km |

ATTENUATION

| Frequency(MHz) | Attenuation (dB/100 m) | Attenuation (dB/100ft) |
|----------------|------------------------|------------------------|
| 50 | 4.2 | 1.28 |
| 100 | 6.2 | 1.89 |
| 200 | 9.3 | 2.84 |
| 400 | 13.8 | 4.21 |
| 500 | 15.5 | 4.73 |
| 600 | 17.1 | 5.21 |
| 860 | 20.1 | 6.13 |
| 1000 | 23.4 | 7.13 |

RETURN LOSS

| Frequency(MHz) | Return Loss (dB) |
|----------------|------------------|
| 30-300 MHz | >30dB |
| 300-600 MHz | >27dB |
| 600-900 MHz | >25dB |



CONSTRUCTION PARAMETERS

| Cable Code | Nominal Inner Conductor Diameter | Nominal Insulation Thickness | Nominal Sheath Thickness | Nominal Overall Diameter | Nominal Weight |
|--------------|----------------------------------|------------------------------|--------------------------|--------------------------|----------------|
| | mm | mm | mm | mm | kg/km |
| RG11 A/U CWB | 1.6 | 2.7 | 1.7 | 15.2 | 349 |
| RG11 A/U SWB | 1.6 | 2.7 | 1.7 | 15.2 | 344 |
| RG11 A/U SWA | 1.6 | 2.7 | 1.7 | 16.2 | 468 |



Standard



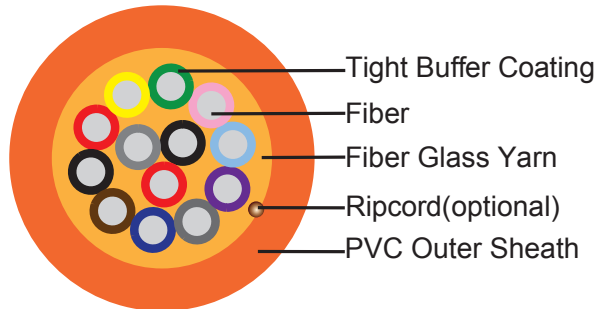
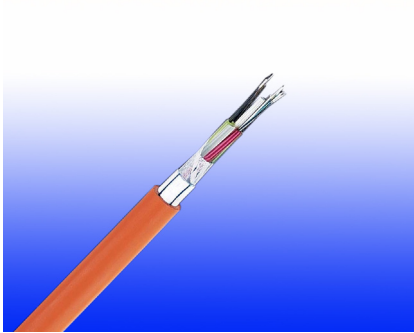
Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1



Reduced Fire Propagation**
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4

Flame Retardant Tight Buffered Distribution Fiber Optic Cables

MTA-B-C-D-Y



APPLICATION

This cables are used for interconnection of distribution boxes and end devices, where continued functionality is required during a fire situation. The cables are very suitable for various indoor and outdoor applications, including routing between buildings within ducts and inside building up to riser shafts.

STANDARDS

Basic design adapted to Telcordia GR409-CORE / TIA/EIA 568B.3 / ICEA-S-83-596

FIRE PERFORMANCE

| | |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
| Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)** | EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4 |

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

CABLE CONSTRUCTION

Optical fibers: Singlemode and multimode tight fibers, with tight buffer coating.

Reinforcement: Either aramid yarn or fiber glass is wound around the tube to provide physical protection and tensile strength, with added fire protection.

Inner Sheath(optional): Thermoplastic PVC compound type LTS3 as per BS 7655-6.1

Ripcord(optional): An optional ripcord can be located under the outer sheath to facilitate jacket removal.

Armouring(optional):

STA: Corrugated steel tape armour

SWB: Steel wire braid



Outer Sheath: Thermoplastic PVC compound.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

PHYSICAL AND THERMAL PROPERTIES

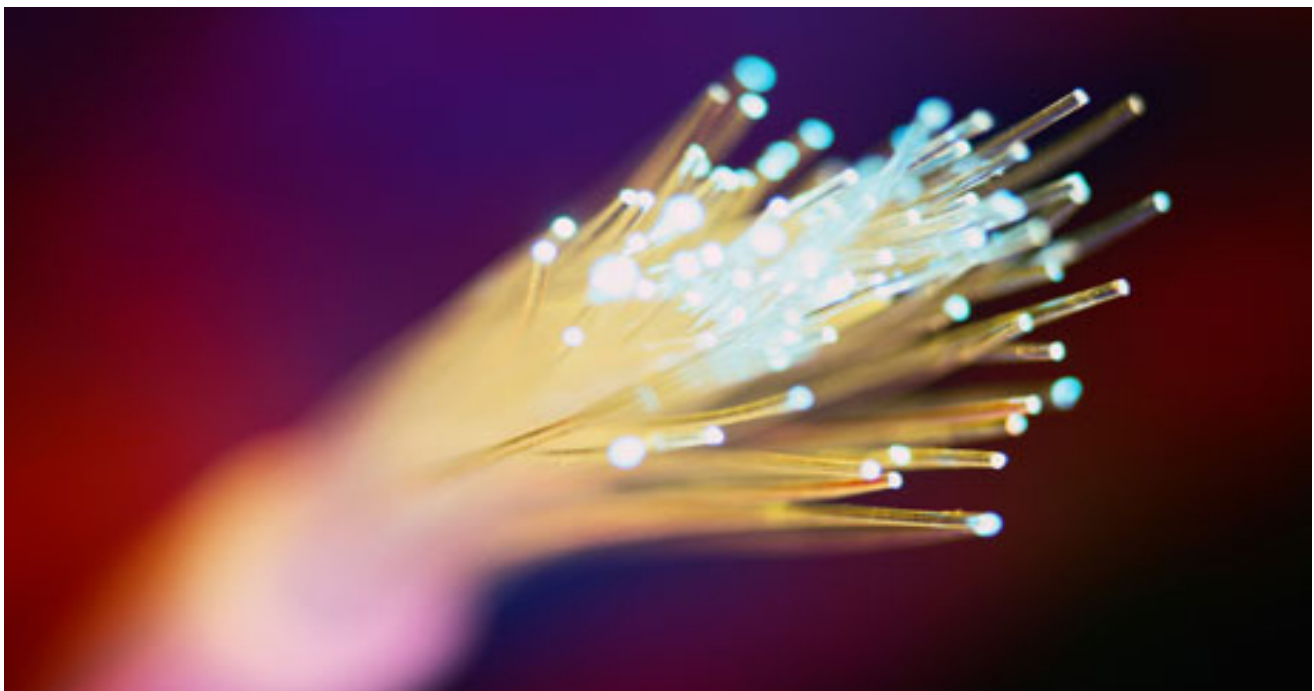
Temperature range during operation (fixed state): -20°C - +60°C

Temperature range during installation (mobile state): 0°C - +50°C

Minimum bending radius: 10 times the outer diameter for unarmoured cables
20 times the outer diameter for armoured cables

