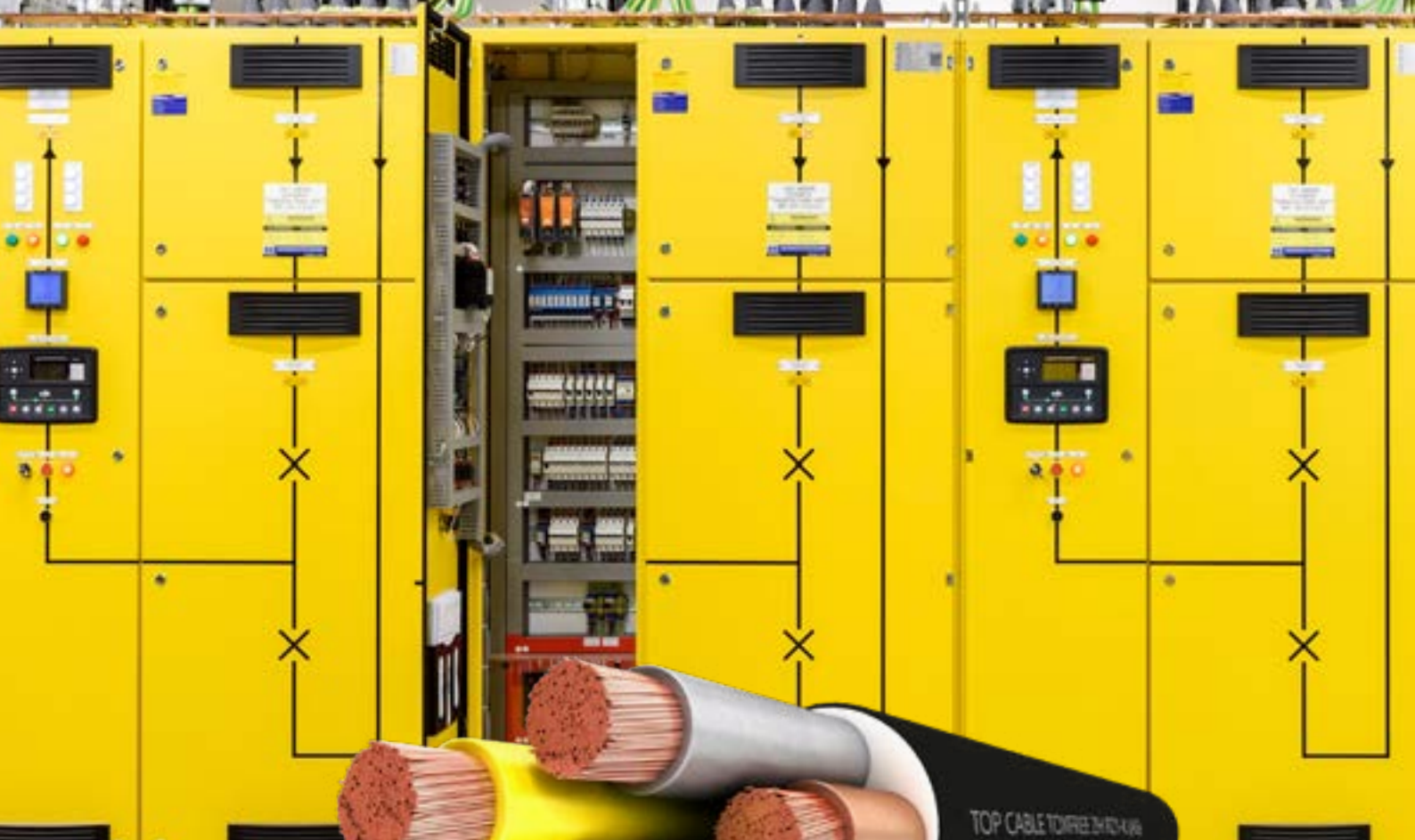


**Top Cable**

Driving your energy



# CABLES FOR DATA CENTRES

Power cable  
solutions  
CPR compliant



## Global **manufacturer** of cables for Data Centres

**With factories running 24/7, Top Cable's robust infrastructure of more than 70,000 sqm production plant area, and years of Data Centre industry knowledge, we are the best partner regarding your cable needs.**

As part of our core business, we have the flexibility to design and build Data Centre enhanced cables for hyper-scale, co-location, and enterprise projects.

