TOPSOLAR® PV LSZH Al 1500 V HEAVY DUTY

Aluminium cable for buried photovoltaic installations.

ACCORDING TO: IEC 60502-1

APPLICATION

The TOPSOLAR® PV LSZH HEAVY DUTY cable can be directly buried in most soils. They can be installed in smaller trenches as no sand or external backfill is required.

The special outer sheath compounds make this cable highly resistant to possible shocks and friction during its installation (impact and tearing). In addition, the cable is AD8 water resistant (submersible).

Finally, this cable resists degradation caused by ultraviolet (UV) rays as it is tested for UV protection according to the solar standard EN 50618.

CONSTRUCTION

Conductor
Aluminium class 2 according to EN 60228 and IEC 60228.

Insulation
Cross-linked polyethylene type XLPE according to IEC 60502-1.
Natural colour.

Outer sheath
Polyethylene halogen free and UV resistant, type ST7 according to IEC 60502-1, with extra thickness as protection for direct buried cables.
Black colour.

CHARACTERISTICS

Electrical performance
Low voltage: 1,5/1,5 (1,8) kV DC according to EN 50618.
1,8/3 (3,6) kV AC according to IEC 60502-1.

Thermal performance
Maximum conductor temperature: 90°C.
Maximum short-circuit temperature: 250°C (max. 5 s).
Minimum service temperature: -40°C (fixed and protected installations).
Minimum installation and handling temperature: 0°C (on cable surface).

Fire performance
Halogen free according to EN 60754-1 / IEC 60754-1.
Low corrosive gases emission according to EN 60754-2 / IEC 60754-2.

Mechanical performance
Minimum bending radius during installation: 5x cable diameter.
Impact resistance: AG4 (≤ 40 J) Extra high severity according to NF C 33-226.
Abrasion according to NF C 33-226.

Environmental performance
UV Resistant according to EN 50618.
Water resistance: AD8 Submersion.

Installation conditions
Open Air.
Buried.
In conduit.

STANDARDS / COMPLIANCE

According to
IEC 60502-1

Standards and approvals
CE / RoHS

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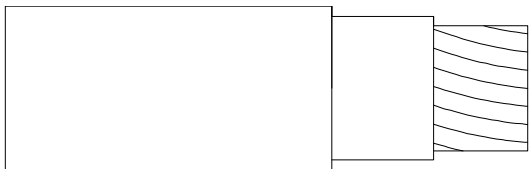
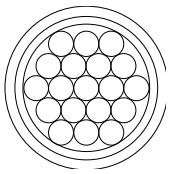
DIMENSIONS & ADMISSIBLE INTENSITIES





Cross-section (mm^2)	Diameter (mm)	Weight (Kg/km)	R max. 20°C (Ω/km)	Open Air (A) [1]	Buried (A) [2]	Voltage drop (V/A · km) [3]
1 x 70	21,8	460	0,443	237	170	1,135
1 x 95	23,2	550	0,320	289	204	0,820
1 x 120	24,1	630	0,253	337	233	0,648
1 x 150	25,3	755	0,206	389	261	0,528
1 x 185	26,9	880	0,164	447	296	0,420
1 x 240	29,0	1.065	0,125	530	343	0,320
1 x 300	31,0	1.240	0,100	613	386	0,256
1 x 400	33,2	1.505	0,0778	740	445	0,199
4 x 1 x 150	61,3	2.945	0,206	389	261	0,528
4 x 1 x 240	69,9	4.145	0,125	530	343	0,320
4 x 1 x 300	74,7	4.840	0,100	613	386	0,256

[1] Reference method F for single-core and method E for multicore cables according to IEC 60364-5-52 in open air at 30°C ambient temperature.
[2] Reference method D2 according to IEC 60364-5-52. Directly buried at 0,7 m depth with soil thermal resistivity of 2,5 K·m/W and 20°C of ground temperature.
[3] At maximum conductor temperature and $\cos\varphi=1$.
In all cases are supposed a single-phase circuit.

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SHORT-CIRCUIT CURRENT-CARRYING CAPACITIES

Time (s)	0,1	0,2	0,3	0,5	1	1,5	2	2,5	3
A/mm²	299	211	173	134	94	77	67	60	55

CORRECTION FACTORS FOR AIR TEMPERATURE

Air T. (°C)	20	25	30	35	40	45	50	55	60
Factor	1,08	1,04	1	0,96	0,91	0,87	0,82	0,76	0,71

CORRECTION FACTORS FOR GROUND TEMPERATURE

Ground T. (°C)	10	15	20	25	30	35	40	45	50
Factor	1,07	1,04	1	0,96	0,93	0,89	0,85	0,80	0,76

CORRECTION FACTORS FOR SOIL THERMAL RESISTIVITY

Direct buried cables						
0,5 K·m/W	0,7 K·m/W	1 K·m/W	1,5 K·m/W	2 K·m/W	2,5 K·m/W	3 K·m/W
1,88	1,62	1,50	1,28	1,12	1	0,90

Other correction factors (for grouping cables, for harmonic currents), that are not in this specification, can be applied. Further information can be found in IEC 60364-5-52.