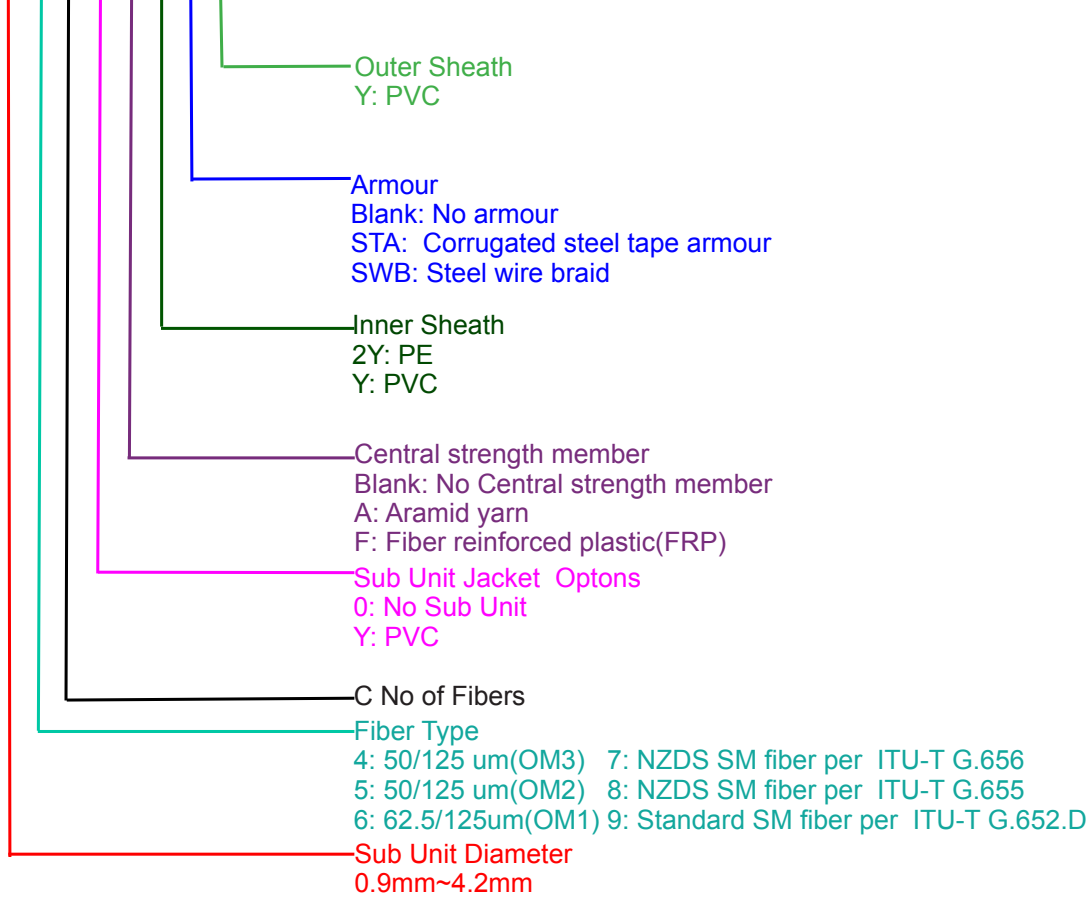
CONSTRUCTION PARAMETERS

| Cable Code | N° of Fibers | Nominal Overall Diameter | Max. Tensile Strength | Minimum Bending Radius | Approx. Weight |
|--------------|--------------|--------------------------|-----------------------|------------------------|----------------|
| | | mm | N | mm | kg/km |
| MTA-B-2-0-Y | 2 | 7.6 | 250 | 76 | 55 |
| MTA-B-4-0-Y | 4 | 7.8 | 250 | 78 | 67 |
| MTA-B-6-0-Y | 6 | 8.6 | 400 | 86 | 77 |
| MTA-B-8-0-Y | 8 | 8.8 | 400 | 88 | 81 |
| MTA-B-12-0-Y | 12 | 9.3 | 400 | 93 | 90 |



TYPE CODES

MTA-B-C-D-E-F-G-H



Standard



Standard



Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1



Reduced Fire Propagation**
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4



Flame Retardant Central Loose Tube Fiber Optic Cables

APPLICATION

These cables are characterized by light weight and small diameter, suitable for both aerial and duct installation. They are mainly installed inside buildings, tunnels, subways or closed areas in general, specially designed to guarantee the signal transmission even in case of fire. The cable can also be used for direct burial for armoured version.

STANDARDS

Basic design adapted to Telcordia GR-20 / RUS 7 CFR 1755.900 (REA PE-90) / ICEA S 87-640

FIRE PERFORMANCE

| | |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
| Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)** | EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4 |

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

CABLE CONSTRUCTION

Fibers: Singlemode and multimode fibers, with loose tube technology.

Structure: Central loose tube cable contains one tube with 2-24 single or multimode fibers, which are filled with water blocking gel.

Water Blocking: The jelly filled tube is waterblocked by using swellable tape and thread.

Reinforcement: Either aramid yarn or fiber glass is wound around the tube to provide physical protection and tensile strength, with added fire protection.

Inner Sheath (optional): The cable can be jacketed with either PE or thermoplastic PVC inner sheath. PE is the preferred option in outdoor environment for water protection purpose.

Moisture Barrier Tape (optional): An aluminum moisture tape can be incorporated under the sheath for water blocking and shielding purpose.

Armouring(optional):

For direct burial, either galvanized steel wire braid, corrugated steel tape armour or galvanized steel wire armour is applied over an inner polyethylene or PVC sheath. For steel tape armour, the 0.15mm thick steel tape is coated with a copolymer and applied with an overlap. For steel wire braid or armour, single layer of galvanized steel wire braid or armour is applied.

Ripcord (optional): An optional ripcord can be located under the jacket to facilitate jacket removal.

Outer Sheath: Thermoplastic PVC compound.

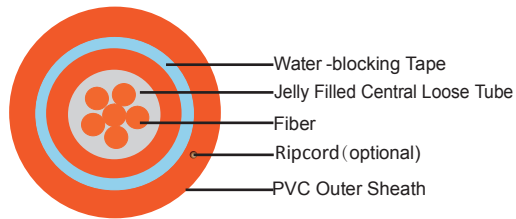
Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

FIBER COLOUR CODE

| | | | | |
|-------------------|---|--------|----|-----------|
| Fiber colour code | 1 | Red | 7 | Brown |
| | 2 | Green | 8 | Violet |
| | 3 | Blue | 9 | Turquoise |
| | 4 | Yellow | 10 | Black |
| | 5 | White | 11 | Orange |
| | 6 | Grey | 12 | Pink |

CONSTRUCTION

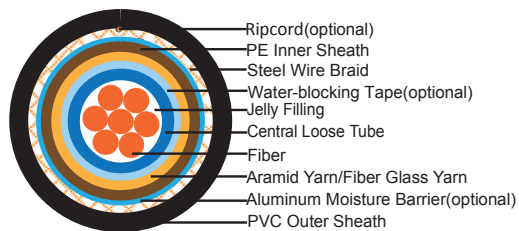
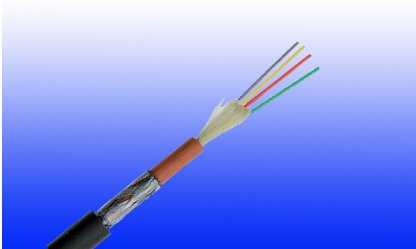
UNARMoured TYPE



CONSTRUCTION PARAMETERS

| Cable Code | Fiber Count | Tube Diameter | Nominal Overall Diameter | Approx. Weight | Tension load | Crush |
|-------------|-------------|---------------|--------------------------|----------------|--------------|---------|
| | (n°) | mm | mm | kg/km | N | N/100mm |
| CLA-B-C-Y-J | 02-06 | 2.7 | 8.0 | 70 | 1000 | 1500 |
| CLA-B-C-Y-J | 08-16 | 3.5 | 9.0 | 90 | 1200 | 1500 |
| CLA-B-C-Y-J | 18-24 | 4.2 | 10.0 | 100 | 1500 | 1500 |

STEEL WIRE BRAID

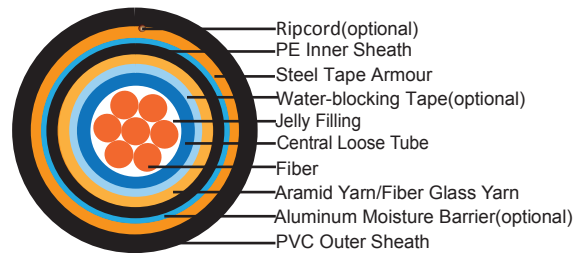
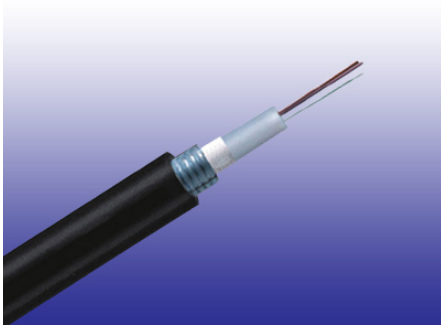




