TOXFREE® LSZH YMz1Kf

Flexible LSHF power cable, for public places.

ACCORDING TO: IEC 60502-1 / UNE 21123-4

100% Green Energy Cable Production

$B2_{ca}$
C_{ca}

APPLICATION

Toxfree® LSZH YMz1Kf is a LSZH 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 centers, offices, laboratories, etc.

- Industrial use.
- Public places

CONSTRUCTION

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

Insulation
Cross-linked polyethylene type XLPE according to IEC 60502-1 and type DIX-3 according to HD 603.
The standard identification of insulated conductors according to HD 308 is the following:

1 x	Natural
2 x	Blue + Brown
3 G	Blue + Brown + Green/Yellow
3 x	Brown + Black + Grey
3 x + 1 x	Brown + Black + Grey + Blue (reduced cross-section)
4 G	Brown + Black + Grey + Green/Yellow
4 x	Brown + Black + Grey + Blue
5 G	Brown + Black + Grey + Blue + Green/Yellow
6 or more	Black numbered + Green/Yellow

Outer sheath
Low Smoke Halogen Free (LSHF) polyolefin outer sheath. Green colour.

CHARACTERISTICS

Electrical performance
Low voltage: 0,6/1 kV

Thermal performance
Maximum service 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.

Fire performance
Flame non-propagation according to IEC 60332-1 / EN 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 or C_{ca}-s1a,d1,a1, according to EN 50575 (see cross-section).
Low Smoke Halogen Free according to EN 60754-1 / IEC 60754-1.
Low smoke emission according to EN 61034 / IEC 61034:
Light transmittance > 80%.
Low corrosive gases emission according to EN 60754-2 / IEC 60754 2.

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

Environmental performance
Chemical & Oil resistance: acceptable.
UV Resistant according to EN 50618.
Water resistance: AD5 Jets.

Installation conditions
Open Air. | Buried. | In conduit.

STANDARDS / COMPLIANCE

According to
IEC 60502-1 / UNE 21123-4

Standards and approvals
AENOR / KEMA-KEUR / RoHS / CE

CPR (Construction Products Regulation)
$B2_{ca}$-s1a,d1,a1 (according to cross-section) or
C_{ca}-s1a,d1,a1 (according to cross-section)

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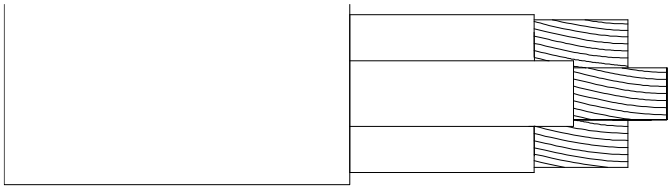
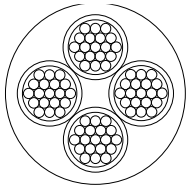
TOXFREE® LSZH
YMz1Kf

