



# Marine Cables

**Power, control and  
instrumentation**



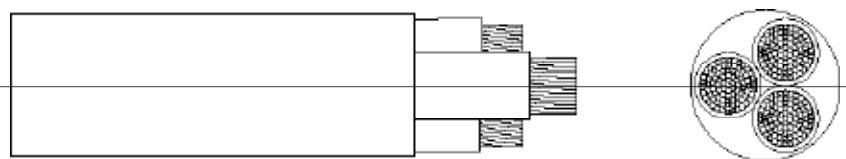
**Top Cable**

# TOXFREE<sup>®</sup> MARINE XZ1-K (AS)

The marine power cable.

STANDARD: IEC 60092-353

## DESIGN



### Conductor

Electrolytic copper, class 5 (flexible), based on EN 60228 and IEC 60228.

### Insulation

Cross-linked polyethylene insulation, type HF XLPE - 90°C.

The standard identification is the following:

- |     |         |  |
|-----|---------|--|
| 1 x | ○       | Natural  |
| 2 x | ● ●     | Blue + Brown                                   |
| 3 x | ● ● ●   | Brown + Black + Grey                           |
| 4 x | ● ● ● ● | Brown + Black + Grey + Blue                    |
| 5 G | ●       | 5 or more conductors: white with black numbers |

Other colours on request.

### Outer sheath

Low smoke zero halogen (LSZH) polyolefin outer sheath SHF1 type. Black colour, non-toxic, fire retardant.

## APPLICATIONS

The Toxfree<sup>®</sup> Marine XZ1-K (AS) cable with zero halogen 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.

- Public places.
- Marine use.

## FEATURES

### ⚡ Electrical performance

Low voltage: 0,6/1 kV.

### 📄 Based on

IEC 60092-353.

### ⊖ Standards and approvals

ABS / DNV-GL / BUREAU VERITAS / LLOYD'S REGISTER / CE / RoHS.

### 🌡️ Thermal performance

Maximum service temperature: 90°C.

Maximum short-circuit temperature: 250°C (max 5 s).

Minimum service temperature: 40°C (fixed installations).

### 🔥 Fire performance

Flame non-propagation based on EN 60332-1 and IEC 60332-1.

Fire non-propagation based on EN 60332-3-22 and IEC 60332-3-22.

LSZH (Low Smoke Zero Halogen) based on EN 60754-1 and IEC 60754-1.

Low smoke emission based on EN 61034 and IEC 61034: light transmittance > 60%.

Low corrosive gases emission based on EN 60754-2 and IEC 60754-2.

### 📏 Mechanical performance

Minimum bending radius: x5 cable diameter.

Impact resistance: AG2 medium severity.

### 🧪 Chemical performance

Chemical & Oil resistance: Good.

### 💧 Water performance

Water resistance: AD6 waves.

### 🌀 Other

Meter by meter marking.

Ripcord

### ☀️ Installation conditions


Open Air.

Buried.

In conduit.

On tray.


## MARINE CABLES




TOXFREE® MARINE  
XZ1-K (AS)




TOXFREE® MARINE  
PLUS  
XZ1-K (AS+)



TOXFREE® MARINE  
XTCuZ1-K (AS)



TOXFREE® MARINE  
PLUS  
XTCuZ1-K (AS+)



TOXFREE® MARINE  
XOxTCuZ1-K (AS)(x:1...3)



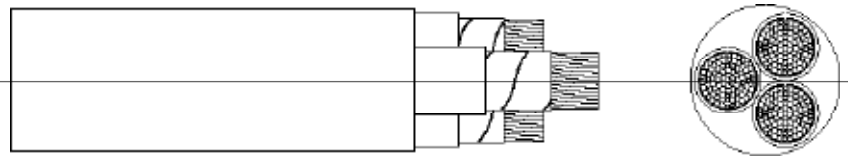
TOXFREE® MARINE  
PLUS  
XOxTCuZ1-K (AS+)(x:1...3)

# TOXFREE<sup>®</sup> MARINE XZ1-K (AS+)

The Marine fire resistant power cable.

STANDARD: IEC 60092-353

## DESIGN



### Conductor

Electrolytic copper, class 5 (flexible), based on EN 60228.

### Insulation

Mica Tape + Low smoke zero halogen (LSZH) Cross linked polyethylene (XLPE)  
90°C. The standard identification is the following:

- 1 x ○ Natural
- 2 x ● ● Blue + Brown
- 3 x ● ● ● Brown + Black + Grey
- 4 x ● ● ● ● Brown + Black + Grey + Blue
- 5 G ● 5 or more conductors: white with black numbers

Other colours on request.