CONSTRUCTION PARAMETERS

| Cable Code | Fiber Count | Tube Diameter | Nominal Overall Diameter | Approx. Weight | Tension load | Crush |
|--------------------|-------------|---------------|--------------------------|----------------|--------------|---------|
| | (n°) | mm | mm | kg/km | N | N/100mm |
| CLA-B-C-2Y(SWB)Y-J | 02-06 | 2.7 | 11.5 | 160 | 1000 | 2000 |
| CLA-B-C-2Y(SWB)Y-J | 08-16 | 3.5 | 12.0 | 180 | 1200 | 2000 |
| CLA-B-C-2Y(SWB)Y-J | 18-24 | 4.2 | 13.0 | 200 | 1500 | 2000 |

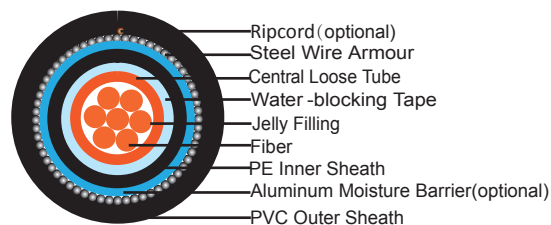
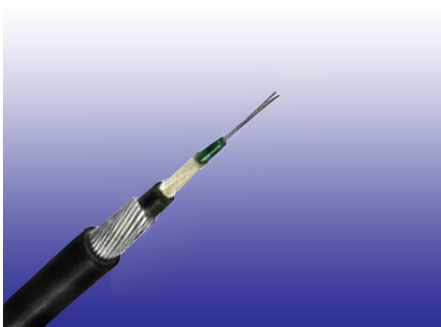
CORRUGATED STEEL TAPE ARMOUR



CONSTRUCTION PARAMETERS

| Cable Code | Fiber Count | Tube Diameter | Diameter | Approx. Weight | Tension load | Crush |
|--------------------|-------------|---------------|----------|----------------|--------------|---------|
| | (n°) | mm | mm | kg/km | N | N/100mm |
| CLA-B-C-2Y(STA)Y-J | 02-06 | 2.7 | 13.0 | 200 | 1000 | 2500 |
| CLA-B-C-2Y(STA)Y-J | 08-16 | 3.5 | 14.0 | 220 | 1200 | 2500 |
| CLA-B-C-2Y(STA)Y-J | 18-24 | 4.2 | 14.5 | 250 | 1500 | 2500 |

STEEL WIRE ARMOUR



CONSTRUCTION PARAMETERS

| Cable Code | Fiber Count | Tube Diameter | Nominal Overall Diameter | Approx. Weight | Tension load | Crush |
|--------------------|-------------|---------------|--------------------------|----------------|--------------|---------|
| | (n°) | mm | mm | kg/km | N | N/100mm |
| CLA-B-C-2Y(SWA)Y-J | 02-12 | 2.7 | 10.5 | 180 | 2500 | 3000 |
| CLA-B-C-2Y(SWA)Y-J | 16-24 | 3.5 | 11.0 | 210 | 2500 | 3000 |

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -20°C - +60°C

Temperature range during installation (mobile state): 0°C - +50°C

Minimum operation bending radius: 10 times the outer diameter for unarmoured cables
20 times the outer diameter for armoured cables

Minimum installation bending radius: 20 times the outer diameter

MECHANICAL PROPERTIES

| | |
|--------------------------|---------------------------------------------------------------------|
| Maximum Compressive Load | 4000N for unarmoured cables 5000N for armoured cables |
| Repeated Impact | 4.4 N.m (J) |
| Twist (Torsion) | 180×10 times, 125×OD |
| Cyclic Flexing | 25 cycles for armoured cables; 100 cycles for unarmoured cables. |

FIBER COMPLIANCE

| | |
|---------------------|------------------|
| Temperature Cycling | IEC60794-1-2-F2 |
| Tensile Strength | IEC60794-1-2-E1A |
| Crush | IEC60794-1-2-E3 |
| Impact | IEC60794-1-2-E4 |
| Repeated Bending | IEC60794-1-2-E6 |
| Torsion | IEC60794-1-2-E7 |
| Kink | IEC60794-1-2-E10 |
| Cable Bend | IEC60794-1-2-E11 |
| Cool Bend | IEC60794-1-2-E11 |



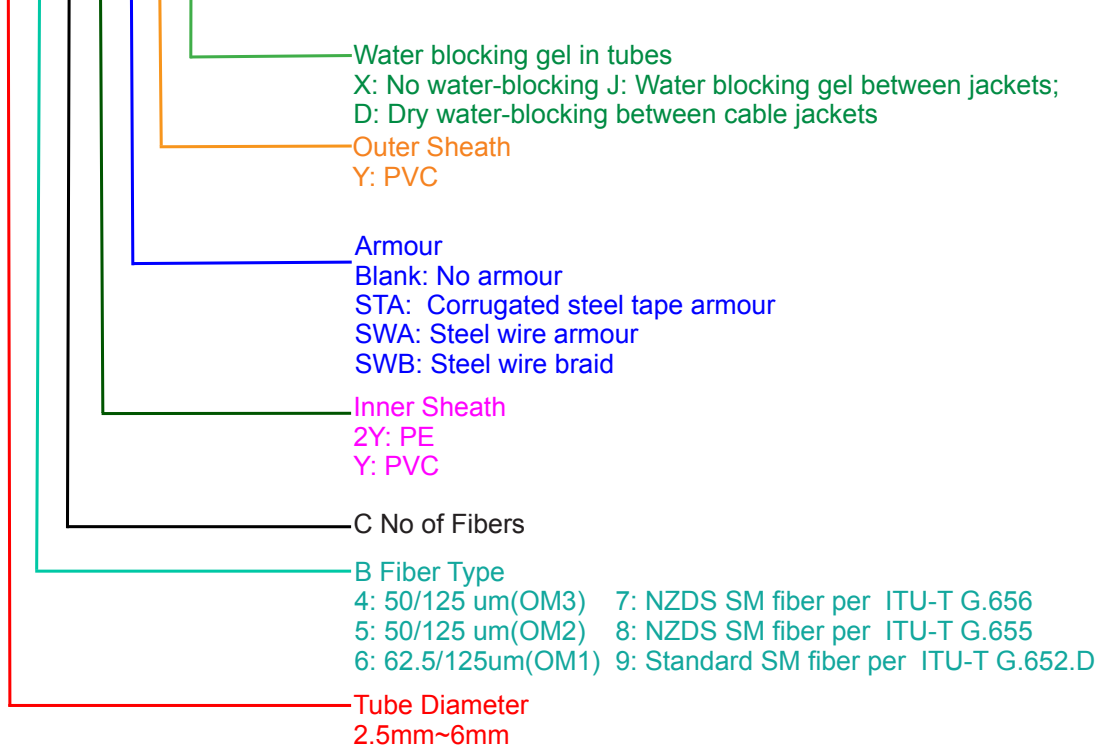
Caledonian Flame Retardant Optic Fiber Cables

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TYPE CODES

CLA-B-C-D-E-F-G



Standard



Standard



Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1



Reduced Fire Propagation**
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4

Flame Retardant Multi Loose Tube Fiber Optic cables

APPLICATION

The multi loose tube non metallic cables are designed for outside plant, which is prone to electrical interference. They are mainly installed inside buildings, tunnels,subways or closed areas in general, specially designed to guarantee the signal transmission even in case of fire. The cable can also be used for direct burial for armoured version.

STANDARDS

Basic design adapted to Telcordia GR-20 / RUS 7 CFR 1755.900 (REA PE-90) / ICEA S 87-640

FIRE PERFORMANCE

| | |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flame Retardance (Single Vertical Wire Test)** | EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1* |
| Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)** | EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4 |

Note: Asterisk ** denotes that the standard compliance is optional, depending on the oxygen index of the PVC compound and the cable design.

CABLE CONSTRUCTION

Fibers: Singlemode and multimode fibers, with loose tube technology.

Structure: The cable consists of 5 to 36 fibers containing tubes or fillers stranded in up to 3 layers around a central strength member and bound under a PVC sheath. Each tube contains 4 -12 fibers, which is filled with water blocking gel.

Central Strength Member: Solid or stranded steel wire coated with polyethylene is usually used as central strength member. Fiber glass reinforced plastics (FRP) will be used as central strength member if non metallic construction is required.

Water Blocking: The jelly filled tube is waterblocked by using swellable tape and thread.

Reinforcement: Either aramid yarn or fiber glass is wound around the tube to provide physical protection and tensile strength, with added fire protection.

