

# Finolex

## Cables Limited

AN IS/ISO 9001 CERTIFIED COMPANY

### Flame Retardant (FR) PVC Insulated Industrial Single & Multi Core Flexible Cables



## FLAME RETARDANT (FR) PVC INSULATED INDUSTRIAL SINGLE & MULTI CORE FLEXIBLE CABLES

FR PVC compound Insulated Industrial Single Core and Multi Core Flexible Cables have a wide range of application in machine tools, appliances, control panels, machinery and industries of every nature. The conductors, drawn from 99.97% bright electrolytic grade copper with more than 100% conductivity, are annealed and bunched together. The conductors are insulated with a FR PVC compound with high insulation resistance and dielectric strength, formulated and manufactured in house.


In case of Multi Core Cables, the insulated cores are laid up to form the core assembly. The inner cores are coded for ease of identification as per National/ International coding practices. The sheathing is provided with a specially formulated PVC compound to facilitate not only ease in stripping but also to withstand mechanical abrasion while in use. These FR PVC compounds used for insulation and sheathing have high oxygen and temperature index. These properties help in restricting the spread of fire even at very high temperatures.

The Single Core and Multi Core sheathed Industrial Cables are manufactured as per IS 694:2010, in sizes from 0.5 sq. mm. to 300 sq. mm. in Single Core, and in sizes 0.5 sq. mm. to 2.5 sq. mm. up to 25 cores. These sizes carry the prestigious ISI mark and are duly approved by FIA/TAC. The rest of the sizes generally confirms to IS 694:2010. Cables as per BS 6004 and BS 6500 are also available for the export market.

**TABLE 1 : FLAME RETARDANT (FR) PVC INSULATED SINGLE CORE UN-SHEATHED/SHEATHED FLEXIBLE CABLES AS PER IS 694:2010 VOLTAGE GRADE UPTO 1100 VOLTS HAVING CLASS 5 CONDUCTOR**

| Nominal Cross Section Area of Conductor | Conductor as per IS 8130 | Current Rating DC or AC | Insulation             |                            |                      |                            |
|---|--------------------------|-------------------------|------------------------|----------------------------|----------------------|----------------------------|
|   |                          |                         | Single Core Unsheathed |                            | Single Core Sheathed |                            |
|   | Max. Resistance @ 20°C   |                         | Nom. Thickness         | Overall Diameter (Approx.) | Nom. Thickness       | Overall Diameter (Approx.) |
| Sq.mm                                   | Ω /km                    | Amp                     | mm                     | mm                         | mm                   | mm                         |
| 0.5                                     | 39.00                    | 4                       | 0.6                    | 2.00                       | 0.9                  | 4.00                       |
| 0.75                                    | 26.00                    | 7                       | 0.6                    | 2.30                       | 0.9                  | 4.25                       |
| 1.0                                     | 19.50                    | 12                      | 0.6                    | 2.45                       | 0.9                  | 4.85                       |
| 1.5                                     | 13.30                    | 15                      | 0.6                    | 2.75                       | 0.9                  | 5.15                       |
| 2.5                                     | 7.98                     | 20                      | 0.7                    | 3.50                       | 1.0                  | 5.90                       |
| 4                                       | 4.95                     | 27                      | 0.8                    | 4.10                       | 1.0                  | 6.70                       |
| 6                                       | 3.30                     | 35                      | 0.8                    | 4.75                       | 1.1                  | 7.35                       |
| 10                                      | 1.91                     | 46                      | 1.0                    | 6.00                       | 1.3                  | 8.60                       |
| 16                                      | 1.21                     | 62                      | 1.0                    | 7.10                       | 1.4                  | 9.90                       |
| 25                                      | 0.780                    | 80                      | 1.2                    | 8.80                       | 1.4                  | 11.60                      |
| 35                                      | 0.554                    | 102                     | 1.2                    | 10.10                      | 1.6                  | 13.30                      |
| 50                                      | 0.386                    | 138                     | 1.4                    | 12.50                      | 2.0                  | 16.50                      |
| 70                                      | 0.272                    | 214                     | 1.4                    | 13.90                      | 2.2                  | 18.30                      |
| 95                                      | 0.206                    | 260                     | 1.6                    | 15.90                      | 2.4                  | 20.70                      |
| 120                                     | 0.161                    | 305                     | 1.6                    | 17.80                      | 2.5                  | 22.80                      |
| 150                                     | 0.129                    | 355                     | 1.8                    | 19.80                      |                      |                            |
| 185                                     | 0.106                    | 415                     | 2.0                    | 22.00                      |                      |                            |
| 240                                     | 0.0801                   | 500                     | 2.2                    | 26.00                      |                      |                            |
| 300                                     | 0.0641                   | 570                     | 2.4                    | 27.50                      |                      |                            |

