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Power and Wiring Cables

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Flat Twin & Flat Three Core PVC 6242Y & 6243Y

3 Insulated & sheathed with uninsulated circuit protective conductor as option

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Application

9 PVC insulated and sheathed cable for installation clipped to flat surfaces, or embedded in plaster, etc. For domestic and industrial wiring.

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Specifications

- 12 • In accordance with BS6004.
- 13 • **Conductors:** Solid Class 1 (up to 2.5mm²) and stranded Class 2 (above 2.5mm²) copper conductors to BS EN 60228
- 14 • **Insulation:** PVC insulation Type TI.1 to BS EN 50363-3
- 15 • **Core Identification:**
2 core - brown, blue
3 core - brown, black, grey
- 16 • PVC sheath Type 6 to BS7655.
- 17 • **Position of Protective Conductor:**
Twin - centrally placed between brown and blue cores.
Three core - centrally placed between black and grey cores.
- 18 • Flame retardant to BS EN 60332-1-2.
- 19 • **Temperature Rating:** 70°C maximum conductor operating temperature.
- **Voltage Rating:** 300/500V.

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Flat Twin & Flat Three Core PVC 6242Y & 6243Y

Insulated & sheathed with uninsulated circuit protective conductor as option

| Anixter Number | Nominal Conductor Area mm ² | Conductor Class | Insulation Thickness mm | Minimum O/D mm | Maximum O/D mm | Approx Weight kg/km | Minimum Bending Radius (fixed bend) mm | |
|--|--|-----------------|-------------------------|----------------|----------------|--|--|------------------------------------|
| 6192Y - Flat Twin | | | | | | | | |
| 6192Y-0010 | 1.0 | 1 | 0.6 | 4.0 x 6.2 | 4.7 x 7.4 | 54 | 23 | |
| 6192Y-0015 | 1.5 | 1 | 0.7 | 4.4 x 7.0 | 5.4 x 8.4 | 70 | 26 | |
| 6192Y-0025 | 2.5 | 1 | 0.8 | 5.2 x 8.4 | 6.2 x 9.8 | 105 | 30 | |
| 6192Y-0040 | 4 | 2 | 0.8 | 5.6 x 9.6 | 7.2 x 11.5 | 150 | 50 | |
| 6192Y-0060 | 6 | 2 | 0.8 | 6.4 x 10.5 | 8.0 x 13.0 | 205 | 60 | |
| 6192Y-0100 | 10 | 2 | 1.0 | 7.8 x 13.0 | 9.6 x 16.0 | 325 | 70 | |
| 6192Y-0160 | 16 | 2 | 1.0 | 9.0 x 15.5 | 11.0 x 18.5 | 465 | 80 | |
| 6193Y - Flat Three Core | | | | | | | | |
| 6193Y-0010 | 1.0 | 1 | 0.6 | 4.0 x 8.4 | 4.7 x 9.8 | 77 | 30 | |
| 6193Y-0015 | 1.5 | 1 | 0.7 | 4.4 x 9.8 | 5.4 x 11.5 | 100 | 50 | |
| 6193Y-0025 | 2.5 | 1 | 0.8 | 5.2 x 11.5 | 6.2 x 13.5 | 150 | 60 | |
| 6193Y-0040 | 4 | 2 | 0.8 | 5.8 x 13.5 | 7.4 x 16.5 | 230 | 70 | |
| 6193Y-0060 | 6 | 2 | 0.8 | 6.4 x 15.0 | 8.0 x 18.0 | 300 | 80 | |
| 6193Y-0100 | 10 | 2 | 1.0 | 7.8 x 19.0 | 9.6 x 22.5 | 480 | 90 | |
| 6193Y-0160 | 16 | 2 | 1.0 | 9.0 x 22.0 | 11.0 x 26.5 | 700 | 160 | |
| Anixter Number | Nominal Conductor Area mm ² | Conductor Class | Insulation Thickness mm | Minimum O/D mm | Maximum O/D mm | Nom earth Conductor Area mm ² | Approx Weight kg/km | Min Bending Radius (fixed bend) mm |
| 6242Y - Flat Twin + Earth | | | | | | | | |
| 6242Y-0010 | 1.0 | 1 | 0.6 | 4.0 x 7.2 | 4.7 x 8.6 | 1.0 | 69 | 26 |
| 6242Y-0015 | 1.5 | 1 | 0.7 | 4.4 x 8.2 | 5.4 x 9.6 | 1.0 | 85 | 29 |
| 6242Y-0025 | 2.5 | 1 | 0.8 | 5.2 x 9.8 | 6.2 x 11.5 | 1.5 | 120 | 50 |
| 6242Y-0040 | 4 | 2 | 0.8 | 5.6 x 10.5 | 7.2 x 13 | 1.5 | 175 | 60 |
| 6242Y-0060 | 6 | 2 | 0.8 | 6.4 x 12.5 | 8.0 x 15 | 2.5 | 240 | 60 |
| 6242Y-0100 | 10 | 2 | 1.0 | 7.8 x 15.5 | 9.6 x 19 | 4 | 390 | 80 |
| 6242Y-0160 | 16 | 2 | 1.0 | 9 x 18 | 11 x 22.5 | 6 | 560 | 90 |
| 6243Y - Flat Three Core + Earth | | | | | | | | |
| 6243Y-0010 | 1.0 | 1 | 0.6 | 4.0 x 9.0 | 4.7 x 11 | 1.0 | 92 | 50 |
| 6243Y-0015 | 1.5 | 1 | 0.7 | 4.4 x 10.5 | 5.4 x 12.5 | 1.0 | 115 | 50 |
| 6243Y-0025 | 2.5 | 1 | 0.8 | 5.2 x 12.5 | 6.2 x 14.5 | 1.0 | 170 | 60 |
| 6243Y-0040 | 4 | 2 | 0.8 | 5.8 x 14.5 | 7.4 x 18 | 1.5 | 255 | 80 |
| 6243Y-0060 | 6 | 2 | 0.8 | 6.4 x 16.5 | 8 x 20 | 2.5 | 340 | 80 |
| 6243Y-0100 | 10 | 2 | 1.0 | 7.8 x 21.0 | 9.6 x 25.5 | 4 | 550 | 160 |
| 6243Y-0160 | 16 | 2 | 1.0 | 9 x 24.5 | 11 x 29.5 | 6 | 790 | 180 |