### Top Cable, your reliable cable partner



100% European manufacturer from Barcelona



Green Energy usage



State-Of-The-Art laboratories

+ info pag. 26

### We excel at service



Largest cable stock & shortest lead times in the industry



Drum return program & after sales project management



Open doors for technical visits and FAT tests

+ info pag. 28

### Data Centre enhanced cables



Highest CPR rated cables in the market



Flexible cables significantly shorter installation times



Worldwide certificates

+ info pag. 30

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A technical guide for your Data Centre cabling

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## POWER CABLES



# TOXFREE® ZH N2XH Flex

Halogen free (LSHF) power cable for public places.

ACCORDING TO: IEC 60502-1



**B2<sub>ca</sub>**  
**C<sub>ca</sub>**



## APPLICATION

Toxfree® ZH N2XH Flex is a LSHF safety cable for fixed installations. In the event of fire, it does not emit toxic or corrosives gases, preventing any possible harm to people or electronic equipment. For these reasons this cable is highly recommended for use in public places such as hospitals, schools, museums, airports, bus terminals, shopping centers, offices, laboratories, etc.

## CONSTRUCTION

### Conductor

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

### Insulation







Cross-linked polyethylene, type XLPE according to IEC 60502-1. The standard identification of insulated conductors according to HD 308 is the following:

1 x	Natural
2 x	Blue + Brown
3 G	Blue + Brown + Green/Yellow
3 x	Brown + Black + Grey
3 x+1 x	Brown + Black + Grey + Blue (reduced cross-section)
4 G	Brown + Black + Grey + Green/Yellow
4 x	Brown + Black + Grey + Blue
5 G	Brown + Black + Grey + Blue + Green/Yellow




### Outer sheath

Low smoke halogen free polyolefin. Black colour.

## 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).  
Minimum installation and handling temperature: 0°C (on cable surface).
-  **Fire performance**  
Flame non-propagation according to EN 60332-1 / IEC 60332-1.  
Fire non-propagation according to EN 60332-3 / IEC 60332-3 and EN 50399.  
Reaction to fire CPR: B2<sub>ca</sub>-s1a, d1, a1 or C<sub>ca</sub>-s1a, d1, a1, according to EN 50575 (see cross-section).  
Low Smoke Halogen Free 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 > 80%.
-  **Mechanical performance**  
Minimum bending radius: 5x cable diameter.  
Impact resistance: AG2 Medium severity.
-  **Environmental performance**  
Chemical & Oil resistance: acceptable.  
UV Resistant according to EN 50618.  
Water resistance: AD8 Submersion.
-  **Installation conditions**  
Open Air.  
Buried.  
In conduit.

## STANDARDS / COMPLIANCE

-  **According to**  
IEC 60502-1
-  **Standards and approvals**  
KEMA-KEUR / / RoHS / CE
-  **CPR (Construction Products Regulation)**  
B2<sub>ca</sub>-s1a, d1, a1 (according to cross-section) or  
C<sub>ca</sub>-s1a,d1,a1 (according to cross-section)



# TOXFREE<sup>®</sup> ZH RZ1-K (AS) / YMz1Kf

Flexible LSHF power cable, for public places.

ACCORDING TO: IEC 60502-1 / UNE 21123-4



**B<sub>2ca</sub>**  
**C<sub>ca</sub>**



## APPLICATION

Toxfree<sup>®</sup> ZH RZ1-K (AS) / YMz1Kf is a LSHF safety cable. In the event of fire, it does not emit toxic gases, nor does it give off corrosive gases, avoiding any possible damage to people or electronic equipment. For these reasons it is highly recommended for use in public places such as: hospitals, schools, museums, airports, bus terminals, shopping centers, offices, laboratories, etc.

- Industrial use.
- Public places.

## CONSTRUCTION

### Conductor

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

### Insulation

Cross-linked polyethylene type XLPE according to IEC 60502-1 and type DIX-3 according to HD 603.

The standard identification of insulated conductors according to HD 308 is the following:

1 x	Natural
2 x	Blue + Brown
3 G	Blue + Brown + Green/Yellow
3 x	Brown + Black + Grey
3 x + 1 x	Brown + Black + Grey + Blue (reduced cross-section)
4 G	Brown + Black + Grey + Green/Yellow
4 x	Brown + Black + Grey + Blue
5 G	Brown + Black + Grey + Blue + Green/Yellow
6 or more	Black numbered + Green/Yellow

### Outer sheath

Low smoke halogen free polyolefin, type ST8 according to IEC 60502-1 and type DMZ-E according to UNE 21123-4.  
Green colour.