IS : 694



CM/L 7306463  
CM/L 7525273  
CM/L 8944096

**Note:** The conductor construction will be such that all requirements of strand diameter and conductor resistance as per IS 694 and IS 8130 are met.

**SPECIAL!**  
For UPS  
Cabling

Finolex FR PVC Insulated Single Core Flexible Cables in grey and white colour are ideal for use in cabling for UPS in establishments that have large computer networks. These unique colours can help identify the cabling for UPS wiring in the circuit and are available in sizes 0.5 sq. mm. to 6 sq. mm. These cables are as per IS 694 : 2010, carry the prestigious ISI mark and are duly approved by FIA/TAC. **These cables can also be made available with FRLS & HR insulating compound on request.** Technical details as per Table 1.

**TABLE 2 : FLAME RETARDANT (FR) MULTI CORE PVC INSULATED & SHEATHED FLEXIBLE CIRCULAR CORDS  
AS PER IS 694:2010 HAVING CLASS 5 CONDUCTOR AS PER IS 8130**

| No. of Cores               | Unit  | Nominal Cross Section Area of Conductor in Sq. mm |      |      |      |       |
|----------------------------|-------|---|------|------|------|-------|
|                            |       | 0.50  | 0.75 | 1.00 | 1.50 | 2.50  |
| Max. Resistance at 20°C    | Ω /km | 39  | 26   | 19.5 | 13.3 | 7.98  |
| <b>Insulation</b>          |       |   |      |      |      |       |
| Nom. Thickness             | mm    | 0.60  | 0.60 | 0.60 | 0.60 | 0.70  |
| Overall Diameter (Approx.) | mm    | 2.00  | 2.30 | 2.45 | 2.75 | 3.50  |
| <b>Two Core Sheathed</b>   |       |   |      |      |      |       |
| Nom. Sheath Thickness      | mm    | 0.90  | 0.90 | 0.90 | 0.90 | 1.00  |
| Overall Diameter (Approx.) | mm    | 6.10  | 6.70 | 7.00 | 7.60 | 9.30  |
| <b>Three Core Sheathed</b> |       |   |      |      |      |       |
| Nom. Sheath Thickness      | mm    | 0.90  | 0.90 | 0.90 | 0.90 | 1.00  |
| Overall Diameter (Approx.) | mm    | 6.45  | 7.10 | 7.40 | 8.10 | 9.90  |
| <b>Four Core Sheathed</b>  |       |   |      |      |      |       |
| Nom. Sheath Thickness      | mm    | 0.90  | 0.90 | 0.90 | 1.00 | 1.00  |
| Overall Diameter (Approx.) | mm    | 7.00  | 7.65 | 8.00 | 8.95 | 10.75 |
| <b>Five Core Sheathed</b>  |       |   |      |      |      |       |
| Nom. Sheath Thickness      | mm    | 0.90  | 0.90 | 1.00 | 1.00 | 1.00  |
| Overall Diameter (Approx.) | mm    | 7.55  | 8.35 | 8.95 | 9.75 | 11.80 |

