TOXFREE® ZH RZ1FZ1-K (AS)

Halogen free (LSHF) armoured cable with steel or aluminium tape armour.

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

100% Green Energy Cable Production

C_{ca}

APPLICATION

Toxfree® ZH RZ1FZ1-K (AS) is an armoured LSHF safety cable. In case of fire, it does not emit toxic or corrosive gases, thereby protecting public health and avoiding any possible damage to electronic equipment. Its use is highly recommended for public places, in installations with presence of rodents, 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 XLPE according to IEC 60502-1 and type DIX-3 according to HD 603.
The standard identification of insulated conductors according to UNE 21089 and HD 308 is the following:

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 + Blue + Green/Yellow
6 or more	Black numbered + Green/Yellow

Armour bedding
Low smoke zero halogen (LSHF) polyolefin inner sheath.

Armour
Double steel or aluminium tape armour. Aluminium armour is used in single-core cables to avoid parasite currents that may overheat the cable. Steel tape is used in the multicore cables.

Outer sheath
LSHF polyolefin outer sheath type ST8 according to IEC 60502-1 and type DMZ-E according UNE 21123-4. Green colour.

CHARACTERISTICS

Electrical performance
Low voltage: 0,6/1kV

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)

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: C_{ca}-s1b,d1,a1, according to EN 50575.
LSHF (Low Smoke Halogen Free) according to EN60754-1 / IEC60754-1
Low smoke emission according to EN 61034 / IEC 61034:
Light transmittance > 60%.
Low corrosive gases emission according to EN 60754-2 / IEC 60754-2.

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

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
RoHS / CE

CPR (Construction Products Regulation)
C_{ca}-s1b, d1, a1

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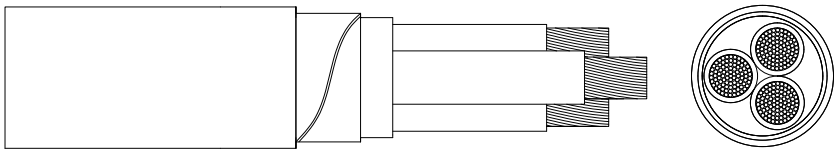
DIMENSIONS & ADMISSIBLE INTENSITIES



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	15,6	355	74	65	4,23
1 x 16	15,6	390	101	84	2,68
1 x 25	16,2	465	135	107	1,73
1 x 35	17,3	575	169	129	1,23
1 x 50	19,0	735	207	153	0,86
1 x 70	20,9	955	268	188	0,603
1 x 95	22,6	1.190	328	226	0,457
1 x 120	24,2	1.445	383	257	0,357
1 x 150	26,3	1.740	444	287	0,286
1 x 185	28,7	2.075	510	324	0,235
1 x 240	31,7	2.645	607	375	0,178
1 x 300	34,4	3.260	703	419	0,142
1 x 400	38,4	4.225	823	493	0,107
1 x 630	48,7	6.985	1.088	634	0,063
2 x 1,5	12,3	235	26	27	34,0
2 x 2,5	13,2	275	36	35	20,4
2 x 4	14,3	335	49	46	12,7
2 x 6	15,3	400	63	58	8,45
2 x 10	17,2	535	86	77	4,89
2 x 16	19,0	700	115	100	3,1
2 x 25	23,0	1.015	149	129	2,0
2 x 35	25,1	1.280	185	155	1,42
3 G 1,5	13,0	265	26	27	34,0
3 G 2,5	13,9	315	36	35	20,4
3 G 4	15,0	380	49	46	12,7
3 G 6	16,1	465	63	58	8,45
3 G 10	18,3	640	86	77	4,89
3 x 16	20,3	855	100	84	2,68
3 x 25	23,8	1.220	127	107	1,73
3 x 35	26,6	1.585	158	129	1,23
3 x 50	30,3	2.115	192	153	0,86
3 x 70	34,9	2.870	246	188	0,603
3 x 95	40,1	4.025	298	226	0,457
3 x 120	43,8	4.940	346	257	0,357
3 x 150	48,7	6.050	399	287	0,286

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Cross-section (mm^2)	Diameter (mm)	Weight (kg/km)	Open air (A)[1]	Buried (A)[2]	Voltage drop (V/A·km)[3]
3 x 185	54,9	7.405	456	324	0,235
3 x 240	61,5	9.450	538	375	0,178
4 G 1,5	13,8	295	23	23	29,5
4 G 2,5	14,7	355	32	30	17,7
4 G 4	16,0	440	42	39	11,0
4 G 6	17,4	550	54	49	7,32
4 G 10	19,7	765	75	65	4,23
4 x 16	22,2	1.039	100	84	2,68
4 x 25	25,8	1.480	127	107	1,73
4 x 35	28,5	1.940	158	129	1,23
4 x 50	33,7	2.645	192	153	0,86
4 x 70	39,7	3.940	246	188	0,603
4 x 95	44,0	4.980	298	226	0,457
4 x 120	48,6	6.205	346	257	0,357
4 x 150	54,2	7.675	399	287	0,286
4 x 185	60,1	9.210	456	324	0,235
4 x 240	67,6	11.870	538	375	0,178
4 x 300	74,9	14.760	621	419	0,142
4 x 500	97,3	25.240	835	558	0,085
5 G 1,5	14,7	335	23	23	29,5
5 G 2,5	15,6	400	32	30	17,7
5 G 4	17,2	510	42	39	11,0
5 G 6	18,7	640	54	49	7,32
5 G 10	21,2	900	75	65	4,23
5 G 16	24,1	1.240	100	84	2,68
5 G 25	28,5	1.805	127	107	1,73
5 G 35	31,5	2.355	158	129	1,23

[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 cables having 2 conductors or 3 conductors up to 10 mm^2, it is supposed a single-phase circuit. For the rest of the cables it is supposed a three-phase circuit.