### Outer sheath

Low smoke zero halogen (LSZH) polyolefin outer sheath SHF1 type. Orange colour, non-toxic, fire retardant and fire resistant.

## APPLICATIONS

The Toxfree<sup>®</sup> Marine Plus XZ1-K (AS+) is specially designed to transmit electric power in the presence of fire, assuring electric supply to emergency circuits, like signalling lights, smoke extractors, acoustic alarms, water pumps, etc. 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 public places and marine applications.

- Public places.
- Marine use.

More information at: [www.topcable.com](http://www.topcable.com)

TOP CABLE TOXFREE MARINE PLUS XZ1-K (AS+)

## FEATURES

### Electrical performance

Low voltage: 0,6/1 kV.

### Based on

IEC 60092-353.

### Standards and approvals

ABS / DNV-GL / BUREAU VERITAS / LLOYD'S REGISTER / CE / RoHS.

### Thermal performance

Maximum service temperature: 90°C.

Maximum short-circuit temperature: 250°C (max 5 s).

Minimum service temperature: 40°C (fixed installations).

### Fire performance

Flame non-propagation based on EN 60332-1 and IEC 60332-1.

Fire non-propagation based on EN 60332-3-22 and IEC 60332-3-22.

Fire resistant based on EN 60331-21 and IEC 60331-21.

LSZH (Low Smoke Zero Halogen) based on EN 60754-1 and IEC 60754-1.

Low smoke emission based on EN 61034 and IEC 61034: light transmittance > 60%.

Low corrosive gases emission based on EN 60754-2 and IEC 60754-2.

### Mechanical performance

Minimum bending radius: x5 cable diameter.

Impact resistance: AG3 high severity.

### Chemical performance

Chemical & Oil resistance: acceptable.

### Water performance

Water resistance: AD6 waves.

### Other

Meter by meter marking.

### Installation conditions


Open Air.

Buried.

In conduit.

On Tray.

## MARINE CABLES




TOXFREE<sup>®</sup> MARINE  
XZ1-K (AS)




TOXFREE<sup>®</sup> MARINE  
PLUS  
XZ1-K (AS+)



TOXFREE<sup>®</sup> MARINE  
XTCuZ1-K (AS)



TOXFREE<sup>®</sup> MARINE  
PLUS  
XTCuZ1-K (AS+)



TOXFREE<sup>®</sup> MARINE  
XOxTCuZ1-K (AS)(x:1...3)



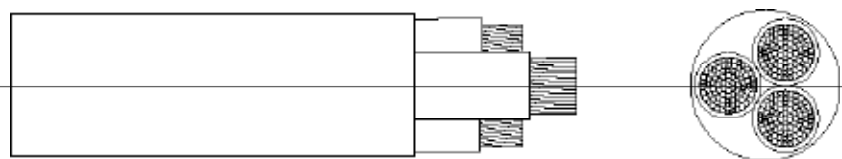
TOXFREE<sup>®</sup> MARINE  
PLUS  
XOxTCuZ1-K (AS+)(x:1...3)

# TOXFREE<sup>®</sup> MARINE XTCuZ1-K (AS)

The Marine armoured power cable.

STANDARD: IEC 60092-353

## DESIGN



### Conductor

Electrolytic copper, class 5 (flexible), based on EN 60228.

### Insulation

Low smoke zero halogen (LSZH) Cross linked polyethylene (XLPE) 90°C.

The standard identification is the following:

- |     |         |  |
|-----|---------|--|
| 1 x | ○       | Natural  |
| 2 x | ● ●     | Blue + Brown                                   |
| 3 x | ● ● ●   | Brown + Black + Grey                           |
| 4 x | ● ● ● ● | Brown + Black + Grey + Blue                    |
| 5 G | ●       | 5 or more conductors: black with white numbers |

### Screen

Aluminium polyester tapescreen with overlapping tinned copper braid armour, ensuring 100% screening coverage.

### Outer sheath

Low smoke zero halogen (LSZH) polyolefin outer sheath SHF1 type. Black colour, non-toxic and fire retardant.

## APPLICATIONS

The Toxfree<sup>®</sup> Marine XTCuZ1-K (AS) cable with zero halogen 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.

- Public places.
- Marine use.

More information at: [www.topcable.com](http://www.topcable.com)



## FEATURES

### ⚡ Electrical performance

Low voltage: 0,6/1 kV.

