

# Wires and Cables



## ROOPA - SINGLE CORE PVC INSULATED COPPER CONDUCTOR (UNSHEATEHED) HEAVY DUTY ELECTRIC WIRES IN VOLTAGE GRADE UPTO & INCLUDING 1100V. FOR HOUSE WIRING

| Nominal Cross Sectional Area Of Conductor mm <sup>2</sup> | Number / Nom. Dia Of Wires (Nome/mm) * | Thicknes Of insulation (Nom) mm | Overall Diameter Approx. (mm) | Current carrying capacity Amps | Resistance (Max.) Per Km. @ 20.C |
|---|--|---------------------------------|-------------------------------|--------------------------------|----------------------------------|
| 0.5   | 16/0.2                                 | 0.6                             | 2.2                           | 4                              | 39                               |
| 0.75  | 24/0.2                                 | 0.7                             | 2.5                           | 7                              | 26                               |
| 1.0   | 14/0.3                                 | 0.7                             | 2.8                           | 11                             | 18.1                             |
| 1.5   | 22/0.3                                 | 0.7                             | 3.1                           | 13                             | 12.1                             |
| 2.5   | 36/0.3                                 | 0.8                             | 3.8                           | 18                             | 7.41                             |
| 4.0   | 56/0.3                                 | 0.8                             | 4.4                           | 24                             | 4.95                             |
| 6.0   | 85/0.3                                 | 0.8                             | 5.3                           | 31                             | 3.30                             |

## ROOPA - SINGLE CORE PVC INSULATED COPPER CONDUCTOR (UNSHEATEHED) FLEXIBLE CABLE IN VOLTAGE GRADE UPTO AND INCLUDING 1100 V FOR INDUSTRIES

| Area in Sq - Mm | Conductor Construction in General | Cond. Dia. in mm (Approx.) | Max. DC Resistance Ohm/Km at 20 <sup>0</sup> C | Insulation Thickness in mm nominal | Cables Dia (Approx.) | Current Rating in Amp. |
|-----------------|-----------------------------------|----------------------------|--|------------------------------------|----------------------|------------------------|
| 10              | 140/0.30                          | 4.60                       | 1.910  | 1.0                                | 6.70                 | 42                     |
| 16              | 1010/0.450                        | 5.80                       | 1.15   | 1.0                                | 8.20                 | 57                     |
| 25              | 157/0.45                          | 7.30                       | 0.727  | 1.2                                | 10.00                | 71                     |
| 35              | 220/0.45                          | 8.70                       | 0.524  | 1.2                                | 11.30                | 91                     |
| 50              | 314/0.45                          | 10.40                      | 0.387  | 1.4                                | 13.50                | 120                    |
| 70              | 440/0.45                          | 12.30                      | 0.2720   | 1.6                                | 15.50                | 161                    |
| 95              | 595/0.45                          | 14.20                      | 0.2060   | 1.8                                | 18.50                | 200                    |

|     |           |       |        |     |       |     |
|-----|-----------|-------|--------|-----|-------|-----|
| 120 | 755/0.45  | 16.30 | 0.1610 | 2.0 | 20.90 | 225 |
| 150 | 945/0.45  | 18.30 | 0.1290 | 2.0 | 22.50 | 240 |
| 185 | 925/0.50  | 20.00 | 0.1060 | 2.2 | 24.60 | 300 |
| 240 | 1221/0.50 | 23.00 | 0.0801 | 2.2 | 27.60 | 425 |
| 300 | 1527/0.50 | 25.70 | 0.0641 | 2.4 | 32.20 | 475 |
| 400 | 2030/0.50 | 29.80 | 0.0486 | 2.6 | 35.70 | 550 |
| 500 | 2540/0.50 | 33.0  | 0.0384 | 2.8 | 38.00 | 635 |
| 630 | 3200/0.50 | 37.50 | 0.0287 | 3.0 | 45.00 | 725 |