## 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)  
Minimum installation and handling temperature: 0°C.
- Fire performance**  
Flame non-propagation according to IEC 60332-1 / EN 60332-1.  
Fire non-propagation according to EN 60332-3 / IEC 60332-3 and EN 50399.  
Reaction to fire CPR: B<sub>2ca</sub>-s1a,d1, a1 or C<sub>ca</sub>-s1a,d1,a1 according to EN 50575 (see cross-section).  
Low Smoke Halogen Free 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 > 80%.
- Mechanical performance**  
Minimum bending radius during installation: 5x cable diameter.  
Impact resistance: AG2 Medium severity.
- Environmental performance**  
Chemical & Oil resistance: Acceptable.  
UV Resistant according to EN 50618.  
Water resistance: AD8 Submersion.
- Installation conditions**  
Open Air.  
Buried.  
In conduit.

Also available in black colour.

## STANDARDS / COMPLIANCE

- According to IEC 60502-1 / UNE 21123-4
- Standards and approvals AENOR / SEC / KEMA-KEUR / RoHS / CE
- CPR (Construction Products Regulation) B<sub>2ca</sub>-s1a,d1,a1 (according to cross-section) or C<sub>ca</sub>-s1a,d1,a1 (according to cross-section)



# POWERFLEX<sup>®</sup> RV-K

Industrial flexible cable for power transmission.

ACCORDING TO: IEC 60502-1 / UNE 21123-2



E<sub>ca</sub>

## APPLICATION

Powerflex<sup>®</sup> RV-K cable is suitable for all types of low voltage industrial-type connections, in urban grids, building installations, etc.

Its high flexibility makes the installation process substantially easier and, as a result, is particularly suitable for use in difficult layouts. It can be buried or installed in a tube as well as outdoors without requiring additional protection.

This cable can withstand damp conditions including total submersion in water (AD8).

## CONSTRUCTION

### Conductor

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

### Insulation

Cross-linked polyethylene, type DIX-3 according to HD 603-1 and type XLPE according to IEC 60502-1.

The standard identification of insulated conductors according to HD 308 is the following:

1 x	Natural
2 x	Blue + Brown
3 G	Blue + Brown + Green/Yellow
3 x	Brown + Black + Grey
3 x + 1 x	Brown + Black + Grey + Blue (reduced cross-section)
4 G	Brown + Black + Grey + Green/Yellow
4 x	Brown + Black + Grey + Blue
5 G	Brown + Black + Grey + Blue + Green/Yellow
6 or more	Black numbered + Green/Yellow

### Outer sheath

Flexible PVC, type DMV-18 according to HD 603-1 and type ST2 according to IEC 60502-1.

Black colour.

## 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).

Minimum installation and handling temperature: 0°C (on cable surface).

### Fire performance

Flame non-propagation according to EN 60332-1 / IEC 60332-1.

Reaction to fire CPR: E<sub>ca</sub> according to EN 50575.

Reduced halogen emission. Chlorine < 15%.

### Mechanical performance

Minimum bending radius during installation: 5x cable diameter (diameter cable ≤ 50 mm).

Minimum bending radius during installation: 6x cable diameter (diameter cable > 50 mm).

Impact resistance: AG2 Medium severity.

### Environmental performance

Chemical & Oil resistance: Good.

UV Resistant according to UNE 211605.

Water resistance: AD8 Submersion.

### Installation conditions

Open Air.

Buried.

In conduit.

In tray.

## STANDARDS / COMPLIANCE



According to  
IEC 60502-1 / UNE 21123-2



Standards and approvals  
AENOR / BUREAU VERITAS / RETIE / KEMA-KEUR / RoHS / CE



CPR (Construction Products Regulation)  
E<sub>ca</sub>



## CPC EARTH CABLES



# TOXFREE® ZH

## ES05Z1-K (AS) & H07Z1-K (AS)

Flexible and halogen free power cable for electrical panel wiring.

ACCORDING TO: EN 50525-3-31 / UNE 211002



**B2<sub>ca</sub>**



### APPLICATION

Toxfree® ES05Z1-K (AS)/H05Z1-K & H07Z1-K (AS) Type 2 is a LSHF safety cable. In the event of fire, it does not emit toxic gases, nor does it give off corrosive gases, avoiding any possible damage to people or electronic equipment.

For these reasons it is highly recommended for use in public places such as: hospitals, schools, museums, airports, bus terminals, shopping malls, offices, laboratories, etc.

### CONSTRUCTION

#### Conductor

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

#### Insulation

Polyolefin, halogen free and low smoke under fire conditions, type TIZ1 according to UNE 211002 and type T17 according to EN 50363-7.

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
Dark Blue	RAL 5010
White	RAL 9010

Other colours available on request.