For further technical information see page 1:56 For conductor short-circuit ratings see page 19:27.

Technical Information

- Flat Twin, Flat Twin & Earth
- Flat Three core, Flat Three core & Earth

Multi-core PVC-insulated flat cables, non-armoured, with or without protective conductor (copper conductors).

BS6004 — Flat Twin, Flat Three core

Ambient temperature: 30°C Conductor operating temperature: 70°C

CURRENT - CARRYING CAPACITY (Amperes)

| Conductor Cross Sectional Area | Reference Method 100# (above a plasterboard ceiling covered by thermal insulation NOT EXCEEDING 100mm in thickness) | Reference Method 101# (above a plasterboard ceiling covered by thermal insulation EXCEEDING 100mm 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) |
|--------------------------------|--|--|--|--|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| mm ² | (A) | (A) | (A) | (A) | (A) | (A) |
| 1 | 13 | 10.5 | 13 | 8 | 16 | 11.5 |
| 1.5 | 16 | 13 | 16 | 10 | 20 | 14.5 |
| 2.5 | 21 | 17 | 21 | 13.5 | 27 | 20 |
| 4 | 27 | 22 | 27 | 17.5 | 37 | 26 |
| 6 | 34 | 27 | 35 | 23.5 | 47 | 32 |
| 10 | 45 | 36 | 47 | 32 | 64 | 44 |
| 16 | 57 | 46 | 63 | 42.5 | 85 | 57 |

A* For full installation method refer to Table 4A2 Installation Method 2 but for flat twin and earth cable

C* For full installation method refer to Table 4A2 Installation Method 20 but for flat twin and earth cable

100# For full installation method refer to Table 4A2 Installation Method 100

101# For full installation method refer to Table 4A2 Installation Method 101

102# For full installation method refer to Table 4A2 Installation Method 102

103# For full installation method refer to Table 4A2 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.

VOLTAGE DROP (per Ampere per metre):

| Conductor Cross Sectional 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 | mV | mV |
| 1 | 44 | 44 | 38 |
| 1.5 | 29 | 29 | 25 |
| 2.5 | 18 | 18 | 15 |
| 4 | 11 | 11 | 9.5 |
| 6 | 7.3 | 7.3 | 6.4 |
| 10 | 4.4 | 4.4 | 3.8 |
| 16 | 2.8 | 2.8 | 2.4 |

If cables are to be used in ambient air temperatures other than 30°C the following rating factors should be applied:

| | | | | | | | | | |
|---------------------|------|-----|------|------|------|------|------|------|------|
| Ambient air temp °C | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 |
| Rating factor | 1.03 | 1.0 | 0.94 | 0.87 | 0.79 | 0.71 | 0.61 | 0.50 | 0.35 |

For further guidance refer to BS7671 (IEE Wiring Regulations - latest edition).

* With or without protective conductor.