TOXFREE® ZH
RZ1MZ1-K (AS)

Halogen free (LSHF) armoured cable with galvanized steel wire armour (ATEX).

ACCORDING TO: IEC 60502-1

100% Green Energy Cable Production

C_{ca}

APPLICATION

Toxfree® RZ1MZ1-K (AS) is a LSHF is a safety cable. In case of fire, it does not emit toxic or corrosive gases, protecting people and avoiding possible damage to electronic equipment. Therefore its use is recommended for public places, in hazardous areas with explosive gas atmospheres (ATEX), and installations where the cable is subject to risk of mechanical aggression.

CONSTRUCTION

Conductor

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

Insulation

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

1 x	Natural
2 x	Blue + Brown
3 G	Blue + Brown + Green/Yellow
3 x	Brown + Black + Grey
4 G	Brown + Black + Grey + Green/Yellow
4 x	Brown + Black + Grey + Blue
5 G	Brown + Black + Grey + Green/Yellow + Blue
6 or more	Black numbered + Green/Yellow

Armour bedding

Low smoke zero halogen (LSHF) polyolefin separation sheath.

Armour

Galvanized steel wire armour. Aluminium armour is used in single core cables to avoid parasite currents that may overheat the cable.

Outer sheath

Low Smoke Halogen Free (LSHF) polyolefin type ST8 according to IEC 60502-1. Black colour.

CHARACTERISTICS

Electrical performance

Low voltage: 0,6/1 kV

Thermal performance

Maximum service temperature: 90ºC.
Maximum short-circuit temperature: 250ºC (max. 5 s).
Minimum service temperature: -50 °C according to GOST 31996.
Minimum installation and handling temperature: 0 °C

Fire performance

Flame non-propagation according to EN 60332-1 and IEC 60332-1.
Fire non-propagation according to EN 60332-3, IEC 60332-3 and EN 50399.
Reaction to fire CPR: C_{ca}-s1b, d1, a1, according to EN 50575.
Low Smoke Halogen Free according to EN 60754-1 and IEC 60754.
Low smoke emission according to EN 61034 and IEC 61034:
Light transmittance > 60%.
Low corrosive gases emission according to EN 60754-2 and IEC 60754-2.

Mechanical performance

Minimum bending radius: 10 x cable diameter.
Impact resistance: AG4 High severity.
Rodent proof.

Environmental performance

Chemical & Oil resistance: acceptable.
Hydrocarbon resistant
UV Resistant according to EN 50618.
Potentially explosion hazard locations (ATEX)
Water resistance: AD5 Jets.

Installation conditions

Open Air.
Buried.
In Conduit.

STANDARDS / COMPLIANCE

According to

IEC 60502-1.

Standards and approvals

CE / RoHS.

CPR (Construction Products Regulation)

C_{ca} -s1b, d1, a1.

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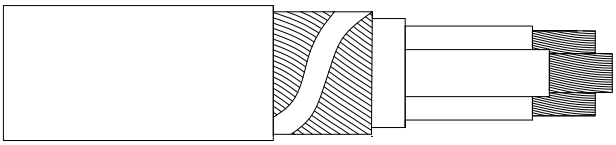
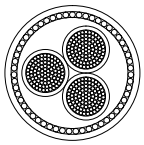
DIMENSIONS & ADMISSIBLE INTENSITIES





Cross-section (mm^2)	Diameter (mm)	Weight (kg/km)	Open air (A) [1]	Buried (A) [2]	Voltage drop (V/A · km) [3]
1 x 10	14,6	341	93	77	4,87
1 x 16	15,3	405	124	100	3,08
1 x 25	17,6	550	161	129	1,98
1 x 35	18,7	665	200	155	1,41
1 x 50	20,3	825	242	183	0,984
1 x 70	22,0	1.050	310	225	0,693
1 x 95	23,8	1.275	377	270	0,525
1 x 120	25,5	1.545	437	306	0,410
1 x 150	27,6	1.855	504	343	0,328
1 x 185	29,7	2.190	575	387	0,270
1 x 240	32,5	2.765	679	448	0,204
1 x 300	37,7	3.405	783	502	0,163
1 x 400	42,1	4.440	930	592	0,123
1 x 500	45,8	5.810	1.070	670	0,097
1 x 630	51,6	7.545	1.232	762	0,073
1 x 800	61,1	9.760	1.426	870	0,056
2 x 1,5	11,9	270	26	27	33,9
2 x 2,5	12,8	315	36	35	20,3
2 x 4	13,9	385	49	46	12,6
2 x 6	14,9	455	63	58	8,41
2 x 10	17,0	615	86	77	4,87
2 x 16	19,3	820	115	100	3,08
2 x 25	25,5	1.495	149	129	1,98
2 x 35	27,6	1.785	185	155	1,41
3 G 1,5	12,6	295	26	27	33,9
3 G 2,5	13,5	350	36	35	20,3
3 G 4	14,6	430	49	46	12,6
3 G 6	15,9	520	63	58	8,41
3 G 10	18,1	735	86	77	4,87
3 x 16	22,7	1.345	115	100	3,08
3 x 25	26,3	1.800	149	129	1,98
3 x 35	29,3	2.245	185	155	1,41
3 x 50	32,7	2.875	225	183	0,984
4 G 1,5	13,4	355	26	27	33,9
4 G 2,5	14,3	400	36	35	20,3
4 G 4	15,8	500	49	46	12,6
4 G 6	17,2	610	63	58	8,41

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4 G 10	19,7	870	86	77	4,87
4 x 16	24,5	1.505	115	100	3,08
4 x 25	29,0	2.040	149	129	1,98
4 x 35	31,2	2.505	185	155	1,41
4 x 50	36,2	3.305	225	183	0,984
4 x 70	42,3	5.100	289	225	0,693
4 x 95	46,3	6.170	352	270	0,525
4 x 120	51,5	7.690	410	306	0,410
4 x 150	57,1	9.240	473	343	0,328
4 x 185	62,6	10.955	542	387	0,270
4 x 240	69,6	13.720	641	448	0,204
5 G 1,5	14,1	370	26	27	33,9
5 G 2,5	15,3	455	36	35	20,3
5 G 4	17,0	580	49	46	12,6
5 G 6	18,5	735	63	58	8,41
5 G 10	23,5	1.325	86	77	4,87
5 G 16	26,6	1.755	115	100	3,08
5 G 25	31,2	2.385	149	129	1,98
5 G 35	34,2	3.010	185	155	1,41
5 G 50	39,3	3.995	225	183	0,984
5 G 70	45,5	5.960	289	225	0,693
7 G 1,5	14,6	420	26	27	33,9
7 G 2,5	16,1	535	36	35	20,3
10 G 1,5	17,7	570	26	27	33,9
10 G 2,5	19,8	725	36	35	20,3
12 G 1,5	17,4	580	26	27	33,9
12 G 2,5	22,2	1.065	36	35	20,3
16 G 1,5	21,6	995	26	27	33,9
18 G 1,5	22,8	1.070	26	27	33,9
19 G 1,5	22,8	1.080	26	27	33,9
24 G 1,5	24,4	1.235	26	27	33,9
37 G 1,5	28,0	1.580	26	27	33,9

[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 $\cos\varphi=1$.

For all cables is supposed a single-phase circuit.