### CHARACTERISTICS

#### Electrical performance

Low voltage: 300/500 V and 450/750 V.  
Rated Voltage: ES05Z1-K/H05Z1-K (up to 1 mm<sup>2</sup>): 300/500 V.  
H07Z1-K (from 1,5 mm<sup>2</sup> onwards): 450/750 V.

#### Thermal performance

Maximum conductor temperature: 70°C.  
Maximum short-circuit temperature: 160°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 / IEC 60332-3 and EN 50399.  
Reaction to fire CPR: B2ca-s1a, d1, a1 (cable H07Z1-K from 1,5 mm<sup>2</sup> to 240 mm<sup>2</sup>) according to EN 50575.  
Low smoke halogen free 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 > 80%.

#### Mechanical performance

Minimum bending radius: 5x cable diameter.

#### Environmental performance

Chemical & Oil resistance: Acceptable.

### STANDARDS / COMPLIANCE



According to  
EN 50525-3-31 / UNE 211002



Standards and approvals  
HAR / AENOR / BUREAU VERITAS / RoHS / SEC / CE



CPR (Construction Products Regulation)  
B2ca-s1a, d1, a1 (cable H07Z1-K from 1,5 mm<sup>2</sup> to 240 mm<sup>2</sup>)



# TOXFREE<sup>®</sup> ZH H05Z-K & H07Z-K

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



D<sub>ca</sub>

## APPLICATION

Toxfree<sup>®</sup> ZH H05Z-K & H07Z-K is a flexible cable for fixed and protected installations.

It is highly recommended for use in public places such as: hospitals, schools, museums, airports, bus terminals, shopping malls, offices, laboratories, etc.

Not suitable for wet places or immersed.

- Domestic 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 EI5 according to EN 50363-5.

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: 300/500 V.  
450/750 V.

Rated Voltage:

H05Z-K (up to 1 mm<sup>2</sup>): 300/500 V.

H07Z-K (from 1,5 mm<sup>2</sup> onwards): 450/750 V.

### 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.

Reaction to fire CPR: D<sub>ca</sub>-s1b, d1, a1 according to EN 50575 (see cross-section).

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: 5x cable diameter.

### Environmental performance

Chemical & Oil resistance: Acceptable.

### Installation conditions

In conduit.

## STANDARDS / COMPLIANCE



According to  
EN 50525-3-41



Standards and approvals  
HAR / AENOR / RoHS / CE



CPR (Construction Products Regulation)  
D<sub>ca</sub>-s1b, d1, a1 (according to cross-section)





# TOPFLEX<sup>®</sup> V-K H05V-K & H07V-K

Electric cabinet wiring and domestic use.

ACCORDING TO: EN 50525-2-31 / IEC 60227-3



E<sub>ca</sub>



## APPLICATION

Topflex<sup>®</sup>V-K H05V-K & H07V-K cable has been specially designed for installations that require a flexible cable due to the complex nature of their layout.

This cable is especially suitable for domestic wiring.

It may also be used for equipment wiring, distributors, cabinets and lighting.

It is also recommended for installation under false ceilings. Cables with cross section up to 1 mm<sup>2</sup> are especially suited for signalling and monitoring installations.

## CONSTRUCTION

### Conductor

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

### Insulation

Extra sliding flexible polyvinyl chloride type TII according to EN 50363-3.

The standard identification of insulated conductors is the following:

Blue	RAL 5012
Brown	RAL 8003
Black	RAL 9005
Red	RAL 3000
Green/Yellow	RAL 6018/1021
Grey	RAL 7000
Dark Blue	RAL 5010
White	RAL 9010
Orange	RAL 2003
Violet	RAL 4005
Pink	RAL 3015

Other colours available on request.

## CHARACTERISTICS

- Electrical performance**  
Low voltage 300/500 V · 450/750 V.  
Rated Voltage: H05V-K (up to 1 mm<sup>2</sup>): 300/500 V.  
H07V-K (from 1,5 mm<sup>2</sup> onwards): 450/750 V.
- Thermal performance**  
Maximum conductor temperature: 70°C.  
Maximum short-circuit temperature: 160°C (max. 5 s).  
Minimum installation and handling temperature: 5°C.  
Minimum service temperature: -40°C (fixed and protected installations).
- Fire performance**  
Flame non-propagation according to EN 60332-1 / IEC 60332-1.  
Reaction to fire CPR: E<sub>ca</sub> according to EN 50575.  
Reduced halogen emission. Chlorine < 15%.
- Mechanical performance**  
Minimum bending radius: 5x cable diameter.
- Environmental performance**  
Chemical & Oil resistance: Acceptable.
- Installation conditions**  
In conduit.
- Other**  
Meter by meter marking. (from 10 mm<sup>2</sup> onwards).

