TOXFREE® LSZH Z1Z1-K (AS)

Flexible and halogen free (LSHF) power cable for public places.

BASED ON: UNE 211034

100% Green Energy Cable Production

B2ca

APPLICATION

Toxfree® LSZH Z1Z1-K (AS) is a LSHF safety cable. In the event of fire, it does not emit toxic gases, nor does it give off corrosive gases, avoiding any possible damage to people or electronic equipment. For these reasons it is highly recommended for use in public places such as: hospitals, schools, museums, airports, bus terminals, shopping malls, offices, laboratories, etc.

- Industrial use.
- Public places.

CONSTRUCTION

Conductor
Electrolytic annealed copper, class 5 (flexible) according to EN 60228 and IEC 60228.

Insulation
Special low smoke and halogen free polyolefin, type TI7 according to EN 50363-7.
The standard identification of insulated conductors according to HD 308 is the following:
6 G or more Black numbered + Green/Yellow

Outer sheath
Low smoke halogen free polyolefin, not toxic and fire retardant, type DMZ-E according to UNE 211034.
Green colour.
Other outer sheath colours available on request.

CHARACTERISTICS

Electrical performance
Low voltage: 0,6/1 kV.

Thermal performance
Maximum conductor temperature: 70°C.
Maximum short-circuit temperature: 160°C (max. 5 s).
Minimum service temperature: -40°C (static, with protection).

Fire performance
Flame non-propagation according to EN 60332-1 / IEC 60332-1.
Fire non-propagation according to EN 60332-3 / IEC 60332-3 and EN 50399.
Reaction to fire CPR: $B2_{ca}$-s1a, d1, a1 according to EN 50575.
Low smoke halogen free according to EN 60754-1 / IEC 60754-1.
Low corrosive gases emission according to EN 60754-2 / IEC 60754-2.
Low smoke emission according to EN 61034 / IEC 61034:
Light transmittance > 80%.

Mechanical performance
Minimum bending radius during installation: 5x cable diameter.
Impact resistance: AG2 Medium severity.

Environmental performance
Chemical & Oil resistance: Acceptable.
UV Resistant according to UNE 211605 and EN 50618.
Water resistance: AD5 Jets.

Installation conditions
Open Air.
Buried.
In conduit.

STANDARDS / COMPLIANCE

Based on:
UNE 211034

Standards and approvals
RoHS / CE

CPR (Construction Products Regulation)
$B2_{ca}$-s1a, d1, a1

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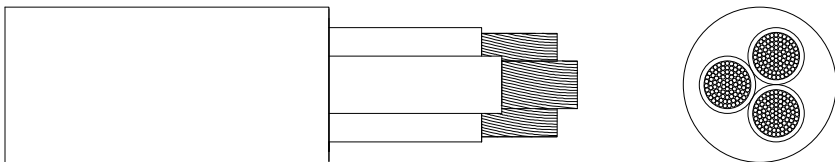
DIMENSIONS & ADMISSIBLE INTENSITIES



Cross-section (mm^2)	Diameter (mm)	Weight (kg/km)	Open air (A) [1]	Buried (A) [2]	Voltage drop (V/A · km) [3]
6 G 1,5	11,4	210	22	22	31,8
6 G 2,5	12,8	280	30	29	19,1
7 G 1,5	11,2	220	22	22	31,8
7 G 2,5	12,7	305	30	29	19,1
7 G 4	14,4	425	40	37	11,8
8 G 1,5	12,3	250	22	22	31,8
8 G 2,5	13,8	345	30	29	19,1
10 G 1,5	13,2	295	22	22	31,8
10 G 2,5	14,7	415	30	29	19,1
12 G 1,5	13,9	335	22	22	31,8
12 G 2,5	15,8	475	30	29	19,1
16 G 1,5	16,1	440	22	22	31,8
16 G 2,5	18,3	625	30	29	19,1
18 G 1,5	17,0	485	22	22	31,8
18 G 2,5	19,5	685	30	29	19,1
19 G 1,5	16,7	500	22	22	31,8
19 G 2,5	19,2	715	30	29	19,1
20 G 1,5	17,8	530	22	22	31,8
20 G 2,5	20,6	765	30	29	19,1
24 G 1,5	18,8	615	22	22	31,8
24 G 2,5	22,1	885	30	29	19,1
25 G 1,5	20,4	655	22	22	31,8
25 G 2,5	23,6	920	30	29	19,1
27 G 1,5	20,1	670	22	22	31,8
27 G 2,5	23,8	980	30	29	19,1
30 G 1,5	20,5	715	22	22	31,8
30 G 2,5	23,4	1.030	30	29	19,1
44 G 1,5	25,2	1.045	22	22	31,8

[1] Reference method E for multicore cables according to IEC 60364-5-52 in open air at 30°C ambient temperature.
[2] Reference method D1 according to IEC 60364-5-52. Buried in duct 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 $\cos\varphi=1$.
For 6 or more conductors 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	452	320	261	202	143	117	101	90	83

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	0,8	0,76

CORRECTION FACTORS FOR SOIL THERMAL RESISTIVITY

Moisture degree of soil	Very damp	Slightly damp	Slightly dry	Dry	Very dry
Thermal Resist. (K·m/W)	1	1,5	2	2,5	3
Factor	1,18	1,10	1,05	1	0,96

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.