TOXFREE® ZH FR-N1 X1G1

Halogen free (LSHF) power cable for public places.

ACCORDING TO: NF C 32-323

100% Green Energy Cable Production

C_{ca}

APPLICATION

Toxfree® ZH FR-N1 X1G1-U and FR-N1 X1G1-R 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 centers, offices, laboratories, etc.

CONSTRUCTION

Conductor

Electrolytic annealed copper conductor, class 1 (FR-N1 X1G1-U from 1,5 mm^2 to 4 mm^2) or class 2 (FR-N1 X1G1-R to 6 mm^2), 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:

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

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: -0oC

Fire performance

Flame non-propagation according to EN 60332-1 / IEC 60332-1 / NF EN 50265-2-1 (category C).

Fire non-propagation according to EN 60332-3 / IEC 60332-3 and NF C 32-070 (category C1).

LSHF (Low Smoke Halogen Free) according to EN 60754-1 / IEC 60754-1.

Reaction to fire CPR: C_{ca}-s1a,d1,a1 according to EN 50575.

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.

Water resistance: AD5 Jets.

Installation conditions

Open Air.

Buried.

In conduit.

STANDARDS / COMPLIANCE

According to

NF C 32-323

Standards and approvals

NF-USE / RoHS / CE

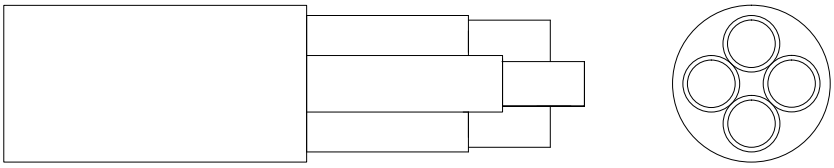
CPR (Construction Products Regulation)

C_{ca}-s1a, d1, a1

NF-USE

TOXFREE® ZH FR-N1 X1G1

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]
2 x 1,5	9,4	125	26	27	34,0
2 x 2,5	9,6	140	36	35	20,4
2 x 4	10,5	190	49	46	12,7
2 x 6	12,2	255	63	58	8,45
3 G 1,5	10,2	150	26	27	34,0
3 G 2,5	10,6	185	36	35	20,4
3 G 4	11,5	240	49	46	12,7
3 G 6	13,2	325	63	58	8,45
4 G 1,5	10,9	175	23	23	29,5
4 G 2,5	11,4	215	32	30	17,7
4 G 4	12,4	290	42	39	11,0
4 G 6	14,4	395	54	49	7,32
5 G 1,5	12,5	230	23	23	29,5
5 G 2,5	12,7	270	32	30	17,7
5 G 4	13,7	355	42	39	11,0
5 G 6	16,1	490	54	49	7,32

[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.

For cables having 2 conductors and 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.