**TABLE 3 : FLAME RETARDANT (FR) PVC INSULATED & SHEATHED ROUND MULTI CORE FLEXIBLE CABLES  
AS PER IS 694:2010 HAVING CLASS 5 CONDUCTOR AS PER IS 8130**

| No. of Cores                     | Unit  | Nominal Cross Section Area of Conductor in Sq. mm |       |       |       |       |
|----------------------------------|-------|---|-------|-------|-------|-------|
|                                  |       | 0.50  | 0.75  | 1.00  | 1.50  | 2.50  |
| Max. Resistance at 20°C          | Ω /km | 39  | 26    | 19.5  | 13.3  | 7.98  |
| <b>Insulation</b>                |       |   |       |       |       |       |
| Nom. Thickness                   | mm    | 0.60  | 0.60  | 0.60  | 0.60  | 0.70  |
| Overall Diameter (Approx.)       | mm    | 2.00  | 2.30  | 2.45  | 2.75  | 3.50  |
| <b>Six Core Sheathed</b>         |       |   |       |       |       |       |
| Nom. Sheath Thickness            | mm    | 0.90  | 1.00  | 1.00  | 1.00  | 1.10  |
| Overall Diameter (Approx.)       | mm    | 8.00  | 9.10  | 9.55  | 10.45 | 12.90 |
| <b>Seven Core Sheathed</b>       |       |   |       |       |       |       |
| Nom. Sheath Thickness            | mm    | 0.90  | 1.00  | 1.00  | 1.00  | 1.10  |
| Overall Diameter (Approx.)       | mm    | 8.00  | 9.10  | 9.55  | 10.45 | 12.90 |
| <b>Eight Core Sheathed</b>       |       |   |       |       |       |       |
| Nom. Sheath Thickness            | mm    | 1.00  | 1.00  | 1.00  | 1.10  | 1.20  |
| Overall Diameter (Approx.)       | mm    | 10.30   | 11.50 | 12.10 | 13.50 | 16.70 |
| <b>Nine Core Sheathed</b>        |       |   |       |       |       |       |
| Nom. Sheath Thickness            | mm    | 1.00  | 1.10  | 1.10  | 1.10  | 1.30  |
| Overall Diameter (Approx.)       | mm    | 10.30   | 11.50 | 12.10 | 13.50 | 16.70 |
| <b>Ten Core Sheathed</b>         |       |   |       |       |       |       |
| Nom. Sheath Thickness            | mm    | 1.00  | 1.10  | 1.10  | 1.10  | 1.30  |
| Overall Diameter (Approx.)       | mm    | 10.65   | 12.10 | 12.70 | 13.95 | 17.45 |
| <b>Twelve Core Sheathed</b>      |       |   |       |       |       |       |
| Nom. Thickness                   | mm    | 1.00  | 1.10  | 1.10  | 1.10  | 1.30  |
| Overall Diameter (Approx.)       | mm    | 10.65   | 12.10 | 12.70 | 13.95 | 17.45 |
| <b>Fourteen Core Sheathed</b>    |       |   |       |       |       |       |
| Nom. Sheath Thickness            | mm    | 1.10  | 1.10  | 1.10  | 1.20  | 1.30  |
| Overall Diameter (Approx.)       | mm    | 11.35   | 12.65 | 13.35 | 14.85 | 18.35 |
| <b>Sixteen Core Sheathed</b>     |       |   |       |       |       |       |
| Nom. Sheath Thickness            | mm    | 1.10  | 1.20  | 1.20  | 1.20  | 1.40  |
| Overall Diameter (Approx.)       | mm    | 12.50   | 14.20 | 14.95 | 16.45 | 20.60 |
| <b>Twenty One Core Sheathed</b>  |       |   |       |       |       |       |
| Nom. Thickness                   | mm    | 1.20  | 1.30  | 1.40  | 1.40  | 1.50  |
| Overall Diameter (Approx.)       | mm    | 12.70   | 14.40 | 15.35 | 16.85 | 20.80 |
| <b>Twenty Four Core Sheathed</b> |       |   |       |       |       |       |
| Nom. Sheath Thickness            | mm    | 1.20  | 1.30  | 1.40  | 1.40  | 1.50  |
| Overall Diameter (Approx.)       | mm    | 14.70   | 16.70 | 17.80 | 19.60 | 24.30 |
| <b>Twenty Five Core Sheathed</b> |       |   |       |       |       |       |
| Nom. Sheath Thickness            | mm    | 1.20  | 1.30  | 1.40  | 1.40  | 1.50  |
| Overall Diameter (Approx.)       | mm    | 14.70   | 16.70 | 17.80 | 19.60 | 24.30 |

