

# 2491B/6701B Cable



## Application

In pipes or ducts and internal wiring of appliances with maximum operating temperatures of 90°C, and generally in areas (such as public and government buildings) where smoke and toxic fumes may cause a threat to life and equipment. The cables produce no corrosive gasses when burnt which is particularly important where electronic equipment is installed.

## Standards

BS7211 Table 3 & 4b, CENELEC HD22.9, BS EN 50525-3-41, IEC 60332-3-24, IEC 60754-1 & 2 BS EN 50267-2-1 & 2, BS EN / IEC 61034-1

## Technical Data

### Conductor

Class 5 flexible plain copper conductor to BS EN 60228:2005 (previously BS6360)

### Voltage Rating

6701B (H07Z-K) 1.5mm<sup>2</sup> and above: 450/750V

### Insulation

LSZH (Low Smoke Zero Halogen) Type EI5 thermosetting insulation

### Temperature Rating

0°C to +90°C

### Insulation Colour

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

### Minimum Bending Radius

Up to 35mm<sup>2</sup> : 3 x overall diameter  
50mm<sup>2</sup> and above: 4 x overall diameter

## Dimensions

### H07Z-K

| No of Cores x Nominal Cross Sectional Area # x mm <sup>2</sup> | Nominal Thickness of Insulation mm | Nominal Overall Diameter mm | Nominal Weight kg/Km |
|--|------------------------------------|-----------------------------|----------------------|
| 1 x 1.50   | 0.7                                | 2.9                         | 20                   |
| 1 x 2.50   | 0.8                                | 3.5                         | 31                   |
| 1 x 4.00   | 0.8                                | 4.1                         | 46                   |
| 1 x 6.00   | 0.8                                | 4.8                         | 65                   |
| 1 x 10.00  | 1.0                                | 6.0                         | 108                  |
| 1 x 16.00  | 1.0                                | 7.2                         | 167                  |
| 1 x 25.00  | 1.2                                | 8.8                         | 258                  |
| 1 x 35.00  | 1.2                                | 9.7                         | 341                  |
| 1 x 70.00  | 1.4                                | 13.3                        | 680                  |

## Conductors

Class 5 flexible Copper Conductors for Single Core and Multi-Core cables

| 1   | 2   | 3                                       |
|---|---|---|
| Nominal Cross Sectional Area<br>mm <sup>2</sup> | Maximum Diameter of Wires<br>in Conductor<br>mm | Maximum Resistance of Conductor at 20°C |
|   |   | Plain Wires<br>ohms/km                  |
| 0.50  | 0.21  | 39.0000                                 |
| 0.75  | 0.21  | 26.0000                                 |
| 1.00  | 0.21  | 19.5000                                 |
| 1.50  | 0.26  | 13.3000                                 |
| 2.50  | 0.26  | 7.9800                                  |
| 4.00  | 0.31  | 4.9500                                  |
| 6.00  | 0.31  | 3.3000                                  |
| 10.00   | 0.41  | 1.9100                                  |
| 16.00   | 0.41  | 1.2100                                  |
| 25.00   | 0.41  | 0.7800                                  |
| 35.00   | 0.41  | 0.5540                                  |
| 50.00   | 0.41  | 0.3860                                  |
| 70.00   | 0.51  | 0.2720                                  |
| 95.00   | 0.51  | 0.2060                                  |
| 120.00  | 0.51  | 0.1610                                  |

## Electrical Characteristics

Current Carrying Capacity (amperes)

