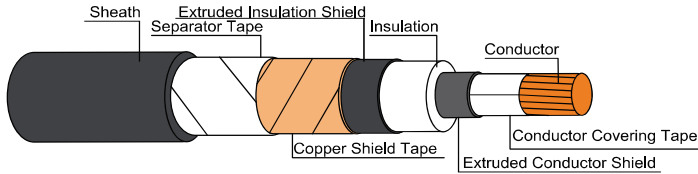


## 12/20(24)kV 90 °C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED POWER CABLE

IEC 60502-2



## CABLE STRUCTURE

**Conductor** : Compacted round annealed copper  
Single-core : Sizes 35 mm<sup>2</sup> up to 1000 mm<sup>2</sup>

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**  
Single-core : Natural (Translucent)

**Shield** : Copper tape

**Sheath** : Black polyvinyl chloride (PVC/ST2)

## TECHNICAL DATA

**Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 24,000 Volts

**Rated voltage** : 12,000 Volts between Line to Earth  
: 20,000 Volts between Line to Line

**Testing voltage** : 42,000 Volts

**Reference standard** : IEC 60502-2, IEC 60228, IEC 60332-1

**Remark** : Special protection can be produced

## APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Number of wires minimum<br>(No.) | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ·km) | Continuous current rating in free air at 40°C maximum |          |         | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------|----------------------------------------------------|----------------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|-------------------------------------------------------|----------|---------|------------------------------------------------------------|---------------------------------|------------------------|
|                |                                                    |                                  |                                      |                                  |                                  |                                                |                                                  | Spaced                                                | Touching | Trefoil |                                                            |                                 |                        |
| 1              | 35                                                 | 6                                | 5.5                                  | 1.8                              | 26                               | 0.524                                          | 3.460                                            | 210                                                   | 183      | 179     | 165                                                        | 850                             | 500/D                  |
|                | 50                                                 | 6                                | 5.5                                  | 1.8                              | 27                               | 0.387                                          | 3.130                                            | 253                                                   | 219      | 214     | 195                                                        | 1,000                           | 500/D                  |
|                | 70                                                 | 12                               | 5.5                                  | 1.8                              | 28                               | 0.268                                          | 2.790                                            | 315                                                   | 273      | 266     | 238                                                        | 1,300                           | 500/D                  |
|                | 95                                                 | 15                               | 5.5                                  | 1.9                              | 30                               | 0.193                                          | 2,500                                            | 385                                                   | 333      | 325     | 285                                                        | 1,600                           | 500/D                  |
|                | 120                                                | 18                               | 5.5                                  | 2.0                              | 32                               | 0.153                                          | 2,290                                            | 445                                                   | 385      | 375     | 324                                                        | 1,900                           | 500/D                  |
|                | 150                                                | 18                               | 5.5                                  | 2.0                              | 34                               | 0.124                                          | 2,130                                            | 506                                                   | 438      | 426     | 364                                                        | 2,200                           | 500/D                  |
|                | 185                                                | 30                               | 5.5                                  | 2.1                              | 35                               | 0.0991                                         | 1,970                                            | 561                                                   | 503      | 490     | 411                                                        | 2,600                           | 500/D                  |
|                | 240                                                | 34                               | 5.5                                  | 2.1                              | 38                               | 0.0754                                         | 1,770                                            | 689                                                   | 595      | 579     | 477                                                        | 3,200                           | 500/D                  |
|                | 300                                                | 34                               | 5.5                                  | 2.2                              | 40                               | 0.0601                                         | 1,620                                            | 792                                                   | 684      | 665     | 538                                                        | 3,800                           | 500/D                  |
|                | 400                                                | 53                               | 5.5                                  | 2.3                              | 43                               | 0.0470                                         | 1,480                                            | 920                                                   | 794      | 770     | 610                                                        | 4,700                           | 500/D                  |
|                | 500                                                | 53                               | 5.5                                  | 2.4                              | 47                               | 0.0366                                         | 1,320                                            | 1066                                                  | 920      | 890     | 689                                                        | 6,000                           | 500/D                  |
|                | 630                                                | 53                               | 5.5                                  | 2.5                              | 51                               | 0.0283                                         | 1,190                                            | 1241                                                  | 1067     | 1028    | 777                                                        | 7,500                           | 500/D                  |
|                | 800                                                | 53                               | 5.5                                  | 2.6                              | 55                               | 0.0221                                         | 1,070                                            | 1426                                                  | 1221     | 1169    | 863                                                        | 9,000                           | 500/D                  |
|                | 1000                                               | 53                               | 5.5                                  | 2.8                              | 60                               | 0.0176                                         | 940                                              | 1628                                                  | 1385     | 1318    | 945                                                        | 11,500                          | 300/D                  |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W