## STANDARDS / COMPLIANCE

According to  
EN 50525-2-31 / IEC 60227-3

Standards and approvals  
HAR / AENOR / SEC / RoHS / CE

CPR (Construction Products Regulation)  
E<sub>ca</sub>



## SPECIAL CABLES





**B2<sub>ca</sub>**  
**C<sub>ca</sub>**



## APPLICATION

Toxfree<sup>®</sup> Plus 331 ZH RZ1-K (AS+) is a fire resistant cable, specially designed to ensure the power supply to emergency circuits in the event of fire. During a fire you need critical circuits to work for life safety (signalling lights, fume extractors, acoustic alarms, water pumps, etc) and a secure plant shutdown. For this reason, its use is highly recommended in public places such as: hospitals, tunnels, offices, production plants, laboratories, hotels, etc.

## CONSTRUCTION

### Conductor

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

### Insulation

Mica tape + Cross-linked polyethylene type DIX-3 according to HD 603.

The standard identification of insulated conductors according to HD 308 is the following:

1 x	Natural
2 x	Blue + Brown
3 G	Blue + Brown + Green/Yellow
3 x	Brown + Black + Grey
3 x + 1 x	Brown + Black + Grey + Blue (reduced cross-section)
4 G	Brown + Black + Grey + Green/Yellow
4 x	Brown + Black + Grey + Blue
5 G	Brown + Black + Grey + Blue + Green/Yellow

### Outer sheath

Fireproof polyolefin with low smoke and halogen free fumes under fire conditions.

Orange colour.

## 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).

Minimum installation and handling temperature: -0°C

### 🔥 Fire performance

Flame non-propagation according to EN 60332-1 / IEC 60332-1.

Fire non-propagation according to EN 60332-3 / IEC 60332-3 and EN 50399.

Fire resistant (PH120) minimum 120 minutes at 840 °C:

According to IEC 60331-2 / EN 50200 for cable diameter ≤ 20 mm.

According to IEC 60331-1 / EN 50362 for cable diameter > 20 mm.

Fire resistant category C (180 minutes at 950°C), W & Z according to BS 6387.

Fire resistant category Rf 1h30 or Rf 1h (according to cross-section) according to NBN S21-300-1.

Reaction to fire CPR: B2<sub>ca</sub>-s1a,d1,a1 or C<sub>ca</sub>-s1b,d1,a1 according to EN 50575 (see cross-section).

Low Smoke Halogen Free 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: 5x cable diameter.

Impact resistance: AG2 Medium severity.

### 🌍 Environmental performance

Chemical & Oil resistance: acceptable.

UV Resistant according to EN 50618.

Water resistance: AD5 Jets.

### 🔧 Installation conditions

Open Air.

Buried.

In conduit.

## STANDARDS / COMPLIANCE



### According to

IEC 60502-1 / UNE 211025



### Standards and approvals

AENOR / RoHS / CE



### CPR (Construction Products Regulation)

B2<sub>ca</sub>-s1a,d1,a1 (according to cross-section) or

C<sub>ca</sub>-s1b,d1,a1 (according to cross-section)





# TOXFREE<sup>®</sup> ZH SZ-K (AS)

Flexible LSHF power cable, for public places.

BASED ON / ACCORDING TO: IEC 60502-1 / UL 758



B2<sub>ca</sub>



## APPLICATION

Toxfree<sup>®</sup> ZH SZ-K (AS) is a LSHF easy handling flexible cables suitable to be installed in high temperature areas inside equipment and machines.

Thanks to its silicone insulation, this cable can withstand higher conductor temperatures.

The LSHF rubber outer sheath protects the insulation against mechanical aggressions.

Flame and fire retardant cable.

## CONSTRUCTION

### Conductor

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

### Separator

Polyester tape applied over the conductor.

### Insulation

Special silicone, type EI2 according to EN 50363-1 and type SR (Silicone Rubber) 150°C/1000 V and 3000 V according to UL 758 (Style 30105 and 30106).

Natural colour.

### Outer sheath

Halogen free cross-linked elastomer, type EM8 according to EN 50363-6 and type EVA 90°C/1000 V and 3000 V according to UL 758 (Style 12022 and 12023), with improved thermal characteristics.

Black colour.