| Conductor Cross Sectional Area mm <sup>2</sup> | Reference Method A (enclosed in conduit in thermally insulating wall etc.) Amps |                              | Reference Method B (enclosed in conduit on a wall or in a trunking etc) Amps |                              | Reference Method C (clipped direct) Amps        |   | Reference Method F (in free air or on a perforated cable tray etc horizontal or vertical etc) touching Amps |                              |                                 | Reference Method G (in free air) Spaced by one cable diameter Amps |          |
|--|---|------------------------------|--|------------------------------|---|---|---|------------------------------|---------------------------------|--|----------|
|  | 2 Cables Single Phase AC or DC  | 3 or 4 Cables Three Phase AC | 2 Cables Single Phase AC or DC   | 3 or 4 Cables Three Phase AC | 2 Cables Single Phase AC or DC flat or touching | 3 or 4 Cables Three Phase AC flat and touching or trefoil | 2 Cables Single Phase AC or DC flat   | 3 Cables Three Phase AC flat | 3 Cables Three Phase AC trefoil | 2 Cables Single Phase AC or DC or 3 Cables Three Phase AC flat     |          |
|  |   |                              |  |                              |   |   |   |                              |                                 | Horizontal   | Vertical |
| 1  | 2   | 3                            | 4  | 5                            | 6   | 7   | 8   | 9                            | 10                              | 11   | 12       |
| 1.0  | 14  | 13                           | 17   | 15                           | 19  | 17.5  | -   | -                            | -                               | -  | -        |
| 1.5  | 19  | 17                           | 23   | 20                           | 25  | 23.0  | -   | -                            | -                               | -  | -        |
| 2.5  | 26  | 23                           | 31   | 28                           | 34  | 31.0  | -   | -                            | -                               | -  | -        |
| 4.0  | 35  | 31                           | 42   | 37                           | 46  | 41.0  | -   | -                            | -                               | -  | -        |
| 6.0  | 45  | 40                           | 54   | 48                           | 59  | 54.0  | -   | -                            | -                               | -  | -        |
| 10.0   | 61  | 54                           | 75   | 66                           | 81  | 74.0  | -   | -                            | -                               | -  | -        |
| 16.0   | 81  | 73                           | 100  | 88                           | 109   | 99.0  | -   | -                            | -                               | -  | -        |
| 25.0   | 106   | 95                           | 133  | 117                          | 143   | 130.0   | 161   | 141                          | 135                             | 182  | 161      |
| 35.0   | 131   | 117                          | 164  | 144                          | 176   | 161.0   | 200   | 176                          | 169                             | 226  | 201      |
| 50.0   | 158   | 141                          | 198  | 175                          | 228   | 209.0   | 242   | 216                          | 207                             | 275  | 246      |
| 70.0   | 200   | 179                          | 253  | 222                          | 293   | 268.0   | 310   | 279                          | 268                             | 353  | 318      |
| 95.0   | 241   | 216                          | 306  | 269                          | 355   | 326.0   | 377   | 342                          | 328                             | 430  | 389      |
| 120.0  | 278   | 249                          | 354  | 312                          | 413   | 379.0   | 437   | 400                          | 383                             | 500  | 454      |

Ambient temperature: 30°C

Conductor operating temperature: 90°C

## Part Number List

| Nominal Cross Sectional Area mm <sup>2</sup> | Black   | Blue    | Green   | Grey    | Green/Yellow | Orange  | Red     | Pink    | Yellow  | Violet  | Brown   | White   |
|--|---------|---------|---------|---------|--------------|---------|---------|---------|---------|---------|---------|---------|
| 1.5  | 770-027 | 770-028 | 770-029 | 770-030 | 770-031      | 770-032 | 770-033 | 770-034 | 770-035 | 770-036 | 770-037 | 770-038 |
| 2.5  | 770-040 | 770-041 | 770-042 | 770-043 | 770-044      | 770-045 | 770-046 | 770-047 | 770-048 | 770-049 | 770-050 | 770-051 |
| 4  | 770-053 | 770-054 | 770-055 | 770-056 | 770-057      | 770-058 | 770-059 | 770-060 | 770-061 | 770-062 | 770-063 | 770-064 |
| 6  | 770-066 | 770-067 | 770-068 | 770-069 | 770-070      | 770-071 | 770-072 | 770-073 | 770-074 | 770-075 | 770-076 | 770-077 |
| 10   | 770-079 | 770-080 | 770-081 | 770-082 | 770-083      | 770-084 | 770-085 | 770-086 | 770-087 | 770-088 | 770-089 | 770-090 |
| 16   | 770-092 | 770-093 | 770-094 | 770-095 | 770-096      | 770-097 | 770-098 | 770-099 | 770-100 | 770-101 | 770-102 | 770-103 |
| 25   | 770-105 | 770-106 | 770-107 | 770-108 | 770-109      | 770-110 | 770-111 | 770-112 | 770-113 | 770-114 | 770-115 | 770-116 |
| 35   | 770-118 | 770-119 | 770-120 | 770-121 | 770-122      | 770-123 | 770-124 | 770-125 | 770-126 | 770-127 | 770-128 | 770-129 |
| 70   | 770-131 | 770-132 | 770-133 | 770-134 | 770-135      | 770-136 | 770-137 | 770-138 | 770-139 | 770-140 | 770-141 | 770-142 |