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]
1 x 2,5	7,1	75	39	35	20,3
1 x 4	7,6	95	53	46	12,6
1 x 6	8,2	120	68	58	8,41
1 x 10	9,1	165	93	77	4,87
1 x 16	10,1	225	124	100	3,08
1 x 25	11,3	305	161	129	1,98
1 x 35	12,2	400	200	155	1,41
1 x 50	13,9	535	242	183	0,984
1 x 70	15,8	730	310	225	0,693
1 x 95	17,6	945	377	270	0,525
1 x 120	19,5	1.185	437	306	0,410
1 x 150	21,7	1.470	504	343	0,328
1 x 185	23,8	1.770	575	387	0,270
1 x 240	26,7	2.310	679	448	0,204
1 x 300	29,5	2.905	783	502	0,163
1 x 400	34,2	3.825	930	592	0,123
1 x 500	37,9	4.885	1.070	670	0,097
1 x 630	43,1	6.410	1.232	762	0,073
2 x 1,5	9,3	125	26	27	33,9
2 x 2,5	9,8	145	36	35	20,3
2 x 4	10,8	190	49	46	12,6
2 x 6	11,8	245	63	58	8,41
2 x 10	13,6	355	86	77	4,87
2 x 16	15,3	495	115	100	3,08
3 G 1,5	10,4	155	26	27	33,9
3 G 2,5	10,9	190	36	35	20,3
3 G 4	11,9	240	49	46	12,6
3 G 6	13,0	310	63	58	8,41
3 G 10	14,8	450	86	77	4,87
3 x 16	16,8	645	115	100	3,08
3 x 25	21,4	1.020	149	129	1,98
3 x 35	23,8	1.345	185	155	1,41
3 x 50	27,2	1.825	225	183	0,984
3 x 70	30,3	2.470	289	225	0,693
3 x 95	35,2	3.245	352	270	0,525
3 x 120	39,1	4.095	410	306	0,410
3 x 150	43,9	5.105	473	343	0,328
3 x 185	48,6	6.195	542	387	0,270
3 x 16 + 1 x 10	19,1	800	115	100	3,08
3 x 25 + 1 x 16	22,5	1.165	149	129	1,98
3 x 35 + 1 x 16	24,4	1.480	185	155	1,41
3 x 50 + 1 x 25	28,6	2.050	225	183	0,984
3 x 70 + 1 x 35	32,9	2.815	289	225	0,693
3 x 95 + 1 x 50	37,1	3.690	352	270	0,525
3 x 120 + 1 x 70	40,8	4.700	410	306	0,410
3 x 150 + 1 x 70	45,9	5.725	473	343	0,328
3 x 185 + 1 x 95	51,4	7.000	542	387	0,270
3 x 240 + 1 x 120	58,6	9.185	641	448	0,204

TOXFREE® LSZH
YMz1Kf

Cross-section (mm^2)	Diameter (mm)	Weight (kg/km)	Open air (A) [1]	Buried (A) [2]	Voltage drop (V/A · km) [3]
3 x 300	61,0	10.180	741	502	0,163
4 G 1,5	11,2	180	26	27	33,9
4 G 2,5	11,9	225	36	35	20,3
4 G 4	12,9	290	49	46	12,6
4 G 6	14,3	380	63	58	8,41
4 G 10	16,3	565	86	77	4,87
4 x 16	18,8	815	115	100	3,08
4 x 25	23,8	1.275	149	129	1,98
4 x 35	25,9	1.700	185	155	1,41
4 x 50	30,1	2.310	225	183	0,984
4 x 70	34,8	3.185	289	225	0,693
4 x 95	39,9	4.185	352	270	0,525
4 x 120	44,8	5.305	410	306	0,410
4 x 150	49,3	6.548	473	343	0,328
4 x 185	54,8	7.965	542	387	0,270
4 x 240	61,7	10.370	641	448	0,204
4 x 300	68,0	13.055	741	502	0,163
5 G 1,5	12,6	230	26	27	33,9
5 G 2,5	13,2	275	36	35	20,3
5 G 4	14,4	355	49	46	12,6
5 G 6	15,9	470	63	58	8,41
5 G 10	18,0	685	86	77	4,87
5 G 16	20,9	1.000	115	100	3,08
5 G 25	25,9	1.550	149	129	1,98
5 G 35	28,3	2.050	185	155	1,41
5 G 50	33,7	2.840	225	183	0,984
5 G 70	38,6	3.905	289	225	0,693
5 G 95	43,5	5.080	352	270	0,525
5 G 120	49,5	6.395	410	306	0,410
5 G 150	55,1	7.935	473	343	0,328
5 G 185	61,1	9.665	542	387	0,270
5 G 240	68,8	12.620	641	448	0,204

[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 service temperature and cosφ=1.
In all cases it is supposed a single-phase circuit.

TOXFREE® ZH
RZ1-K (AS)

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	1,50	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.