## CHARACTERISTICS

### Electrical performance

Low voltage: 0,6/1 kV and 1,8/3 kV according to IEC 60502-1  
1000 V and 3000 V according to UL 758 (AWM)

### Thermal performance

Maximum conductor temperature: 150°C.  
Maximum short-circuit temperature: 350°C (max. 5 s).  
Maximum outer sheath temperature: 120°C during 50.000 h.  
Minimum service temperature: -40°C (fixed and protected installations).  
Minimum / maximum stored temperature: -40°C / 70°C.

### Fire performance

Flame non-propagation according to EN 60332-1 / IEC 60332-1.  
Fire non-propagation according to EN 60332-3-24 / IEC 60332-3-24.  
Reaction to fire CPR: B2<sub>ca</sub>-s1a,d2,a1 according to EN 50575.  
Low smoke halogen free according to EN 60754-1 / IEC 60754-1.  
Low corrosive gases emission according to EN 60754-2 / IEC 60754-2.  
Smoke density according to EN 61034 / IEC 61034:  
Light transmittance > 60%.

### Mechanical performance

Minimum bending radius: 5x cable diameter.

### Environmental performance

UV Resistant according to HD 605/A1 Ap.2.2.20 (720 h / 65 °C / 60 W/m<sup>2</sup>).  
Oil, ozone, water and moisture resistant.

## STANDARDS / COMPLIANCE



Based on / According to  
IEC 60502-1 / UL 758



Standards and approvals  
RoHS / CE / UL LISTED



CPR (Construction Products Regulation)  
B2<sub>ca</sub>-s1a,d2,a1 (cable 1x300 mm<sup>2</sup> 0,6/1 kV)





# TOPDRIVE® VFD (EMC) ROZ1-K (AS) 0,6/1 kV

Flexible LSHF screened cable for Variable Frequency Drive cables (VFD cables).

ACCORDING TO: IEC 60502-1 / IEC 60092-353



C<sub>ca</sub>



## APPLICATION

TOPDRIVE® VFD (EMC) ROZ1-K (AS) cable has been specially designed for Variable Frequency Drive Motors and installations where it is necessary to limit the effects of electromagnetic interference (EMI). This is a flexible cable for fixed installations, for variable speed motors or pumps.

## CONSTRUCTION

### Conductor

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

### Protective Conductor

The ground conductor is divided into three conductors; the equivalent cross-section is approximately 50% of the section of the phase conductor.

For 4G cables, ground conductor has the same cross-section as the phase conductors.

### Insulation

Cross-linked polyethylene type XLPE according to IEC 60502-1, type HF XLPE 90°C according to IEC 60092-360.

The standard identification of insulated conductors is the following:  
3 x +3 G Grey + Brown + Black + Green/Yellow (3 G) (from 6 mm<sup>2</sup> onwards)

4 G Grey + Brown + Black + Green/Yellow (up to 4 mm<sup>2</sup>)

### Assembly of cores

For 3x+3G cables, the three phase conductors are cabled helically with the three protective conductors distributed in the interstices.

For 4G cables, the three phase conductors and protection conductor are cabled helically.

### Screen

Aluminium-polyester tape screen helically placed over the insulated conductors. Over the tape there is a tinned copper braid screen. The tape and the braid act as a double screen to cut out all of the electromagnetic interference, with a minimum total section of 10% of the phase conductor, ensuring a total shielding coverage.

### Outer sheath

Polyolefin type ST8 according to IEC 60502-1 and type SHFI according to IEC 60092-360.

Black colour.

The ripcord allows you to tear the outer sheath without damaging the screen.

## 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).  
Maximum ambient temperature: 60 °C.  
Minimum installation and handling temperature: 0 °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 / IEC 60332-3 and EN 50399.  
Reaction to fire CPR: C<sub>ca</sub>-s1a, d1, a1 according to EN 50575.  
Low Smoke Halogen Free 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 > 80%.
- Mechanical performance**  
Minimum bending radius during installation: 10x cable diameter.  
Impact resistance: AG2 Medium severity.
- Environmental performance**  
Chemical & Oil resistance: Acceptable.  
UV Resistant according to EN 50618.  
Water resistance: AD5 Jets.
- Installation conditions**  
Being very performant cables there are, however, certain precautions that must be taken into account during installation:
  - Always respect the bending radius of the cable. Radius below the minimums indicated can cause damage or breakage in the outer sheath.
  - Precautions design of the laying. It is necessary that the laying of the cable is done in a careful way, taking care not to damage the outer sheath in irregular areas, sharp edges, etc.
  - Fixings/Fastenings. Adapt fastenings so that the cable adopts a natural position in the laying to avoid stress concentration in the outer sheath. Allow a certain degree of freedom of movement in order to absorb possible movements produced by temperature variations. Open Air. Buried. In conduit.