### 📄 Based on

IEC 60092-353.

### ⊖ Standards and approvals

ABS / DNV-GL / BUREAU VERITAS / LLOYD'S REGISTER / CE / RoHS.

### 🌡 Thermal performance

Maximum service temperature: 90°C.

Maximum short-circuit temperature: 250°C (max 5 s).

Minimum service temperature: 40°C (fixed installations).

### 🔥 Fire performance

Flame non-propagation based on EN 60332-1 and IEC 60332-1.

Fire non-propagation based on EN 60332-3-22 and IEC 60332-3-22.

LSZH (Low Smoke Zero Halogen) based on EN 60754-1 and IEC 60754-1.

Low smoke emission based on EN 61034 and IEC 61034: light transmittance > 60%.

Low corrosive gases emission based on EN 60754-2 and IEC 60754-2.

### 🌀 Mechanical performance

Minimum bending radius: x6 cable diameter.

Impact resistance: AG3 High severity.

### 🧴 Chemical performance

Chemical & Oil resistance: acceptable.

### 💧 Water performance

Water resistance: AD6 waves.

### ⊕ Other

Meter by meter marking.

Ripcord.

Electric fields resistant.

### ☀ Installation conditions


Open Air.

Buried.

In conduit.

On Tray.


## MARINE CABLES




TOXFREE<sup>®</sup> MARINE  
XZ1-K (AS)




TOXFREE<sup>®</sup> MARINE  
PLUS  
XZ1-K (AS+)



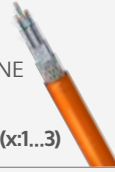
TOXFREE<sup>®</sup> MARINE  
XTCuZ1-K (AS)



TOXFREE<sup>®</sup> MARINE  
PLUS  
XTCuZ1-K (AS+)



TOXFREE<sup>®</sup> MARINE  
XOxTCuZ1-K (AS)(x:1...3)



TOXFREE<sup>®</sup> MARINE  
PLUS  
XOxTCuZ1-K (AS+)(x:1...3)

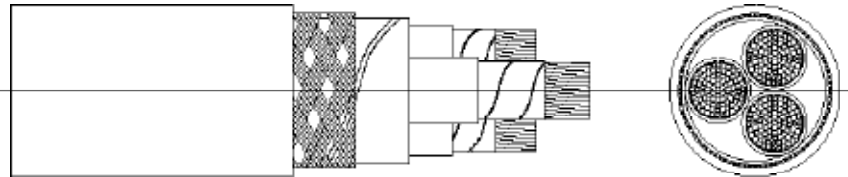


# TOXFREE<sup>®</sup> MARINE XTCuZ1-K (AS+)

Marine armoured fire resistant power cable with bedding.

BASED ON: IEC 60092-353

## DESIGN



### Conductor

Electrolytic copper, class 5 (flexible), based on EN 60228.

### Insulation

Mica tape + Low smoke zero halogen (LSZH) Cross linked polyethylene (XLPE) 90°C.

The standard identification is the following:

- |     |         |  |
|-----|---------|--|
| 1 x | ○       | Black  |
| 2 x | ● ●     | Blue + Brown                                   |
| 3 x | ● ● ●   | Brown + Black + Grey                           |
| 4 x | ● ● ● ● | Brown + Black + Grey + Blue                    |
| 5 G | ●       | 5 or more conductors: white with black numbers |

### Screen

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

### Outer sheath

Low smoke zero halogen (LSZH) polyolefin outer sheath SHF1 type. Orange colour, non-toxic, fire retardant and fire resistant.

## APPLICATIONS

The Toxfree<sup>®</sup> MarinePlus XTCuZ1-K (AS+) is specially designed to transmit electric power in the presence of fire, assuring electric supply to emergency circuits, like signalling lights, smoke extractors, acoustic alarms, water pumps, etc. 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 public places and marine applications.

- Public places.
- Marine use.

More information at: [www.topcable.com](http://www.topcable.com)



## FEATURES

### ⚡ Electrical performance

Low voltage: 0,6/1 kV.

### 📄 Based on

IEC 60092-353.

### 🔗 Standards and approvals

ABS / DNV-GL / BUREAU VERITAS / LLOYD'S REGISTER / CE / RoHS.

### 🌡️ Thermal performance

Maximum service temperature: 90°C.

Maximum short-circuit temperature: 250°C (max 5 s).

Minimum service temperature: 40°C (fixed installations).