Inner Sheath (optional): The cable can be jacketed with either PE or Thermoplastic PVC inner sheath. PE is the preferred option in outdoor environment for water protection purpose.

Armouring(optional): For diect burial, either galvanized steel wire braid, corrugated steel tape armour or galvanized steel wire armour is applied over an inner polyethylene or PVC sheath. For steel tape armour, the 0.15mm thick steel tape is coated with a copolymer and applied with an overlap. For steel wire braid or armour, single layer of galvanized steel wire braid or armour is applied.

Moisture Barrier Tape (optional): An aluminum moisture tape can be incorporated under the sheath for water blocking and shielding purpose.

Ripcord (optional): An optional ripcord can be located under the jacket to facilitate jacket removal.

Outer Sheath: Thermoplastic PVC compound.



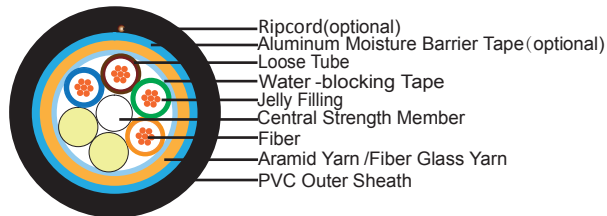
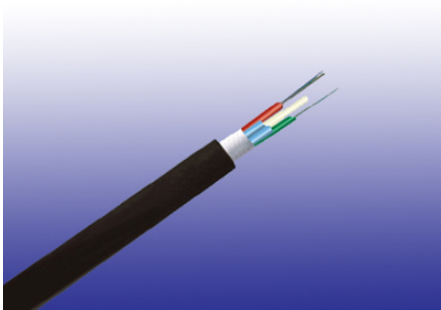
Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti rodent and anti termite properties can be offered as option. Compliance to fire performance standard (IEC 60332-1, IEC 60332-3, UL 1581, UL 1666 etc) depends on the oxygen index of the PVC compound and the overall cable design. LSPVC can also be provided upon request.

FIBER COLOUR CODE

| | | | | |
|-------------------|---|--------|----|-----------|
| Fiber colour code | 1 | Red | 7 | Brown |
| | 2 | Green | 8 | Violet |
| | 3 | Blue | 9 | Turquoise |
| | 4 | Yellow | 10 | Black |
| | 5 | White | 11 | Orange |
| | 6 | Grey | 12 | Pink |

CONSTRUCTION

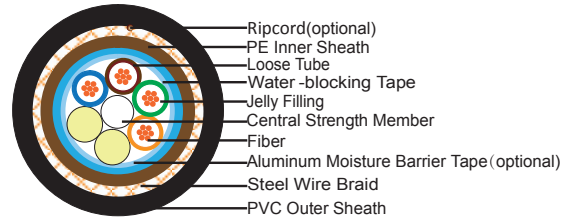
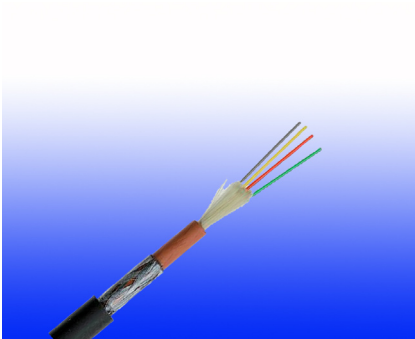
UNARMoured TYPE



CONSTRUCTION PARAMETERS

| Cable Code | Fiber Count | Tube Diameter | Nominal Overall Diameter | Approx. Weight | Tension load | Crush |
|-----------------|-------------|---------------|--------------------------|----------------|--------------|---------|
| | (n°) | mm | mm | kg/km | N | N/100mm |
| MLA-B-C×D-F-Y-J | 72 | 2.5 | 15.0 | 230 | 4000 | 1500 |
| MLA-B-C×D-F-Y-J | 96 | 2.5 | 16.5 | 250 | 4000 | 1500 |
| MLA-B-C×D-F-Y-J | 144 | 2.5 | 20.5 | 280 | 4000 | 1500 |

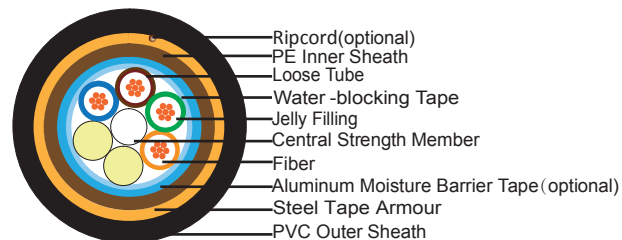
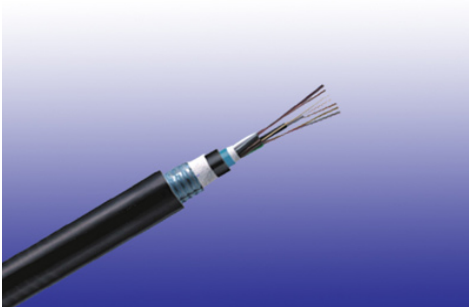
STEEL WIRE BRAID



CONSTRUCTION PARAMETERS

| Cable Code | Fiber Count | Tube Diameter | Nominal Overall Diameter | Approx. Weight | Tension load | Crush |
|------------------------|-------------|---------------|--------------------------|----------------|--------------|---------|
| | (n°) | mm | mm | kg/km | N | N/100mm |
| MLA-B-C×D-F-2Y(SWB)Y-J | 72 | 2.5 | 15.0 | 280 | 3000 | 2000 |
| MLA-B-C×D-F-2Y(SWB)Y-J | 96 | 2.5 | 17.5 | 310 | 3000 | 2000 |
| MLA-B-C×D-F-2Y(SWB)Y-J | 144 | 2.5 | 21.5 | 350 | 3500 | 2000 |

CORRUGATED STEEL TAPE ARMOUR

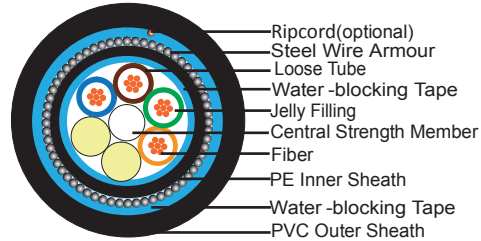
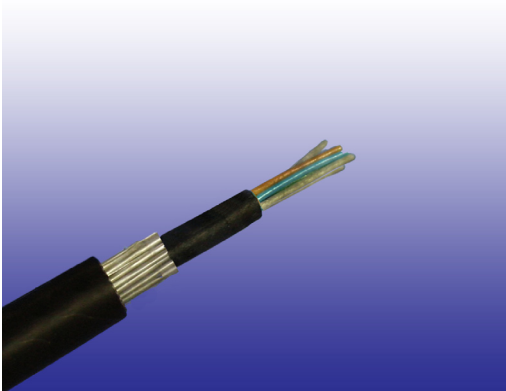


CONSTRUCTION PARAMETERS

| Cable Code | Fiber Count | Tube Diameter | Nominal Overall Diameter | Approx. Weight | Tension load | Crush |
|------------------------|-------------|---------------|--------------------------|----------------|--------------|---------|
| | (n°) | mm | mm | kg/km | N | N/100mm |
| MLA-B-C×D-F-2Y(STA)Y-J | 72 | 2.5 | 16.5 | 290 | 3000 | 2500 |
| MLA-B-C×D-F-2Y(STA)Y-J | 96 | 2.5 | 18.5 | 350 | 3000 | 2500 |
| MLA-B-C×D-F-2Y(STA)Y-J | 144 | 2.5 | 22.5 | 450 | 3500 | 2500 |



STEEL WIRE ARMOUR



CONSTRUCTION PARAMETERS

| Cable Code | Fiber Count | Tube Diameter | Nominal Overall Diameter | Approx. Weight | Tension load | Crush |
|------------------------|-------------|---------------|--------------------------|----------------|--------------|---------|
| | (n°) | mm | mm | kg/km | N | N/100mm |
| MLA-B-C×D-F-2Y(SWA)Y-J | 72 | 2.0 | 15.0 | 360 | 3500 | 3000 |
| MLA-B-C×D-F-2Y(SWA)Y-J | 96 | 2.0 | 16.5 | 390 | 4000 | 3000 |
| MLA-B-C×D-F-2Y(SWA)Y-J | 144 | 2.0 | 18.5 | 430 | 4500 | 3000 |