## STANDARDS / COMPLIANCE

- According to IEC 60502-1 / IEC 60092-353
- Standards and approvals BUREAU VERITAS / DNV-GL / ABS / LLOYD'S REGISTER / RoHS / CE
- CPR (Construction Products Regulation) C<sub>ca</sub>-s1a, d1, a1



## RUBBER AND PDU/WHIP CABLES



# TOXFREE<sup>®</sup> XTREM ZH H07ZZ-F (AS)

The extra-flexible LSHF rubber cable for mobile service.

ACCORDING TO: EN 50525-3-21



**B2<sub>ca</sub>**  
**C<sub>ca</sub>**



## APPLICATION

Toxfree<sup>®</sup> Xtrem ZH H07ZZ-F (AS) is a flexible cable for mobile service, suitable for installations where low smoke and halogen free fumes under fire conditions are required. The use nominal voltage up to 1000 V is accepted in fixed protected assemblies. Suitable for installations where the cable must withstand medium mechanical stress, for machines in industrial and agricultural workshops, for motors and transportable machines on construction sites, for windmills and for agricultural applications.

- Industrial use.
- Mobile use.
- Windmills.

## CONSTRUCTION

### Conductor

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

### Insulation

Halogen free thermosetting rubber, type EI8 according to EN 50363-5.








The standard identification according to HD 308, is the following:

1 x	Natural
2 x	Blue + Brown
3 G	Blue + Brown + Green/Yellow
4 G	Brown + Black + Grey + Green/Yellow
5 G	Brown + Black + Grey + Blue + Green/Yellow
6 or more	Black numbered + Green/Yellow



### Outer sheath

Halogen free thermosetting flexible rubber, type EM8 according to EN 50363-6.  
Black colour.

## CHARACTERISTICS

-  **Electrical performance**  
Low voltage: 450/750 V.
-  **Thermal performance**  
Maximum conductor temperature: 90°C.  
Maximum short-circuit temperature: 250°C (max. 5 s).  
Minimum temperature in mobile service: -40°C.
-  **Fire performance**  
Flame non-propagation according to EN 60332-1 / IEC 60332-1.  
Fire non-propagation according to EN 60332-3-24 / IEC 60332-3-24 and EN 50399.  
Reaction to fire CPR: B2<sub>ca</sub>-s1b, d1, a1 or Cca-s1b, d2, a1 according to EN 50575 (see cross-section).  
Halogen free according to EN 60754-1 / IEC 60754-1.  
Low corrosive gases emission according to UNE-EN 60754-2 / IEC 60754-2.  
Low smoke emission according to EN 61034 / IEC 61034:  
Light transmittance > 60%.
-  **Mechanical performance**  
Minimum bending radius: 3x cable diameter < 12 mm.  
4x cable diameter ≥ 12 mm.  
Impact resistance: AG2 Medium severity.
-  **Environmental performance**  
Chemical & Oil resistance: Excellent.  
Grease & mineral oils resistance: Excellent.  
Water resistance: AD7 immersion.
-  **Installation conditions**  
Open Air.  
In conduit.
-  **Other**  
Meter by meter marking.

## STANDARDS / COMPLIANCE

-  **According to**  
EN 50525-3-21
-  **Standards and approvals**  
HAR / AENOR / CE
-  **CPR (Construction Products Regulation)**  
B2<sub>ca</sub>-s1b, d1, a1. (according to cross-section) or  
Cca-s1b, d2, a1. (according to cross-section)





E<sub>ca</sub>



## APPLICATION

Xtrem<sup>®</sup> H07RN-F rubber cables are designed to supply power to low voltage appliances including electric motors and submersible pumps in deep water installations, as well as many other electrical equipment.

Thanks to its extraordinary flexibility and mechanical strength, the Xtrem<sup>®</sup> H07RN-F cable is ideal for power transmission in both fixed installation or mobile service.

The use nominal voltage up to 1000 V is accepted in fixed protected assemblies.

Top Cable Xtrem<sup>®</sup> H07RN-F cables are designed to power all types of electrical equipment including motors and submersible pumps in deep water installations (AD8).

