TOXFREE® MARINE XTCuZ1-K (AS)

100% Green Energy Cable Production

The marine power cable.

ACCORDING TO: IEC 60092-353

APPLICATION

The Toxfree® Marine XTCuZ1-K (AS) cable with halogen free is a 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. For this reason, its use is recommended in marine applications.

CONSTRUCTION

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

Insulation
Cross-linked polyethylene insulation, type HF XLPE-90 °C according to IEC 60092-360.
The standard identification of insulated conductors is the following:

1 x	Natural
2 x	Blue + Brown
3 x	Brown + Black + Grey
4 x	Brown + Black + Grey + Blue
5 or more conductors	Black numbered

Other colours available on request.

Bedding
Thermoplastic polyolefin, natural colour, with low smoke and halogen free under fire conditions (single-cores and multi-cores from 25 mm^2).

Screen
Aluminium polyester tape screen with overlapping tinned copper braid armour, ensuring 100% screening coverage.

Outer sheath
Low smoke halogen free (LSHF) thermoplastic polyolefin outer sheath type SHF1 according to IEC 60092-360. Black 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).
Lowest installation temperature: -15°C
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 60332-3-22 / IEC 60332-3-22.
LSHF (Low Smoke Halogen Free) according to EN 60754-1 / IEC 60754-1.
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: 6x cable diameter.
Impact resistance: AG3 High severity.

Environmental performance
Chemical & Oil resistance: acceptable.
UV Resistant according to EN 50618.
Water resistance: AD6 waves.

Installation conditions
Open Air.
In conduit on a bulkhead.
On a bulkhead.

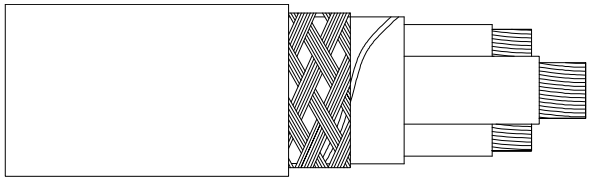
STANDARDS / COMPLIANCE

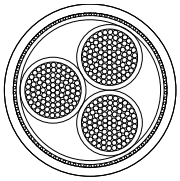
According to
IEC 60092-353

Standards and approvals
ABS / DNV-GL / BUREAU VERITAS / LLOYD'S REGISTER / CE / RoHS

TOXFREE® MARINE
XTCuZ1-K (AS)

DIMENSIONS & ADMISSIBLE INTENSITIES





Cross-section (mm^2)	Diameter (mm)	Weight (kg/km)	Open air (A) [1]	Resistance at 20°C (Ω/km)	Voltage drop (V/A · km) [2]
1 x 2,5	8,2	110	25	7,98	17,7
1 x 4	8,9	135	35	4,95	11,0
1 x 6	9,5	160	46	3,30	7,32
1 x 10	10,5	215	64	1,91	4,23
1 x 16	11,5	275	88	1,21	2,68
1 x 25	13,4	385	117	0,78	1,73
1 x 35	14,3	490	147	0,554	1,23
1 x 50	16,7	680	180	0,386	0,860
1 x 70	18,7	900	233	0,272	0,603
1 x 95	20,2	1.125	285	0,206	0,457
1 x 120	22,4	1.400	333	0,161	0,357
1 x 150	24,3	1.700	386	0,129	0,286
1 x 185	26,4	2.020	444	0,106	0,235
1 x 240	29,5	2.585	528	0,0801	0,178
1 x 300	32,6	3.245	612	0,0641	0,142
1 x 400	37,7	4.240	716	0,0486	0,108
1 x 630	47,3	7.045	947	0,0287	0,064
2 x 1,5	8,6	115	23	13,3	34,0
2 x 2,5	9,5	135	31	7,98	20,4
2 x 4	10,7	180	43	4,95	12,7
2 x 6	11,3	220	55	3,3	8,45
2 x 10	15,3	475	75	1,91	4,89
2 x 16	17,3	630	100	1,21	3,1
3 x 1,5	9,1	135	23	13,3	34,0
3 x 2,5	10,0	170	31	7,98	20,4
3 x 4	11,4	225	43	4,95	12,7
3 x 6	12,4	285	55	3,3	8,45
3 x 10	15,5	475	75	1,91	4,89
3 x 16	17,7	655	87	1,21	2,68
3 x 25	22,1	1.120	110	0,78	1,73
3 x 35	24,6	1.470	137	0,554	1,23
3 x 50	28,7	2.005	167	0,386	0,860
3 x 70	32,1	2.685	214	0,272	0,603
3 x 95	36,2	3.445	259	0,206	0,457

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Cross-section (mm^2)	Diameter (mm)	Weight (kg/km)	Open air (A) [1]	Resistance at 20°C (Ω/km)	Voltage drop (V/A · km) [2]
3 x 120	41,1	4.450	301	0,161	0,357
3 x 150	45,7	5.470	347	0,129	0,286
3 x 185	50,6	6.620	397	0.106	0,235
3 x 240	57,2	8.565	468	0,0801	0,178
4 x 1,5	9,9	155	20	13,3	29,5
4 x 2,5	10,9	205	28	7,98	17,7
4 x 4	12,4	275	37	4,95	11,0
4 x 6	13,8	405	47	3,3	7,32
4 x 10	17,1	585	65	1,91	4,23
4 x 16	19,9	840	87	1,21	2,68
4 x 25	24,7	1.400	110	0,78	1,73
4 x 35	26,5	1.825	137	0,554	1,23
4 x 50	32,3	2.530	167	0,386	0,860
4 x 70	36,1	3.400	214	0,272	0,603
4 x 95	40,8	4.475	259	0,206	0,457
4 x 120	46,2	5.635	301	0,161	0,357
4 x 150	50,7	6.955	347	0,129	0,286
4 x 185	56,2	8.415	397	0,106	0,235
4 x 240	63,7	10.920	468	0,0801	0,178
5 x 1,5	10,9	190	20	13,3	29,5
5 x 2,5	12,1	245	28	7,98	17,7
5 x 4	14,3	385	37	4,95	11,0
5 x 6	15,7	480	47	3,3	7,32
5 x 10	18,6	710	65	1,91	4,23
5 x 16	21,8	1.020	87	1,21	2,68
5 x 25	27,0	1.700	110	0,78	1,73
5 x 35	29,6	2.235	137	0,554	1,23
5 x 50	35,2	3.065	167	0,386	0,860
7 x 1,5	11,5	230	11	13,3	29,5
7 x 2,5	13,8	360	15	7,98	17,7
12 x 1,5	15,2	405	9	13,3	29,5
12 x 2,5	16,6	530	12,5	7,98	17,7

[1] Reference method F for single-core and method E for multicore cables according to IEC 60092-352 in open air at 45°C ambient temperature.
[2] 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 cables having more of 5 conductors is supposed that all are loaded. For the rest of the cables it is supposed a three-phase circuit.