



APPLICATION

Toxfree[®] ZH MX is a flexible cable for fixed and protected installations. It is highly recommended in marine applications and for use in public places.

- Marine use.
- Public places.
- Electrical panel wiring.

CONSTRUCTION

Conductor

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

Insulation

Halogen free thermosetting flexible rubber insulation type HF 90 according to IEC 60092-360.

The standard identification of insulated conductors is the following:

Blue	RAL 5015
Brown	RAL 8003
Black	RAL 9005
Red	RAL 3000
Green/Yellow	RAL 6018/1021
Grey	RAL 7000
White	RAL 9010

Other colours available on request.

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).



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 Zero Halogen) 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: 4x cable diameter.



Environmental performance

Chemical & Oil resistance: Acceptable.



Installation conditions

Open Air.

In conduit on a bulkhead.

On a bulkhead.

STANDARDS / COMPLIANCE



According to
IEC 60092-353



Standards and approvals
DNV/ RoHS / CE



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 1	2,4	13	-	19,5	39,0
1 x 1,5	2,9	20	18	13,3	29,5
1 x 2,5	3,6	30	25	7,98	17,7
1x4	4,1	45	35	4,95	11,0
1x6	4,7	60	46	3,30	7,32

¹Reference method F according to IEC 60092-352 in open air at 45°C ambient temperature.

² At maximum service temperature and cosφ=1.

In all cases it is supposed a three-phase circuit.

SHORT CIRCUIT CURRENT CARRYING CAPACITIES

Time (s)	0,1	0,2	0,3	0,5	1	1,5	2	2,5	3
A/mm ²	452	320	261	202	143	117	101	90	83

CORRECTION FACTORS FOR AIR TEMPERATURE

Air T. (°C)	35	40	45	50	55	60	65	70	75	80
Factor	1,10	1,05	1	0,94	0,88	0,82	0,74	0,67	0,58	0,47

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 60092-352.