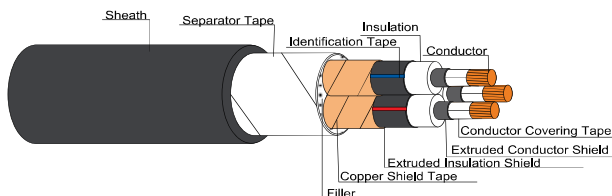
D : Packing in drum

Deep of laying (For cable laid direct in ground) 0.8 m

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C.Resistance |          |         | Inductance   |          |         | Reactance    |          |         | Impedance   |          |         |
|----------------|----------------------------------------------------|----------------|----------|---------|--------------|----------|---------|--------------|----------|---------|-------------|----------|---------|
|                |                                                    | R<br>(Ω/km)    |          |         | L<br>(mH/km) |          |         | XL<br>(Ω/km) |          |         | Z<br>(Ω/km) |          |         |
|                |                                                    | Space          | Touching | Trefoil | Space        | Touching | Trefoil | Space        | Touching | Trefoil | Space       | Touching | Trefoil |
| 1              | 35                                                 | 0.6683         | 0.6683   | 0.6683  | 0.6493       | 0.5107   | 0.4645  | 0.2040       | 0.1604   | 0.1459  | 0.6987      | 0.6873   | 0.6840  |
|                | 50                                                 | 0.4936         | 0.4937   | 0.4937  | 0.6155       | 0.4769   | 0.4307  | 0.1934       | 0.1498   | 0.1353  | 0.5302      | 0.5159   | 0.5119  |
|                | 70                                                 | 0.3420         | 0.3420   | 0.3420  | 0.5918       | 0.4531   | 0.4069  | 0.1859       | 0.1424   | 0.1278  | 0.3892      | 0.3705   | 0.3652  |
|                | 95                                                 | 0.2464         | 0.2465   | 0.2466  | 0.5718       | 0.4332   | 0.3870  | 0.1796       | 0.1361   | 0.1216  | 0.3050      | 0.2816   | 0.2749  |
|                | 120                                                | 0.1955         | 0.1956   | 0.1957  | 0.5565       | 0.4179   | 0.3716  | 0.1748       | 0.1313   | 0.1168  | 0.2623      | 0.2356   | 0.2279  |
|                | 150                                                | 0.1587         | 0.1588   | 0.1589  | 0.5448       | 0.4061   | 0.3599  | 0.1711       | 0.1276   | 0.1131  | 0.2334      | 0.2037   | 0.1950  |
|                | 185                                                | 0.1271         | 0.1272   | 0.1274  | 0.5353       | 0.3967   | 0.3505  | 0.1682       | 0.1246   | 0.1101  | 0.2108      | 0.1781   | 0.1684  |
|                | 240                                                | 0.0971         | 0.0973   | 0.0975  | 0.5204       | 0.3818   | 0.3355  | 0.1635       | 0.1199   | 0.1054  | 0.1901      | 0.1545   | 0.1436  |
|                | 300                                                | 0.0778         | 0.0782   | 0.0785  | 0.5101       | 0.3715   | 0.3253  | 0.1603       | 0.1167   | 0.1022  | 0.1781      | 0.1405   | 0.1288  |
|                | 400                                                | 0.0614         | 0.0619   | 0.0623  | 0.4998       | 0.3612   | 0.3150  | 0.1570       | 0.1135   | 0.0989  | 0.1686      | 0.1293   | 0.1169  |
|                | 500                                                | 0.0486         | 0.0493   | 0.0498  | 0.4908       | 0.3522   | 0.3060  | 0.1542       | 0.1107   | 0.0961  | 0.1617      | 0.1211   | 0.1083  |
|                | 630                                                | 0.0386         | 0.0395   | 0.0402  | 0.4809       | 0.3422   | 0.2960  | 0.1511       | 0.1075   | 0.0930  | 0.1559      | 0.1145   | 0.1013  |
|                | 800                                                | 0.0313         | 0.0324   | 0.0333  | 0.4722       | 0.3335   | 0.2873  | 0.1483       | 0.1048   | 0.0903  | 0.1516      | 0.1097   | 0.0962  |
|                | 1000                                               | 0.0261         | 0.0276   | 0.0287  | 0.4626       | 0.3240   | 0.2778  | 0.1453       | 0.1018   | 0.0873  | 0.1477      | 0.1055   | 0.0919  |