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -20°C - +60°C

Temperature range during installation (mobile state): 0°C - +50°C

Minimum installation bending radius: 20 times the outer diameter

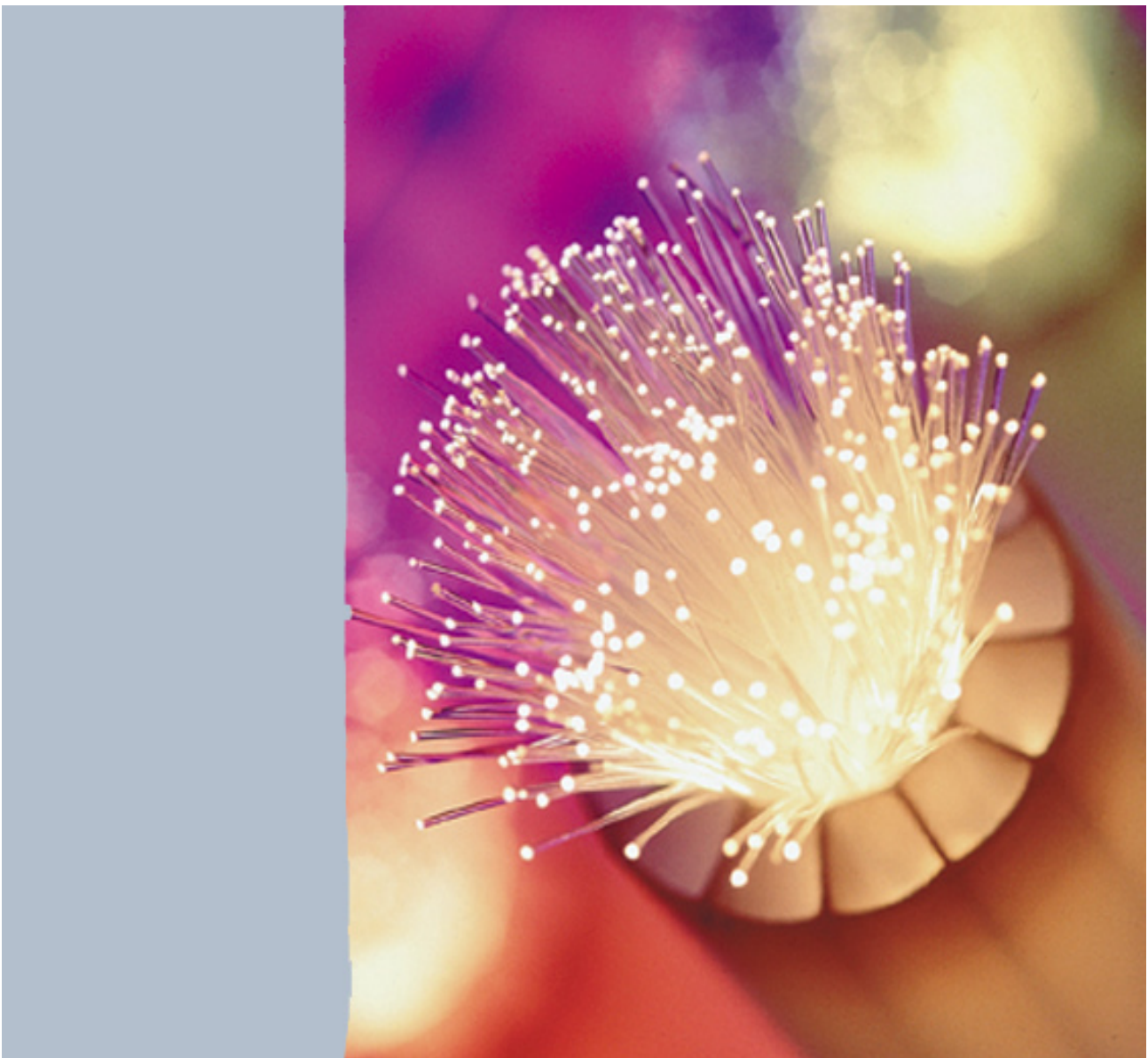
Minimum operation bending radius: 10 times the outer diameter for unarmoured cables
20 times the outer diameter for armoured cables

MECHANICAL PROPERTIES

| | |
|--------------------------|-------------------------------------------------------------------|
| Maximum Compressive Load | 4000N for unarmoured cables 6000N for armoured cables |
| Repeated Impact | 4.4 N.m (J) |
| Twist (Torsion) | 180×10 times, 125×OD |
| Cyclic Flexing | 25 cycles for armoured cables 100 cycles for unarmoured cables |

FIBER COMPLIANCE

| | |
|---------------------|------------------|
| Temperature Cycling | IEC60794-1-2-F2 |
| Tensile Strength | IEC60794-1-2-E1A |
| Crush | IEC60794-1-2-E3 |
| Impact | IEC60794-1-2-E4 |
| Repeated Bending | IEC60794-1-2-E6 |
| Torsion | IEC60794-1-2-E7 |
| Kink | IEC60794-1-2-E10 |
| Cable Bend | IEC60794-1-2-E11 |
| Cool Bend | IEC60794-1-2-E11 |





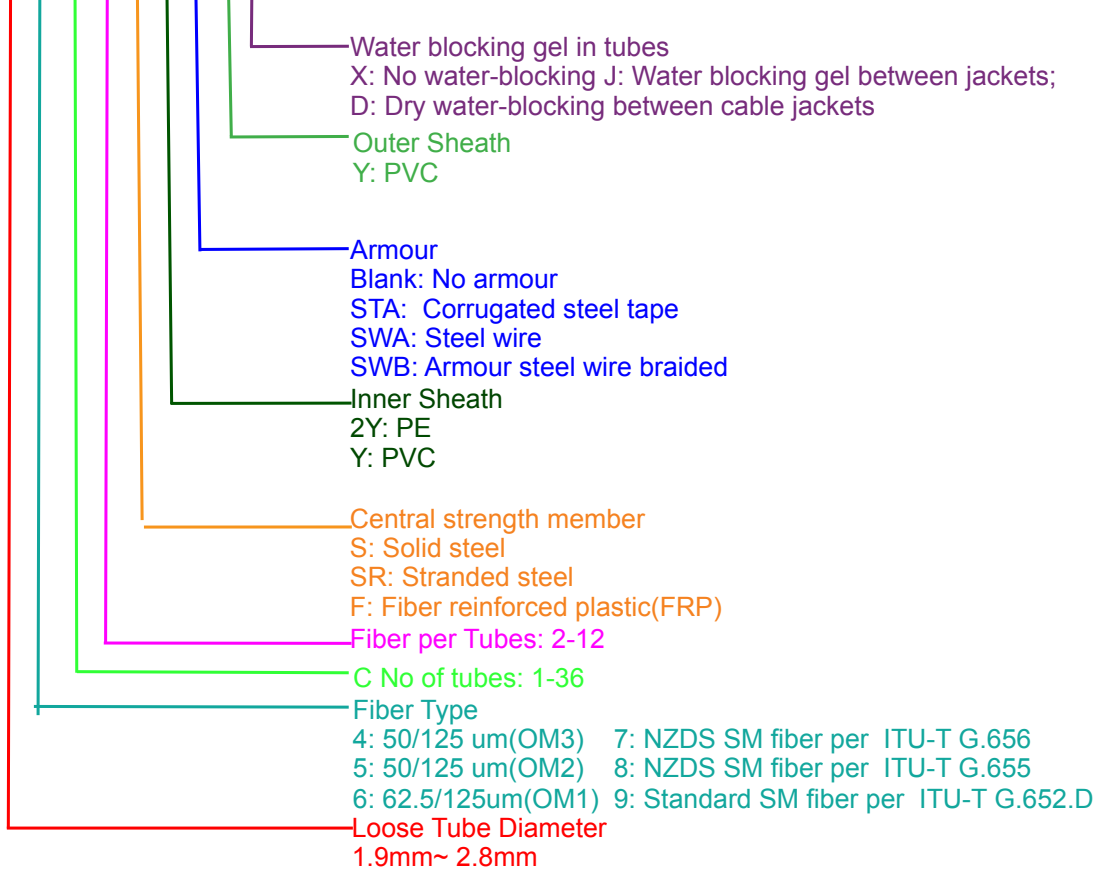
Caledonian Flame Retardant Optic Fiber Cables