**TABLE 4 : FLAME RETARDANT (FR) PVC INSULATED & SHEATHED ROUND MULTI CORE FLEXIBLE CABLES AS PER IS 694:2010 HAVING CLASS 5 CONDUCTOR AS PER IS 8130**

| Nominal Cross Section Area of Conductor | Max. Resistance @ 20° C | Current Rating DC or AC | Insulation     |                            | Sheath         |                            |                |                            |                |                            |                |                            |
|---|-------------------------|-------------------------|----------------|----------------------------|----------------|----------------------------|----------------|----------------------------|----------------|----------------------------|----------------|----------------------------|
|   |                         |                         |                |                            | Two Core       |                            | Three Core     |                            | Four Core      |                            | Five Core      |                            |
|   |                         |                         | Nom. Thickness | Overall Diameter (Approx.) | Nom. Thickness | Overall Diameter (Approx.) | Nom. Thickness | Overall Diameter (Approx.) | Nom. Thickness | Overall Diameter (Approx.) | Nom. Thickness | Overall Diameter (Approx.) |
| Sq. mm                                  | Ω /km                   | Amp                     | mm             | mm                         | mm             | mm                         | mm             | mm                         | mm             | mm                         | mm             | mm                         |
| 4                                       | 4.95                    | 22                      | 0.8            | 4.10                       | 1.0            | 10.5                       | 1.0            | 11.4                       | 1.0            | 12.4                       | 1.1            | 13.8                       |
| 6                                       | 3.30                    | 31                      | 0.8            | 4.75                       | 1.1            | 12.0                       | 1.2            | 13.1                       | 1.2            | 14.4                       | -              | -                          |
| 10                                      | 1.91                    | 42                      | 1.0            | 6.00                       | 1.3            | 14.9                       | 1.4            | 16.2                       | 1.4            | 17.8                       | -              | -                          |
| 16                                      | 1.21                    | 57                      | 1.0            | 7.10                       | 1.4            | 17.3                       | 1.4            | 18.6                       | 1.4            | 20.4                       | -              | -                          |
| 25                                      | 0.780                   | 72                      | 1.2            | 8.80                       | 1.4            | 20.7                       | 1.5            | 22.5                       | 1.6            | 25.0                       | -              | -                          |
| 35                                      | 0.554                   | 91                      | 1.2            | 10.10                      | 1.6            | 23.7                       | 1.6            | 22.5                       | 1.7            | 28.3                       | -              | -                          |
| 50                                      | 0.386                   | 120                     | 1.4            | 12.50                      | 2.0            | 29.3                       | 2.0            | 31.4                       | 2.0            | 34.7                       | -              | -                          |
| 70                                      | 0.272                   | 165                     | 1.4            | 13.90                      | 2.2            | 32.5                       | 2.2            | 34.9                       | 2.2            | 38.5                       | -              | -                          |
| 95                                      | 0.206                   | 200                     | 1.6            | 15.90                      | 2.4            | 36.9                       | 2.4            | 39.6                       | 2.4            | 43.7                       | -              | -                          |
| 120                                     | 0.161                   | 225                     | 1.6            | 17.80                      | 2.5            | 40.9                       | 2.5            | 43.9                       | 2.5            | 48.5                       | -              | -                          |
| 150                                     | 0.129                   | 250                     | 1.8            | 19.80                      | -              | -                          | 2.6            | 48.4                       | 2.6            | 53.5                       | -              | -                          |
| 185                                     | 0.106                   | 276                     | 2.0            | 22.00                      | -              | -                          | 2.8            | 53.5                       | 2.8            | 59.2                       | -              | -                          |
| 240                                     | 0.0801                  | 325                     | 2.2            | 26.00                      | -              | -                          | 3.0            | 62.5                       | 3.0            | 69.3                       | -              | -                          |
| 300                                     | 0.0641                  | 376                     | 2.4            | 27.50                      | -              | -                          | 3.2            | 66.2                       | 3.2            | 73.3                       | -              | -                          |