### Voltage Drop (per ampere per metre)

| Conductor Cross Sectional Area mm <sup>2</sup> | 2 Cables DC mV/A/m | 2 Cables Single Phase AC mV/A/m                           |      |      |   |       |      |   |      |      | 3 or 4 Cables Three Phase AC mV/A/m                                 |      |      |                        |       |       |                     |       |      |                    |      |      |
|--|--------------------|---|------|------|---|-------|------|---|------|------|---|------|------|------------------------|-------|-------|---------------------|-------|------|--------------------|------|------|
|  |                    | Reference Methods A & B (enclosed in conduit or trunking) |      |      | Reference Methods C, F & G (clipped direct, on tray or in free air) |       |      | Reference Methods A & B (enclosed in conduit or trunking) |      |      | Reference Methods C, F & G (clipped direct, on tray or in free air) |      |      |                        |       |       |                     |       |      |                    |      |      |
|  |                    |   |      |      | Cable Touching  |       |      |   |      |      | Cable Spaced*   |      |      | Cable Touching Trefoil |       |       | Cable Touching Flat |       |      | Cable Spaced* Flat |      |      |
| 1  | 2                  | 3   |      |      | 4   |       |      | 5   |      |      | 6   |      |      | 7                      |       |       | 8                   |       |      | 9                  |      |      |
| 1.0  | 46.000             | 46.0  |      |      | 46.0  |       |      | 46.0  |      |      | 40.0  |      |      | 40.0                   |       |       | 40.0                |       |      | 40.0               |      |      |
| 1.5  | 31.000             | 31.0  |      |      | 31.0  |       |      | 31.0  |      |      | 27.0  |      |      | 27.0                   |       |       | 27.0                |       |      | 27.0               |      |      |
| 2.5  | 19.000             | 19.0  |      |      | 19.0  |       |      | 19.0  |      |      | 16.0  |      |      | 16.0                   |       |       | 16.0                |       |      | 16.0               |      |      |
| 4.0  | 12.000             | 12.0  |      |      | 12.0  |       |      | 12.0  |      |      | 10.0  |      |      | 10.0                   |       |       | 10.0                |       |      | 10.0               |      |      |
| 6.0  | 7.900              | 7.9   |      |      | 7.9   |       |      | 7.9   |      |      | 6.8   |      |      | 6.8                    |       |       | 6.8                 |       |      | 6.8                |      |      |
| 10.0   | 4.700              | 4.7   |      |      | 4.7   |       |      | 4.7   |      |      | 4.0   |      |      | 4.0                    |       |       | 4.0                 |       |      | 4.0                |      |      |
| 16.0   | 2.900              | 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    |
| 25.0   | 1.850              | 1.850   | 0.31 | 1.90 | 1.850   | 0.190 | 1.85 | 1.850   | 0.28 | 1.85 | 1.600   | 0.27 | 1.65 | 1.600                  | 0.165 | 1.600 | 0.600               | 0.190 | 1.60 | 1.600              | 0.27 | 1.65 |
| 35.0   | 1.350              | 1.350   | 0.29 | 1.35 | 1.350   | 0.180 | 1.35 | 1.350   | 0.27 | 1.35 | 1.150   | 0.25 | 1.15 | 1.150                  | 0.155 | 1.150 | 0.150               | 0.180 | 1.15 | 1.150              | 0.26 | 1.20 |
| 50.0   | 0.990              | 1.000   | 0.29 | 1.05 | 0.990   | 0.180 | 1.00 | 0.990   | 0.27 | 1.00 | 0.870   | 0.25 | 0.90 | 0.860                  | 0.155 | 0.870 | 0.860               | 0.180 | 0.87 | 0.860              | 0.26 | 0.89 |
| 70.0   | 0.680              | 0.700   | 0.28 | 0.75 | 0.680   | 0.175 | 0.71 | 0.680   | 0.26 | 0.73 | 0.600   | 0.24 | 0.65 | 0.590                  | 0.150 | 0.610 | 0.590               | 0.175 | 0.62 | 0.590              | 0.25 | 0.65 |
| 95.0   | 0.490              | 0.510   | 0.27 | 0.58 | 0.490   | 0.170 | 0.52 | 0.490   | 0.26 | 0.56 | 0.440   | 0.23 | 0.50 | 0.430                  | 0.145 | 0.450 | 0.430               | 0.170 | 0.46 | 0.430              | 0.25 | 0.49 |
| 120.0  | 0.390              | 0.410   | 0.26 | 0.48 | 0.390   | 0.165 | 0.43 | 0.390   | 0.25 | 0.47 | 0.350   | 0.23 | 0.42 | 0.340                  | 0.140 | 0.370 | 0.340               | 0.165 | 0.38 | 0.340              | 0.24 | 0.42 |