



## Medium Voltage Aluminium Power Cable

### TSLF AXLJ-F TT CL 12 kV 1x500/35

6/10 (12) kV/ 50 Hz

CENELEC HD 620 S2:2010 Part 10 Section K and M; SS 424 14 16:2012

## CONSTRUCTION

|                              |   |
|------------------------------|---|
| <b>Conductor</b>             | Circular, stranded, compacted and watertight aluminium conductor (EN 60228 class 2)   |
|                              | Nominal cross-section 500 mm <sup>2</sup>   |
|                              | Nominal diameter 25,7 mm  |
|                              | Max. d.c.-resistance at 20 °C 0,0605 Ω/km   |
| <b>Conductor screen</b>      | Semiconducting cross-linked polyethylene (XLPE)   |
| <b>Insulation</b>            | Extruded cross-linked polyethylene (XLPE)   |
|                              | Nominal thickness 3,4 mm  |
|                              | Nominal diameter over insulation <sup>1</sup> 32,9 mm   |
| <b>Insulation screen</b>     | Semiconducting cross-linked polyethylene (XLPE)   |
| <b>Metallic screen</b>       | Layer of helically wound copper wires. Water swellable tape applied over copper wire screen with an open helix. Polyethylene laminated aluminium foil acts as a part of the metallic screen and also needs to be connected in cable joints and terminations |
|                              | Nominal size of the metallic screen 35 mm <sup>2</sup>  |
|                              | Max. d.c.-resistance at 20 °C 0,524 Ω/km  |
|                              | <small>1m lenght and 1mm<sup>2</sup> cross section Al conductor 's DC resistance at +20°C, Ω</small> 0,0605   |
| <b>Radial watertightness</b> | Polyethylene laminated aluminium foil bonded to the sheath  |
| <b>Sheath</b>                | Grey polyethylene (PE-LLD) sheath with a black semiconducting outer layer   |
|                              | Nominal thickness without semicon. layer 2,3 mm   |
|                              | Nominal thickness of semicon. layer 0,3 mm  |
|                              | Overall diameter of the cable <sup>1</sup> 45 mm  |
|                              | Total weight <sup>1</sup> 2350 kg/km  |

## MECHANICAL DETAILS

|                            |  |                          |    |
|----------------------------|--|--------------------------|----|
| <b>Min. bending radii</b>  | During handling and installation                                     | 0,68                     | m  |
|                            | In case of one bending to final position                             | 0,47                     | m  |
| <b>Max. pulling forces</b> | Pulling by pulling head  | 20,0                     | kN |
|                            | Pulling by pulling-stocking  | 7,5                      | kN |
| <b>Temperature limits</b>  | Max. conductor temperature   | 90                       | °C |
|                            | Max. short circuit temperature<br>(duration not exceeding 5 sec)     | 250                      | °C |
|                            | Min. temperature during transport                                    | -40                      | °C |
|                            | Max. / Min. temperature during installation                          | +35 / -20                | °C |
|                            | Max. temperature during instalation<br>Operating ambient temperature | +35<br>from -35 to -35°C | °C |

## ELECTRICAL DETAILS

|                                |   |      |       |
|--------------------------------|---|------|-------|
| <b>Current rating</b>          | In the air in trefoil formation   | 775  | A     |
|                                | In ground in trefoil formation  | 570  | A     |
|                                | Other conditions:   |      |       |
|                                | Conductor temperature   | 65   | °C    |
|                                | Soil temperature  | 15   | °C    |
|                                | Soil thermal resistivity  | 1,0  | K.m/W |
|                                | Installation depth  | 0,7  | m     |
|                                | Metallic screen is bonded at both ends. Defined according to HD 620 S2:2010 Part 10 F   |      |       |
| <b>Short circuit currents</b>  | Max. 1 sec. short circuit current $I_{th}$ of conductor<br>(Temperature from 90 °C to 250 °C)   | 47,0 | kA    |
|                                | Max. 1 sec. short circuit current $I_{th}$ of metallic screen<br>(Temperature from 80 °C to 250 °C)                                       | 5,2  | kA    |
| <b>Inductance<sup>1</sup></b>  | Trefoil formation, cables touching  | 0,30 | mH/km |
|                                | Flat formation, free space one diameter   | 0,49 | mH/km |
| <b>Capacitance<sup>1</sup></b> | Operation capacitance   | 0,59 | µF/km |
|                                | Charging current <sup>2</sup>   | 1,1  | A/km  |
|                                | Earth fault current <sup>2</sup>  | 3,2  | A/km  |
| <b>Applications</b>            | Cable is intended for fixed installations outdoors. It may be installed directly into soil.<br>Not for submarine or similar applications. |      |       |

|   |                      |
|---|----------------------|
| Dielectric loss factor (tg δ) at 50 Hz              | 2,3                  |
| Dielectric constant (ε) at 50 Hz, from 20°C to 90°C | 0,4x10 <sup>-3</sup> |
| Site altitude above sea level, m                    | 1000                 |

1) Approx. values, for guidance only

2) Approx. values, calculated with nominal system voltage, for guidance only