### 🔥 Fire performance

Flame non-propagation based on EN 60332-1 and IEC 60332-1.

Fire non-propagation based on EN 60332-3-22 and IEC 60332-3-22.

Fire resistant based on EN 60331-21 and IEC 60331-21.

LSZH (Low Smoke Zero Halogen) based on EN 60754-1 and IEC 60754-1.

Low smoke emission based on EN 61034 and IEC 61034: light transmittance > 60%.

Low corrosive gases emission based on EN 60754-2 and IEC 60754-2.

### 📏 Mechanical performance

Minimum bending radius: x6 cable diameter.

Impact resistance: AG3 High severity.

### 🧪 Chemical performance

Chemical & Oil resistance: Acceptable.

### 💧 Water performance

Water resistance: AD6 waves..

### ⚙️ Other

Meter by meter marking.

Ripcord.

Electric fields resistant.

### ☀️ Installation conditions


Open Air.

In conduit.

Wall attached.

On tray


## MARINE CABLES




TOXFREE® MARINE  
XZ1-K (AS)




TOXFREE® MARINE  
PLUS  
XZ1-K (AS+)



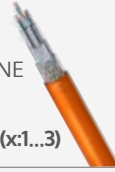
TOXFREE® MARINE  
XTCuZ1-K (AS)



TOXFREE® MARINE  
PLUS  
XTCuZ1-K (AS+)



TOXFREE® MARINE  
XOxTCuZ1-K (AS)(x:1...3)



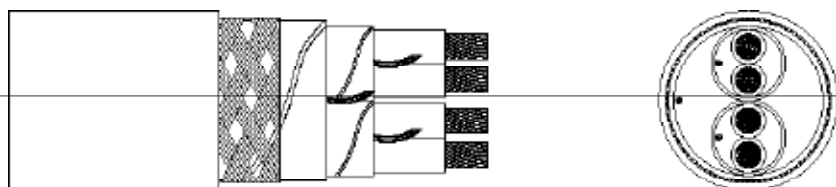
TOXFREE® MARINE  
PLUS  
XOxTCuZ1-K (AS+)(x:1...3)

# TOXFREE<sup>®</sup> MARINE PLUS XOxTCuZ1-K (AS) (x:1...3)

The Marine armoured instrumentation cable.

BASED ON: IEC 60092-376

## DESIGN



### Conductor

Electrolytic copper, class 5 (flexible), based on EN 60228.

### Insulation

Cross-linked polyethylene (XLPE) halogen free 90°C.

The standard identification of insulated conductors is the following:

1 x ○ White

1 x ● Blue

Each pair is numbered.

### Armour Bedding

Cinta de poliéster.

### Screen

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

O1 Individual screen (per pair)

O2 Overall screen (per cable)

O3 Individual and overall screen

### Outer Sheath

LSZH polyolefin outer sheath SHF1 type. Grey colour, fire retardant.

## APPLICATIONS

The Toxfree Marine XOxTCuZ1-K (AS) cable with zero halogens is a safety armoured instrumentation 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.

- Public places.
- Marine use.

More information at: [www.topcable.com](http://www.topcable.com)

## FEATURES



### Electrical performance

Instrumentation 250 V.



### Based on

IEC 60092-376.



### Standards and approvals

ABS / DNV-GL / BUREAU VERITAS / CE / RoHS.



### Thermal performance

Maximum service temperature: 90°C.

Maximum short-circuit temperature: 250°C (max 5 s).

Minimum service temperature: 40°C (fixed installations).



### Fire performance

Flame non-propagation based on EN 60332-1 and IEC 60332-1.

Fire non-propagation based on EN 60332-3-22(cat.A) and IEC 60332-3-22.

LSZH (Low Smoke Zero Halogen) based on UNE-EN 60754 and IEC 60754-2.

Low smoke emission based on EN 61034 and IEC 61034: light transmittance > 60%.

Low corrosive gases emission based on EN 60754-2 and IEC 60754-2.



### Mechanical performance

Minimum bending radius: x5 cable diameter.

Impact resistance: AG2 medium severity.



### Chemical performance

Chemical & Oil resistance: acceptable.



### Water performance

Water resistance: AD6 waves.



### Other

Meter by meter marking.

Ripcord.

Electric fields resistant.



### Installation conditions

Open Air.

Buried.

In conduit.

On Tray.