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TYPE CODES

MLA-B-CxD-E-F-G-H-I



Standard



Standard



Flame Retardancy**
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1



Reduced Fire Propagation**
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4

Technical Information For Fiber Optic Cables

Optical & Geometrical Properties for Single Mode Fibers

| Parameter | | Standard Single Mode Fiber per ITU-T G.652D | Non-zero Dispersion Shifted fiber per ITU-T G.655 | Non-zero Dispersion Shifted fiber per ITU-T G.656 | Units |
|------------------------------------------------|----------------------------------|---------------------------------------------|---------------------------------------------------|---------------------------------------------------|--------------------------|
| Fiber Code | | 9 | 8 | 7 | |
| Attenuation, Loose Tube Cables | | Standard | Metro Area | Long Haul | |
| | @1310nm | ≤0.35 | - | - | dB/km |
| | @1550nm | ≤0.22 | ≤0.22 | ≤0.22 | dB/km |
| | @1625nm | ≤0.25 | ≤0.26 | ≤0.26 | dB/km |
| Attenuation, Tight Buffer or Semi-Tight Cables | | | | | |
| | @1310nm | ≤0.38 | - | - | dB/km |
| | @1550nm | ≤0.28 | - | - | dB/km |
| | | | | | |
| Chromatic Dispersion | between 1260 and 1360nm (O Band) | ≤3.5 | NA- | - | ps/(nm*km) |
| | between 1460 and 1530nm (S Band) | - | - | 2.0-7.0 | ps/(nm*km) |
| | between 1530 and 1565nm (C Band) | ≤18 | 1.0-10.0 | 7.0-10.0 | ps/(nm*km) |
| | between 1565 and 1625nm (L Band) | ≤22 | 7.0-12.0 | 10.0-14.0 | ps/(nm*km) |
| Zero Dispersion Wavelength | | 1310±11 | ≤1520 | ≤1420 | nm |
| Zero Dispersion Slope | | 0.093 | 0.093 | 0.093 | ps/(nm ² .km) |
| Point Discontinuity at 1300nm & 1550nm | | 0.1 | 0.1 | 0.1 | dB |
| Mode Field Diameter | @1300nm | 9.3±0.5 | - | - | um |
| | @1550nm | 10.4±0.8 | 8.5±0.6 | 9.0±0.5 | um |
| Cable Cut-off Wavelength | | ≤1260 | ≤1450 | ≤1310 | nm |
| PMD (Individual fiber) | | ≤0.2 | ≤0.2 | ≤0.2 | ps/km 1/2 |
| Cladding Diameter | | 125±1 | 125±1 | 125±1 | um |
| Core/Cladding Concentricity Error | | ≤0.5 | ≤0.5 | ≤0.6 | um |



| | | | | |
|------------------------------------------------------------|-----------|-----------|-----------|------------------------|
| Cladding Non-Circularity | ≤1.0 | ≤1.0 | ≤1.0 | % |
| Coating Non-Circularity | ≤6.0 | ≤6.0 | ≤6.0 | % |
| Primary Coating Diameter | 245±10 | 245±10 | 245±10 | um |
| Proof-Test Level | 100 (0.7) | 100 (0.7) | 100 (0.7) | Kpsi/GN/m ² |
| Fatigue Coefficient | ≥20 | ≥20 | ≥20 | |
| Temperature Dependence between 0°C ~ +70°C @ 1310 & 1550nm | 0.1 | 0.1 | 0.1 | Db/km |

Optical & Geometrical Properties for Multimode Fibers

| Parameter | | 50/125 | | 62.5/125 | Units |
|-------------------------------------------------|---------|------------|------------|-------------|---------------------------|
| Fiber Code | | 5 | 4 | 6 | - |
| ISO/IEC 11801 Classification(2) | | OM2 | OM3 | OM1 | - |
| Attenuation, Loose Tube Cables | | | | | |
| @850nm | | ≤3.0 | | ≤3.0 | dB/km |
| @1300nm | | ≤0.8 | | ≤0.8 | dB/km |
| Attenuation, Tight Buffer and Semi-tight Cables | | | | | |
| @850nm | | ≤3.0 | | ≤3.5 | dB/km |
| @1300nm | | ≤1.0 | | ≤1.0 | dB/km |
| Bandwidth* | @850nm | ≥500 | ≥2000 | ≥200 | MHz*km |
| | @1300nm | ≥800/500 | ≥500 | ≥500/600 | MHz*km |
| Numerical Aperture | | 0.20±0.015 | | 0.275±0.015 | - |
| Core Diameter | | 50±3 | | 62.5±3 | um |
| Cladding Diameter | | 125±2 | | 125±2 | um |
| Core/Cladding Concentricity | | ≤1.5 | | ≤1.5 | um |
| Core Non-Circularity | | ≤6 | | ≤6 | % |
| Cladding Non-Circularity | | ≤2 1 | | ≤2 1 | % |
| Core/Cladding Offset | | ≤3 | | ≤3 | um |
| Coating Diameter | | 245±10 | | 245±10 | um |
| Proof-Test Level | | 100 (0.7) | | 100 (0.7) | Kpsi (GN/m ²) |
| Fatigue Coefficient | | ≥20 | | ≥20 | |
| Temperature Dependence between 0°C ~ +70°C | | 0.1 | | 0.1 | dB |

Mechanical & Environmental Properties for Single Mode Fiber

| Testing Parameters | EIA/ TIA-455 FOTP Number | IEC-794-1 Test Method | EN 187000 Test Method | Maximum Increased loss |
|-----------------------------------|-----------------------------------|-----------------------------|-----------------------------|---------------------------------------------------------------------------------|
| Tensile Load & Bending | 33 | E1 | 501 | <0.05dB (90%); <0.15dB (100%) |
| Low & High Temperature Bend | 37 | E11 | | <0.05dB (90%); <0.15dB (100%) |
| Compression loading (Crush) | 41 | E3 | 504 | <0.05dB (90%); <0.15dB (100%) 440N/km(250lb/in) load |
| Impact Resistance | 25 | E4 | 505 | <0.05dB (90%); <0.15dB (100%) |
| Twist (Torson) | 85 | E7 | 508 | <0.05dB (90%); <0.15dB (100%) |
| Cyclic Flexing (Repeated Bending) | 104 | E6 | 509 | <0.05dB (90%); <0.15dB (100%) |
| External freezing | 98 | F6 | | <0.05dB (90%); <0.15dB (100%) |
| Temperature Cycling | 3 | F1 | 601 | <0.05dB (90%); <0.15dB (100%) |
| Fiber Stripability | 178 | B6 | | <8.9N(2lbf) on unaged and aged fiber; >1.3N(0.3lbf) on unaged and aged fiber |
| Cable Aging | 82 | F5 | | <0.1dB (90%); <0.25dB (100%) |
| Water Penetration | 82 | F5 | | No flow after 24 hours from 1 meter length of cable |
| Compound Flow (Drip) | 81 | E14 | | 80°C 24 hours duration, no drip |



Mechanical & Environmental Properties for Multi Mode Fiber

| Testing Parameters | EIA/TIA-455 FOTP Number | IEC-794-1 Test Method | EN 187000 Test Method | Maximum Increased loss |
|-----------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------------------------------|
| Tensile Load & Bending | 33 | E1 | 501 | <0.2dB |
| Low & High Temperature Bend | 37 | E11 | | <0.4dB |
| Compression loading (Crush) | 41 | E3 | 504 | <0.2dB 440N/km(250lb/in) load |
| Cyclic Impact | 25 | E4 | 505 | <0.4dB |
| Twist (Torsion) | 85 | E7 | 508 | <0.2dB |
| Cyclic Flexing (Repeated Bending) | 104 | E6 | 509 | <0.2dB |
| External freezing | 98 | F6 | | <0.2dB |
| Temperature Cycling | 3 | F1 | 601 | <0.05dB (90%); <0.15dB (100%) |
| Fiber Stripability | 178 | B6 | | <13.4N(3lbf) on unaged fiber |
| Cable Aging | 82 | F5 | | <0.1dB (90%); <0.25dB (100%) |
| Water Penetration | 82 | F5 | | No flow after 24 hours from 1 meter length of cable |
| Compound Flow (Drip) | 81 | E14 | | 80°C 24 hours duration, no drip |

Technical Information for Fire Properties

FLAME RETARDANCE IN ACCORDANCE WITH DIFFERENT STANDARDS

The following standards specify a method for flame propagation test for single core cables. The single cable sample undergoes the flame action of a bunsen burner. The test only lasts few minutes.

