

Flexible and halogen free 90°C cable for electrical panel wiring.

ACCORDING TO: IEC 60092-353



## 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, class 5 (flexible) according to EN 60228 and IEC 60228.

### Insulation

Halogen free thermosetting flexible rubber, 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 conductor 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.  
Low Smoke Zero Halogen according to EN 60754-1 / IEC 60754-1.  
Low corrosive gases emission according to EN 60754-2 / IEC 60754-2.  
Low smoke emission according to EN 61034 / IEC 61034:  
Light transmittance > 60%.


-  **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 <sup>2</sup> )	Diameter (mm)	Weight (Kg/km)	Open Air (A) <sup>1</sup>	Resistance at 20°C (Ω/km)	Voltage drop (V/A · km) <sup>2</sup>
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

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

<sup>2</sup>At maximum service temperature and cosφ=1.

In all cases are 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 <sup>2</sup>	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.