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IEC 60502-2



## CABLE STRUCTURE

**Conductor** : Compacted round annealed copper  
Single-core : Sizes 35 mm<sup>2</sup> up to 400 mm<sup>2</sup>

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**  
3 Cores : White, Red, Blue

**Shield** : Copper tape

**Sheath** : Black polyvinyl chloride (PVC/ST2)

## TECHNICAL DATA

**Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 24,000 Volts

**Rated voltage** : 12,000 Volts between Line to Earth  
: 20,000 Volts between Line to Line

**Testing voltage** : 42,000 Volts

**Reference standard** : IEC 60502-2, IEC 60228, IEC 60332-1

**Remark** : Special protection can be produced

## APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional area | Number of wires minimum | Insulation thickness nominal | Sheath thickness nominal | Overall diameter approx. | Conductor resistance at 20°C maximum | Insulation resistance at 20°C minimum | Continuous current rating in free air at 40°C maximum | Continuous current rating in ground at 30°C maximum | Cable weight approx. | Standard Length |
|-----------------|------------------------------|-------------------------|------------------------------|--------------------------|--------------------------|--------------------------------------|---------------------------------------|-------------------------------------------------------|-----------------------------------------------------|----------------------|-----------------|
|                 | (mm <sup>2</sup> )           | (No.)                   | (mm)                         | (mm)                     | (mm)                     | (Ω/km)                               | (MΩ·km)                               | (A)                                                   | (A)                                                 | (kg/km)              | (m)             |
| 3               | 35                           | 6                       | 5.5                          | 2.7                      | 53                       | 0.524                                | 3,460                                 | 169                                                   | 161                                                 | 3,000                | 500/D           |
|                 | 50                           | 6                       | 5.5                          | 2.8                      | 55                       | 0.387                                | 3,130                                 | 204                                                   | 191                                                 | 3,500                | 500/D           |
|                 | 70                           | 12                      | 5.5                          | 2.9                      | 59                       | 0.268                                | 2,790                                 | 254                                                   | 234                                                 | 4,300                | 500/D           |
|                 | 95                           | 15                      | 5.5                          | 3.0                      | 63                       | 0.193                                | 2,500                                 | 311                                                   | 281                                                 | 5,000                | 500/D           |
|                 | 120                          | 18                      | 5.5                          | 3.1                      | 67                       | 0.153                                | 2,290                                 | 358                                                   | 319                                                 | 6,000                | 500/D           |
|                 | 150                          | 18                      | 5.5                          | 3.2                      | 70                       | 0.124                                | 2,130                                 | 405                                                   | 358                                                 | 7,000                | 300/D           |
|                 | 185                          | 30                      | 5.5                          | 3.3                      | 74                       | 0.0991                               | 1,970                                 | 463                                                   | 404                                                 | 8,500                | 300/D           |
|                 | 240                          | 34                      | 5.5                          | 3.5                      | 80                       | 0.0754                               | 1,770                                 | 546                                                   | 468                                                 | 10,500               | 300/D           |
|                 | 300                          | 34                      | 5.5                          | 3.7                      | 85                       | 0.0601                               | 1,620                                 | 622                                                   | 526                                                 | 12,500               | 300/D           |
|                 | 400                          | 53                      | 5.5                          | 3.9                      | 91                       | 0.0470                               | 1,480                                 | 715                                                   | 595                                                 | 15,000               | 200/D           |

**Remark :** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

| Number of cores | Nominal cross sectional area | A.C.Resistance | Inductance | Reactance | Impedance |
|-----------------|------------------------------|----------------|------------|-----------|-----------|
|                 | (mm <sup>2</sup> )           | R              | L          | XL        | Z         |
|                 | (mm <sup>2</sup> )           | (Ω/km)         | (mH/km)    | (Ω/km)    | (Ω/km)    |
| 3               | 35                           | 0.6683         | 0.4254     | 0.1336    | 0.6815    |
|                 | 50                           | 0.4937         | 0.3935     | 0.1236    | 0.5089    |
|                 | 70                           | 0.3421         | 0.3720     | 0.1169    | 0.3615    |
|                 | 95                           | 0.2466         | 0.3530     | 0.1109    | 0.2704    |
|                 | 120                          | 0.1958         | 0.3375     | 0.1060    | 0.2227    |
|                 | 150                          | 0.1590         | 0.3273     | 0.1028    | 0.1894    |
|                 | 185                          | 0.1275         | 0.3187     | 0.1001    | 0.1621    |
|                 | 240                          | 0.0977         | 0.3059     | 0.0961    | 0.1371    |
|                 | 300                          | 0.0787         | 0.2964     | 0.0931    | 0.1219    |
|                 | 400                          | 0.0627         | 0.2870     | 0.0902    | 0.1098    |