The IEC 60332-1 standards are taken over as EN standards and transferred to national standards Example: IEC 60332-1 becomes EN 60332-1 and introduced in Germany as DIN EN 60332-1.

Flame Retardance in accordance with EN 60332:2004

EN 60332:2004 Tests on electrical and optical cables under fire conditions. The standard applies to single insulated wires (cables) and requires a vertical flame test with a maximum flame climb of 450mm. The test lasts between 1 and 8 minutes, depending on the cable diameter.

EN 60332-1-1:2004 / BS EN 60332-1-1:2004 / IEC 60332-1-1:2004 / DIN EN 60332-1-1:2004 / VDE 0482-1-1:2005-06 Test on electrical and optical cables under fire conditions. Test for a vertical flame propagation for a single insulated wire or cables.

EN 60332-1-2:2004 / BS EN 60332-1-2:2004 / IEC 60332-1-2:2004 / DIN EN 60332-1-2:2004 / VDE 0482-1-2:2005-06 / CEI 60332-1-2(CEI 20-35/1-2) Tests on electrical and optical fiber cables under fire conditions. Test for a vertical flame propagation for a single insulated wire or cable – Procedure for 1kW premixed flame.

This standard specifies a method of test for resistance to vertical flame propagation for a single insulated wire or cable. Part 1-1 specifies the test apparatus and Part 1-2 specifies the test procedure.

The cable sample is deemed to pass the test if the distance between the lower edge of the top support and the onset of charring is greater than 50mm. In addition, a failure shall be recorded if burning extends downward to a point greater than 540mm from the lower edge of the top support.

EN 60332-1-2:2004 specifies the use of 1kW premix flame and is for general use, except that the procedure may not be suitable for the testing of small insulated conductors or cables of less than 0.5mm sq cross section because the conductor melts before the test is completed, or for the testing of small optic fiber cables because the fiber will be broken before the test is completed. In this case, the procedure given by EN 60332-2-1/2 is recommended.

EN 60332-2-1:2004 / BS EN 60332-2-1:2004 / IEC 60332-2-1:2004 / DIN EN 60332-2-1:2004 / VDE 0482-2-1:2005-06 Tests on electrical and optical cables under fire conditions. Test for a vertical flame propagation for a single small insulated wire or cable.

EN 60332-2-2:2004 / BS EN 60332-2-2:2004 / IEC60332-2-2:2004 / DIN EN 60332-2-2:2004 / VDE 0482-2-2:2005-06 / CEI 60332-2-2 (CEI 20-35/2-2) Test on electric and optical fiber cables under fire conditions. Tests for vertical flame propagation for a single small insulated wire or cable. Procedure for diffusion flame.

This test applies to small dimensions cables.

This standard specifies a method of test for resistance to vertical flame propagation for a single insulated wire or cable. Part 2-1 specifies the test apparatus and Part 2-2 specifies the test



procedure.

Flame Retardance in accordance with NF C32-070-2.1(C2)

NF C32-070:2001 Insulated conductors and cables for installation - Classification tests on conductors and cables with regard to fire behavior.

NF C32-070 2.1 Procedure for 1 kW pre-mixed flame.

The NF F 32070 2.1 (Category C2) and IEC 60332-1-2 are very similar. The sole difference is the time during which the flame is applied.

Flame Retardance in accordance with EN 50265-1:1999 (replaced by EN 60332)

EN 50265-1:1999 / BS EN 50265-1:1999 / DIN EN 50265-1:1999 / VDE 0482-265-1:1999-04 – Common test methods for cables under fire conditions. Test for resistance to a vertical flame propagation for a single insulated conductor or cable. Apparatus (Replaced by EN 60332-1-1:2004 and EN 60332-2-1:2004).

EN 50265-2-1:1999 / BS EN 50265-2-1:1999 / DIN EN 50265-2-1:1999 / VDE 0482-265-2-1:1999-04 – Common test methods for cables under fire conditions. Test for resistance to a vertical flame propagation for a single insulated conductor or cable. Part 2-1: Procedure 1kW pre-mixed flame (Replaced by EN 60332-1-2:2004).

EN 50265-2-2:1999 / BS EN 50265-2-2:1999 / DIN EN 50265-2-2:1999 / VDE 0482-265-2-2:1999-04 – Common test methods for cables under fire conditions. Test for resistance to a vertical flame propagation for a single insulated conductor or cable. Part 2-2: Procedure Diffusion flame (Replaced by EN 60332-2-2:2004).

Flame Retardance in accordance with BS 4066 Part 1 & 2 (replaced by EN 60332)

BS 4066-2:1980 (superseded) – Tests on electric cables under fire conditions. Method of test on a single vertical insulated wire or cable.

This standard is no longer in force and is replaced by BS EN 50265-2-1 which was also superseded by BS EN 60332-1:2009.

Flame Retardance in accordance with NBN C 30-004 (cat. F1)

NBN C 32-004 specifies a method of test for measuring the vertical flame propagation characteristics of a single wire or cable. The cable specimen is deemed to have passed the test and categorized as F1 if after burning has ceased, the charred or affected portion does not reach within 50mm of the lower edge of the top clamp which is equivalent to 425mm above the point of flame application.

Flame Retardance in accordance with IEEE 383

In the IEEE 383 test, cables are supported by a one foot wide vertical rack eight feet high. The cables are positioned in the centre six inches of the rack, spaced one-half diameter apart. The rack is centered in an eight foot enclosure. A ten inch ribbon burner ignites the cable with a 21 kW (70000 BTU). The burner is positioned 2 feet above the floor and 9 to 12 inches of cables are exposed to direct flames for 20 minutes. Cables on which flame extends above the top of the 8 foot rack fail the test.

REDUCED FIRE PROPAGATION IN ACCORDANCE WITH DIFFERENT STANDARDS

These standards specify a method for fire propagation test for vertically mounted bunched cables. These tests simulate the chimney effect in vertical installation of bunch of cables. A certain number of cable sections with a length of 3.5 m is fastened to a vertical ladder in an adapted chamber. The amount of combustible materials for cables and duration of flame application depends on the category the cable has to meet.

Resistance of the wires bundle arranged vertically to the spread of the flame should be such that after a certain time and stopping the source of ignition, flame is extinguished by itself and the length of charred fragments will not exceed 2.5 m in height measured above the lower edge of the burner.



Reduced Fire Propagation in accordance with IEC 60332-3

This test is the most common one to verify the behaviour of a cables for the fire propagation. The cables are installed on a bunch of vertical ladder inside a metal cabinet and undergo the action of a ribbon flame at 750°C. The standard is subdivided in several parts that differ one from the other for the quantity of cable to be installed, the installation mode and the flame application time.

EN 60332-3-10:2009 / BS EN 60332-3-10:2009 / IEC 60332-3-10 ed1.1 / DIN EN 60332-3-10:2009 / VDE 0482-332-3-10:2010-08 – Common test methods for cables under fire conditions. Tests on electric and optical fiber cables under fire conditions - Part 3-10: Test for vertical flame spread of vertically mounted bunched wires or cables.