**ROOPA - SINGLE CORE PVC INSULATED COPPER CONDUCTOR (UNSHEATEHD) HEAVY DUTY DOMESTIC STRANDED WIRE IN VOLTAGE GRADE UPTO AND INCLUDING 1100V. AS PER COMPANY'S SPECIFICATIONS**

| Conductor Size   | Conductor Area (mm <sup>2</sup> ) | Overall Dia. Approx. (mm) | Current Rating (Amps.) Copper | Conductor Resistance at 20 <sup>0</sup> C (Ohms/Km) |
|------------------|-----------------------------------|---------------------------|-------------------------------|---|
| 3/0.66 or 1/1.13 | 1                                 | 2.60                      | 11                            | 17.7000   |
| 3/0.81 or 1/1.38 | 1.5                               | 2.80                      | 14                            | 11.9000   |
| 3/1.06 or 1/.178 | 2.5                               | 3.40                      | 19                            | 7.1400  |
| 7/0.86 or 1/2.25 | 4                                 | 3.85                      | 26                            | 4.4700  |
| 7/1.06 or 1/2.76 | 6                                 | 4.40                      | 31                            | 2.9700  |
| 7/1.35 or 1/3.57 | 10                                | 6.05                      | 42                            | 1.7800  |
| 7/1.70           | 16                                | 7.10                      | 55                            | 1.1300  |
| 7/2.14           | 25                                | 8.90                      | 60                            | 0.7120  |
| 7/2.52           | 35                                | 10.00                     | 77                            | 0.5140  |
| 19.1.78          | 50                                | 11.80                     | 102                           | 0.3790  |
| 19.2.52          | 70                                | 13.50                     | 180                           | 0.2620  |
| 37/2.03          | 95                                | 15.80                     | 215                           | 0.1890  |
| 37/2.03          | 120                               | 17.50                     | 240                           | 0.1500  |
| 37/2.03          | 150                               | 19.40                     | 275                           | 0.1220  |
| 37/2.52          | 185                               | 21.70                     | 320                           | 0.0972  |
| 61/2.25          | 240                               | 24.70                     | 380                           | 0.0740  |
| 61/2.52          | 300                               | 27.50                     | 455                           | 0.0590  |
| 61/2.85          | 400                               | 36.70                     | 540                           | 0.0461  |
| 61/3.20          | 500                               | 40.80                     | 625                           | 0.0366  |
| 91/2.98          | 630                               | 44.40                     | 705                           | 0.0283  |

**ROOPA - MULTI CORE PVC INSULATED COPPER CONDUCTOR (UNSHEATHED) HEAVY DUTY DOMESTIC CABLES IN VOLTAGE GRADE UPTO AND INCLUDING 1100V**

| CONDUCTOR |                       |                 | INSULATION                 |                   | CORE | SHEATH THICKNESS |        |        | OVERALL DIAMETER(APPROX) |        |        | APPROX CURRENT RATING |
|-----------|-----------------------|-----------------|----------------------------|-------------------|------|------------------|--------|--------|--------------------------|--------|--------|-----------------------|
| Area      | Construction No./Dia. | Cond. Dia-meter | Max. DC Resistance at 20°C | Nominal Thickness | Dia  | Nominal          |        |        | Nominal                  |        |        |                       |
|           |                       |                 |                            |                   |      | 2 Core           | 3 Core | 4 Core | 2 Core                   | 3 Core | 4 Core |                       |
| Sq.mm     | mm                    | mm              | ohm/km                     | mm                | mm   | mm               | mm     | mm     | mm                       | mm     | mm     | Amps                  |
| 0.50      | 16/0.20               | 0.94            | 39.0                       | 0.6               | 2.20 | 0.90             | 0.90   | 0.90   | 6.20                     | 6.60   | 7.20   | 4                     |
| 0.75      | 24/0.20               | 1.20            | 26.0                       | 0.6               | 2.50 | 0.90             | 0.90   | 0.90   | 7.00                     | 7.20   | 7.90   | 7                     |
| 1.0       | 20/0.25               | 1.34            | 18.1                       | 0.6               | 2.60 | 0.90             | 0.90   | 0.90   | 7.00                     | 7.50   | 8.10   | 11                    |
| 1.5       | 30/0.25               | 1.64            | 13.30                      | 0.6               | 2.90 | 0.90             | 0.90   | 1.00   | 7.60                     | 8.10   | 9.00   | 14                    |
| 2.5       | 50/0.25               | 2.10            | 7.98                       | 0.7               | 3.50 | 1.00             | 1.00   | 1.00   | 9.00                     | 9.60   | 10.50  | 19                    |
| 4.0       | 56/0.30               | 2.61            | 4.95                       | 0.8               | 4.30 | 1.00             | 1.00   | 1.00   | 10.60                    | 11.30  | 12.40  | 26                    |
| 6.0       | 84/0.30               | 3.50            | 3.30                       | 0.8               | 5.1  | 1.15             | 1.15   | 1.40   | 12.60                    | 13.40  | 15.20  | 31                    |
| 10        | 140/0.30              | 4.60            | 1.91                       | 1.0               | 6.6  | 1.40             | 1.40   | 1.40   | 16.00                    | 17.00  | 18.80  | 42                    |
| 16        | 226/0.30              | 6.00            | 1.15                       | 1.0               | 8.0  | 1.40             | 1.40   | 1.40   | 18.80                    | 20.10  | 22.20  | 57                    |
| 25        | 157/0.45              | 7.60            | 0.727                      | 1.2               | 10.0 | 2.00             | 2.00   | 2.00   | 24.00                    | 25.60  | 28.20  | 71                    |
| 35        | 220/0.45              | 8.70            | 0.524                      | 1.2               | 11.1 | 2.00             | 2.00   | 2.00   | 26.30                    | 28.00  | 31.00  | 91                    |
| 50        | 314/0.45              | 10.60           | 0.387                      | 1.4               | 13.4 | 2.00             | 2.00   | 2.00   | 30.90                    | 33.00  | 36.50  | 120                   |
| 70        | 440/0.45              | 12.30           | 0.272                      | 1.4               | 15.1 | 2.00             | 2.20   | 2.40   | 34.20                    | 37.00  | 41.00  | 161                   |
| 95        | 595/0.45              | 17.70           | 0.206                      | 1.6               | 17.9 | 2.20             | 2.40   | 2.40   | 40.20                    | 43.50  | 47.80  | 200                   |