**TABLE 5 : CORE IDENTIFICATION**

| No. of Cores | Cables for Fixed Wiring & Cords              | Flexible Cables  |
|--------------|--|--|
| 1            | Red, Black, Yellow, Blue, White, Grey, Green | Red, Black, Yellow, Blue, White, Grey, Green   |
| 2            | Red & Black                                  | Red & Black  |
| 3            | Red, Yellow & Blue                           | Red, Black & Yellow/Green (for ECC) or Red, Yellow & Blue  |
| 4            | Red, Yellow, Blue & Black                    | Red, Yellow, Blue & Yellow/Green (for ECC) or Red, Yellow, Blue & Black                                    |
| 5            | -  | Red, Yellow, Blue, Black & Grey or Yellow, Blue, Green, White & Yellow/Green                               |
| 6            | -  | Red, Yellow, Blue, Green, White & Yellow/Green   |
| 7            | -  | Red, Yellow, Blue, Green, White, Black & Yellow/Green  |
| 8            | -  | Red, Yellow, Blue, Green, White, Black, Grey & Yellow/Green  |
| 9            | -  | Red, Yellow, Blue, Green, White, Black, Grey, Orange & Yellow/Green  |
| 10           | -  | Red, Yellow, Blue, Green, White, Black, Grey, Orange, Brown & Yellow/Green                                 |
| 11           | -  | Red, Yellow, Blue, Green, White, Black, Grey, Orange, Brown, Pink & Yellow/Green                           |
| 12           | -  | Red, Yellow, Blue, Green, White, Black, Grey, Orange, Brown, Pink, Violet & Yellow/Green                   |
| 13-25        | -  | Two adjacent Cores in each layer - Blue & Yellow (Reference & Direction Core) Other remaining Cores - Grey |




**Note:** Sheath colour is black or any required colour can be provided on specific request.

**CABLES FOR OVERSEAS MARKETS**

Finolex cables have been used in many countries for over two decades. Cables can be offered to British or equivalent standards.

The types of cables offered to overseas markets include:

- Multicore sheathed cables as per BS 6004 or BS 6500, with stranded (Class 2) or Flexible (Class 5) conductors
- HR PVC Insulated winding wires for submersible pump motors
- PVC Insulated and sheathed three core flat cables and three core round double sheathed cables for submersible pumps
- HR PVC Insulated single core flexible cables as per BS 6231 Type CK
- PVC Insulated auto and battery cables as per DIN 72551, JIS C 3406, JASO D 611, ISO 6722 and IS 2465
- PVC Insulated and sheathed power and control cables as per BS 6346 and IEC 60502
- XLPE Insulated and sheathed power cables as per BS 5467 and IEC 60502

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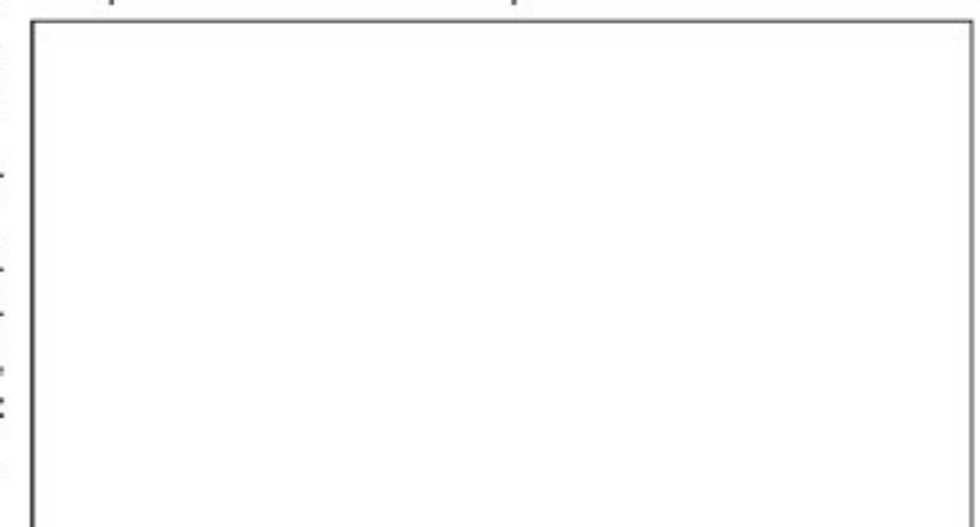
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Sample card available on request



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*In order to derive maximum benefit and utilisation of our products, we advise that these products are stored, installed and commissioned as per the norms prevailing in the place of installation. When decommissioned, these should be disposed using appropriate methods/process specified in respective state / location of use so as not to affect the environment adversely.*