EN 60332-3-21:2009 / BS EN 60332-3-21:2009 / IEC 60332-3-21 ed1.1 / DIN EN 60332-3-21 / VDE 0482-332-3-21:2010-08 / CEI EN 60332-3-21:2009 (CEI 20-22/3-1)– Procedures. Tests on electric and optical fiber cables under fire conditions - Part 3-21: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A . F/R

- Installation In one layer (front).
- Installation In two layers (front and rear)
- The quantity of the Installed cable is equal to 7 litres/m of combustible materials for cables
- The time of application of the flame is 40 minutes

EN 60332-3-22:2009 / BS EN 60332-3-22:2009 / IEC 60332-3-22 ed1.1 / DIN EN 60332-3-22:2009 / VDE 0482-332-3-22:2010-08 / CEI EN 60332-3-22:2009 (CEI 20-22/3-2)– Procedures. Tests on electric and optical fiber cables under fire conditions - Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cable - Category A

- Installation In one layer (front).
- The quantity of the installed cable is equal to 7 litres/m of combustible materials for cables
- The time of application of the flame is 40 minutes



EN 60332-3-23:2009 / BS EN 60332-3-23:2009 / IEC 60332-3-23 ed1.1 / DIN EN 60332-3-23:2009 / VDE 0482-332-3-23:2010-08 / CEI EN 60332-3-23:2009 (CEI 20-22/3-3)– Procedures. Tests on electric and optical fiber cables under fire conditions - Part 3-23: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category B

- Installation In one layer (front).
- The quantity of the installed cable is equal to 3.5 litres/m of combustible materials for cables
- The time of application of the flame is 40 minutes

EN 60332-3-24:2009 / BS EN 60332-3-24:2009 / IEC 60332-3-24 ed1.1 / DIN EN 60332-3-24:2009 / VDE 0482-332-3-24:2010-08 / CEI EN 60332-3-24:2009 (CEI 20-22/3-4) – Procedures. Tests on electric and optical fiber cables under fire conditions - Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category C

- Installation In one layer (front).
- The quantity of the installed cable is equal to 1.5 litres/m of combustible materials for cables
- The time of application of the flame is 20 minutes



EN 60332-3-25:2009 / BS EN 60332-3-25:2009 / IEC 60332-3-25 ed1.1 / DIN EN 60332-3-25: 2009 / VDE 0482-332-3-25:2010-08 / CEI EN 60332-3-25:2009 (CEI 20-22/3-5)– Procedures. Tests on electric and optical fiber cables under fire conditions - Part 3-25: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category D

- Installation In one layer (front).
- The quantity of the installed cable is equal to 0.5 litres/m of combustible materials for cables
- The time of application of the flame is 20 minutes.

Summary of test condition:

| IEC | 60332-3-21 | 60332-3-22 | | 60332-3-23 | | 60332-3-24 | | 60332-3-25 | |
|------------------------------------------------|------------|------------|-----|------------|-----|------------|-----|------------|-----|
| BS EN 50266 | 50266-2-1 | 50266-2-2 | | 50266-2-3 | | 50266-2-4 | | 50266-2-5 | |
| CEI | 20-22/3-1 | 20-22/3-2 | | 20-22/3-3 | | 20-22/3-4 | | 20-22/3-5 | |
| Category | AF/R | A | | B | | C | | D | |
| Conductor cross-sections mm² | >35 | >35 | ≤35 | >35 | ≤35 | >35 | ≤35 | >35 | ≤35 |
| NMV(litres per metre of cable) | 7 | 7 | | 3.5 | | 1.5 | | 0.5 | |
| Minimum length of test pieces(m) | 3.5 | 3.5 | | 3.5 | | 3.5 | | 3.5 | |

| | | | | | | | | | |
|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------|-----------------|-----------------------------------------------|-----------------|-----------------------------------------------|-----------------|------------------|
| Standard ladder (500 mm wide): • number of layers • maximum width of test sample | 1front+1rear 300mm | ≥1front 300mm | 1front 300mm | - - | ≥1front 300mm | 1front 300mm | ≥1front 300mm | 1front 300mm | ≥1front 300mm |
| Wide ladder (800 mm wide): • number of layers • maximum width of test sample | - - | - - | - - | 1front 600mm | - - | - - | - - | - - | - - |
| Positioning of test pieces | Spaced 0.5×Diameter cable (Max.20mm) | Touching | Spaced 0.5×Diameter cable (Max.20mm) | Touching | Spaced 0.5×Diameter cable (Max.20mm) | Touching | Spaced 0.5×Diameter cable (Max.20mm) | Touching | |
| Number of burners | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | |
| Ladder mounting | Front and rear | Front, Wider ladder for larger cables | | | Front | Front | Front | Front | |
| Flame application time(min) | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | |
| Test conditions | Wind speed: <8 m/s; Temperature: 5°C - +40°C | | | | | | | | |
| Extent of the charred portion | ≤2.5m above the bottom edge of the burner, neither at the front nor at the rear of the ladder. | | | | | | | | |

Reduced fire propagation in accordance with NF C32-070-2.2(C1)

NF C32-070 :2001 Insulated conductors and cables for installation.

-Classification tests on conductors and cables with regard to fire behavior.

A 1600mm vertically installed bundled of cable is exposed to the effects of a radiating oven (approx 830°C) and forced ventilation. Pilot flames arranged above the oven burn off the emitted gases. The test duration is 30 minutes, with the ventilation stopped for every 10 minutes during the flame application period. The cable sample is classified under Category C1 according to NF F 32070-2.2 if the carbonised part of the cable sample does not extend more than 0.8m above the upper base of the oven.

Depending on the damaged length, they can be further classified into 4 classes A, B, C and D according to NF F 16-101 as follows:

| Category | Test Result |
|----------|----------------------------------------------------------------------------------------------|
| A | No damaged length from top of the oven in upper position. |
| B | Damaged length from top of oven in upper position not extending more than 50mm. |
| C | Damaged length from top of oven in upper position not extending more than 300mm |
| D | Damaged length from top of oven in upper position not extending above the top of the chimney |



Reduced Fire Propagation in accordance to EN 50266-1, EN 50266-2-2, EN 50266-2-3, EN 50266-2-4.

EN 50266-1:2001 / BS EN 50266-1:2001 / DIN EN 50266-1:2001 / VDE 0482-266-1:2001-09 – Common test methods for cables under fire conditions. Test for vertical flame spread of vertically mounted bunched wires or cables - Part 1: Apparatus (Replaced by EN 60332-3-10:2009)

EN 50266-2-1:2001 / BS EN 50266-2-1:2001 / DIN EN 50266-2-1:2001 / VDE 0482-266-2-1:2001-09 / CEI EN 50266-2-1 – Common test methods for cables under fire conditions. Test for vertical flame spread of vertically mounted bunched wires or cables - Part 2-1 : Procedures. Category A F/ R (Replaced by EN 60332-3-21:2009)

EN 50266-2-2:2001 / BS EN 50266-2-2:2001 / DIN EN 50266-2-2:2001 / VDE 0482-266-2-2:2001-09 / CEI EN 50266-2-2 – Common test methods for cables under fire conditions. Test for vertical flame spread of vertically mounted bunched wires or cables - Part 2-2: Procedures. Category A (Replaced by EN 60332-3-22:2009)

EN 50266-2-3:2001 / BS EN 50266-2-3:2001 / DIN EN 50266-2-3:2001 / VDE 0482-266-2-3:2001-09 / CEI EN 50266-2-1 – Common test methods for cables under fire conditions. Test for vertical flame spread of vertically mounted bunched wires or cables - Part 2-3: Procedures. Category B (Replaced by EN 60332-3-23:2009)



EN 50266-2-4:2001 / BS EN 50266-2-4:2001 / DIN EN 50266-2-4:2001 / VDE 0482-266-2-4:2001-09 / CEI EN 50266-2-4:2001 – Common test methods for cables under fire conditions. Test for vertical flame spread of vertically mounted bunched wires or cables - Part 2-4: Procedures. Category C (Replaced by EN 60332-3-24:2009).

Reduced Fire Propagation in accordance with BS 4066-3

BS 4066-3:1994 (superseded) – Tests on electric cables under fire conditions. Tests on bunched wires or cables.

This standard is no longer in force and is replaced by the BS EN 50266-1:2001

Reduced Fire Propagation in accordance with NBN C 32-004 (F2)

NBN C 32-004 specifies a method of test for measuring the vertical flame propagation characteristics of a bunch of cables. The cable specimen is deemed to have passed the test and categorized as F2 if after burning has ceased, the extent of charred or affected portion does not reach a height exceeding 2.5m above the bottom edge of the burner.



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