**ROOPA - equivalent sizes of conductors in wires**

| Area Sq. mm | Construction of Conductors                |  |         |
|-------------|---|--|---------|
|             | No. of strands / size of each strand (mm) |  |         |
| 1.0         | 14/0.3                                    |  | 20/0.25 |
| 1.5         | 22/0.3                                    |  | 30/0.25 |
| 2.5         | 36/0.3                                    |  | 50/0.25 |
| 4.0         | 56/0.3                                    |  | 56/0.30 |
| 6.0         | 84/0.30                                   |  | 84/0.30 |

**3 Core Flat Cables as per IS:694:1990 with ISI mark**

| Conductor          |                       | Insulation        |                    | Sheath Overall Dimensions |              |                  | Conductor Resistance @20°C(max.) ohms / km | Current Carrying Capacity @ 40°C (Amp.) |
|--------------------|-----------------------|-------------------|--------------------|---------------------------|--------------|------------------|--|---|
| Area(Nom.) Sq. mm. | No. /size of Wires mm | Thickness (Nom)mm | Core Dia. (Nom)mm. | Thickness (Nom)mm.        | Width 'W' mm | Thickness 'H' mm |  |   |
| 1.5                | 22/0.3                | 0.8               | 3.25               | 1.15                      | 12.5         | 5.8              | 12.10                                      | 14                                      |
| 2.5                | 36/0.3                | 0.9               | 3.90               | 1.15                      | 14.4         | 6.3              | 7.41                                       | 18                                      |
| 4.0                | 56/0.3                | 1.0               | 4.65               | 1.15                      | 17.2         | 7.4              | 4.95                                       | 26                                      |

### 3 Core Flat Cables generally conforming to IS:694:1990

| Conductor          |                      | Insulation         |                    | Sheath Overall Dimension |              |                  | conductor Resistance @20°C(max.) ahms/km. | Current Carrying Capacity @40°C(Amp.) |
|--------------------|----------------------|--------------------|--------------------|--------------------------|--------------|------------------|---|---------------------------------------|
| Area(Nom.) Sq. mm. | No./size of wires mm | Thickness (Nom)mm. | Core Dia. (Nom)mm. | Thickness (Nom)mm.       | Width 'W' mm | Thickness 'H' mm |   |                                       |
| 6.0                | 84/0.3               | 10                 | 5.20               | 1.15                     | 18.7         | 7.9              | 3.30                                      | 31                                    |
| 10.6               | 140/0.3              | 10                 | 6.20               | 1.40                     | 23.7         | 9.9              | 1.91                                      | 42                                    |
| 16.0               | 226/0.3              | 10                 | 8.20               | 1.40                     | 28.0         | 11.4             | 1.21                                      | 57                                    |