MTX GRID

MT S105 GRID

When considering the reliability requirement of the underground power distribution networks and the renewable generation plants, Conduspar developed the GRID line.

The underground distribution circuits are mainly subject to permanent contact with humidity, or even total submersion. The humidity can be extremely harmful to insulating materials in medium voltage, with reduced life expectancy and circuits subject to unexpected faults.

To increase the reliability of these medium voltage circuits, the Conduspar GRID line has protection structures against the penetration of humidity inside the cables, and a cover in highly resistant material to abrasion and humidity absorption.

The MTX GRID and MTS105 GRID lines feature unique construction features, which protect cables from permanent contact with humidity in directly buried installations.

The constructive advantages of Conduspar MT GRID cables are:

- Aluminum conductors blocked against longitudinal penetration of humidity.
- Metallic shielding with specific sections for short circuit characteristics of the system and blocking of longitudinal penetration of humidity.
- Coverage in high density polyethylene (PE/ST7) resistant to abrasion and contact with humidity.
- MT GRID cable lines are available for voltage classes from 8,7/15 to 20/35 kV.

The main difference of application between the MTX GRID and MTS105 GRID lines is the current carrying capacity. The MTX line is insulated in XLPE, for temperatures in the conductor up to 90°C and the line MTS105 is isolated in EPR, for temperatures up to 105°C in the conductor. The insulation in EPR105 allows about 10% more current capacity.

Cable MTX GRID 35 kV

The version of the GRID line isolated in XLPE for voltages up to 35 kV. The XLPE is the material traditionally used as an insulation for medium voltage cables in large distribution lines and power generation networks.

Construction

Phase conductor: aluminum wires 1350, stringing class 2, compact, with longitudinal humidity locking, acc. to NM 280.
Conductor shielding: semiconductive thermosetting compound.
Insulation: thermosetting compound of XLPE (reticular polyethylene), with coordinated, extruded and vulcanized thickness simultaneously with the semiconductive layers.
Insulation shielding: semiconductive thermosetting compound with ease cold extraction.
Metallic shielding: bare copper wiring crown, effective section of 6,5 mm², with longitudinal humidity locking (other sections on request).
Coverage: thermoplastic compound of PE/ST7, indicated for permanent contact with humidity and directly buried installations, in black.

Maximum Operating Temperatures

In continuous regime: 90°C
In overload: 130°C
In short circuit: 250°C

Reference Standards

NBR 7287 - Power cables with solid extruded insulation of reticular polyethylene (XLPE) for insulation voltages from 1 to 35 kV - Performance requirements.
ABNT NBR NM 280 - Conductors of insulated cables (IEC 60228, MOD).

Conditioning

In reels.

Nominal Dimensions

Unipolar Cables 20/35 kV						
Section	Conductor	Insulation		Coverage		Nominal
	Diameter	Thickness	Diameter	Thickness	Diameter	Weight
(mm²)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)
50	8,15	8,8	27,5	1,9	35,0	1.025
70	9,65	8,8	29,0	1,9	36,7	1.145
95	11,45	8,8	30,9	2,0	38,7	1.285
120	12,95	8,8	32,4	2,0	40,4	1.455
150	14,40	8,8	33,9	2,1	42,1	1.540
185	16,15	8,8	35,6	2,1	44,0	1.760
240	18,29	8,8	37,8	2,2	46,4	1.945
300	20,65	8,8	40,2	2,3	49,1	2.200
400	23,65	8,8	43,3	2,4	52,5	2.635
500	26,32	8,8	46,0	2,5	55,5	1.955
630	29,90	8,8	49,7	2,6	59,5	3.485