# TOXFREE® ZH MX 0,6/1kV

## 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

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## DIMENSIONS & ADMISSIBLE INTENSITIES

| Cross-section (mm²) | 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 |

[1] Reference method F according to IEC 60092-352 in open air at 45°C ambient temperature.
[2] At maximum conductor 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/mm² | 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.