## MARINE CABLES



TOXFREE® MARINE  
XZ1-K (AS)



TOXFREE® MARINE  
PLUS  
XZ1-K (AS+)



TOXFREE® MARINE  
XTCuZ1-K (AS)



TOXFREE® MARINE  
PLUS  
XTCuZ1-K (AS+)



TOXFREE® MARINE  
XOxTCuZ1-K (AS)(x:1...3)



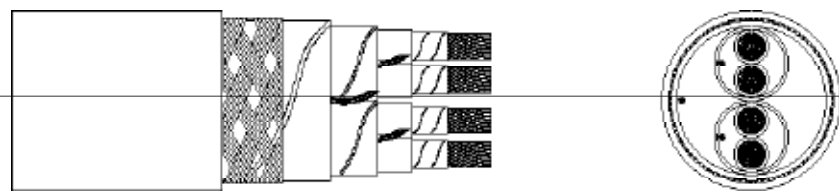
TOXFREE® MARINE  
PLUS  
XOxTCuZ1-K (AS+)(x:1...3)

# TOXFREE<sup>®</sup> MARINE PLUS XOxTCuZ1-K (AS+) (x:1...3)

The Marine armoured and fire resistant instrumentation cable

STANDARD: IEC 60092-376

## DESIGN



### Conductor

Electrolytic copper, class 5 (flexible), based on EN 60228.

### Insulation

Mica tape + Low smoke zero halogen (LSZH) Cross linked polyethylene (XLPE) 90°C.  
The standard identification is the following:

1 x ○ White

1 x ● Blue

Each pair is numbered. Other colours on request.

### Screen

Individual and/or collective aluminium/polyester tape with tinned copper drain wire

O1- Individual screen (per pair).

O2- Overall screen (per cable).

O3- Individual and overall screen.

### Screen (Armour)

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

### Outer sheath

Low smoke zero halogen (LSZH) polyolefin outer sheath SHF1 type. Orange colour, non-toxic, fire retardant and fire resistant.

## APPLICATIONS

The Toxfree<sup>®</sup> Marine XOxTCuZ1-K (AS+) cable is an instrumentation armoured cable. It is fire resistant and specially designed to continue transmitting information/data in case of fire. For this reason, it is recommended for use in public places and marine applications.

- Public places.
- Marine use.

More information at: [www.topcable.com](http://www.topcable.com)



## FEATURES

### ⚡ Electrical performance

Instrumentation 250 V.

### 📄 Based on

IEC 60092-376.

### 🔗 Standards and approvals

ABS / DNV-GL / BUREAU VERITAS / CE / RoHS.

### 🌡️ Thermal performance

Maximum service temperature: 90°C.

Maximum short-circuit temperature: 250°C (max 5 s).

Minimum service temperature: 40°C (fixed installations).

### 🔥 Fire performance

Flame non-propagation based on EN 60332-1 and IEC 60332-1.

Fire non-propagation based on EN 60332-3-22 and IEC 60332-3-22.

Fire resistant based on EN 60331-21 and IEC 60331-21.

LSZH (Low Smoke Zero Halogen) based on EN 60754-1 and IEC 60754-1.

Low smoke emission based on EN 61034 and IEC 61034: light transmittance > 60%.

Low corrosive gases emission based on EN 60754-2 and IEC 60754-2.

### 📏 Mechanical performance

Minimum bending radius: x5 cable diameter.

Impact resistance: AG2 medium severity.

### 🧴 Chemical performance

Chemical & Oil resistance: acceptable.

### 💧 Water performance

Water resistance: AD6 waves.

### ⊕ Other

Meter by meter marking.

Ripcord.

Electric fields resistant.

### ☀️ Installation conditions


Open Air.

Buried.

In conduit.

On Tray.


## MARINE CABLES




TOXFREE<sup>®</sup> MARINE  
XZ1-K (AS)




TOXFREE<sup>®</sup> MARINE  
PLUS  
XZ1-K (AS+)



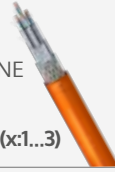
TOXFREE<sup>®</sup> MARINE  
XTCuZ1-K (AS)



TOXFREE<sup>®</sup> MARINE  
PLUS  
XTCuZ1-K (AS+)



TOXFREE<sup>®</sup> MARINE  
XOxTCuZ1-K (AS)(x:1...3)



TOXFREE<sup>®</sup> MARINE  
PLUS  
XOxTCuZ1-K (AS+)(x:1...3)



## **Top Cable | Marine Cables**

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sales@topcable.com  
[www.topcable.com](http://www.topcable.com)