## CONSTRUCTION

### Conductor

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

### Insulation

Thermosetting rubber, type EI7 according to EN 50363-1. The standard identification according to HD 308 and EN 50334 is the following:

1 x	Natural
2 x	Blue + Brown
3 G	Blue + Brown + Green/Yellow
3 x	Brown + Black + Grey
4 G	Brown + Black + Grey + Green/Yellow
4 x	Brown + Black + Grey + Blue
5 G	Brown + Black + Grey + Blue + Green/Yellow
5 x	Brown + Black + Grey + Black + Blue
6 or more	Black numbered + Green/Yellow

### Outer sheath

Thermosetting flexible rubber, type EM2 according to EN 50363-2-1. Black colour.

## CHARACTERISTICS

**Electrical performance**  
Low voltage: 450/750 V.

**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) and -25°C (mobile use).

**Fire performance**  
Flame non-propagation according to EN 60332-1 / IEC 60332-1.  
Reaction to fire CPR: E<sub>ca</sub> according to EN 50575.

**Mechanical performance**  
Minimum bending radius:  
3x cable diameter < 12 mm.  
4x cable diameter ≥ 12 mm.  
Impact resistance: AG2 Medium severity.


**Environmental performance**  
Chemical & Oil resistance: Excellent.  
Grease & mineral oils resistance: Excellent.  
UV Resistant according to EN 50618.  
Water resistance: AD8 Submersion.  
Cable for submersible pumps in drinkable water according to AS/ NZS 4020.  
Deep wells. AWQC.

**Installation conditions**  
Open Air.  
Submersible pumps cable.

**Other**  
Meter by meter marking.

## STANDARDS / COMPLIANCE

 **According to**  
EN 50525-2-21 / IEC 60092-353 / IEC 60245-4

 **Standards and approvals**  
HAR / AENOR / DNV / RoHS / CE

 **CPR (Construction Products Regulation)**  
E<sub>ca</sub>





## MEDIUM VOLTAGE CABLES



# X-VOLT<sup>®</sup> CU (-OL/-2OL) RHZ1

Medium Voltage copper cable, XLPE insulation.

ACCORDING TO: IEC 60502-2



F<sub>ca</sub>



## APPLICATION

X-VOLT<sup>®</sup> RHZ1 is a Medium Voltage copper cable halogen-free for fixed installations. Suitable for transport and distribution of electric power in medium voltage networks.

## CONSTRUCTION

### Conductor

Electrolytic annealed copper, class 2 according to EN 60228 and IEC 60228.

Optionally, with longitudinal water tightness (cable type -2OL).

### Conductor screen

Screen over the conductor, made of thermosetting semiconductor material.

### Insulation

Cross-linked polyethylene type XLPE according to IEC 60502-2, natural colour.

Cross linked in catenary line with nitrogen atmosphere through a triple layer extrusion process.

### Insulation screen

Screen over the insulation, made of thermosetting and strippable semiconductor material.

### Metallic screen

Copper wires and copper tape screen, with a minimum cross-section of 16mm<sup>2</sup>.

### Longitudinal water tightness

Hygroscopic tape completely covering the screen (cable type -OL and -2OL).

### Outer sheath

Polyethylene type ST7 according to IEC 60502-2.

Red colour.

## CHARACTERISTICS



### Electrical performance

Medium Voltage: 6/10 (12) kV  
8,7/15 (17,5) kV  
12/20 (24) kV  
18/30 (36) kV



### Thermal performance

Maximum conductor temperature: 90°C.  
Maximum short-circuit temperature: 250°C (max 5 s)  
Minimum service temperature: -15°C.



### Fire performance

Reaction to fire CPR: F<sub>ca</sub> according to EN 50575.  
Halogen free according to EN 60754-1 / IEC 60754-1.  
Low corrosive gases emission according to EN 60754-2 / IEC 60754-2.



### Mechanical performance

Minimum bending radius: 15x cable diameter.  
Abrasion resistant.  
Tear resistant.



### Environmental performance

UV Resistant according to UNE 211605.



### Installation conditions

Open Air.  
Buried.  
In conduit.

## Additional cable features on request:

- Also available in aluminium
- Longitudinal Water Blocking
- Radial Water Blocking
- Water performance AD8 (submersible)
- Fire performance: LSHF (Low Smoke Halogen Free)
- Reaction to fire CPR: Cca
- Rodent protection

## STANDARDS / COMPLIANCE



According to  
IEC 60502-2



Standards and approvals  
AENOR



CPR (Construction Products Regulation)  
F<sub>ca</sub>



# Top Cable

## Medium Voltage **X-VOLT® cables**

### **X-VOLT® RHZ1 26/45**



### **X-VOLT® N2XS(F)2Y**



### **X-VOLT® HEPRZ1**



### **X-VOLT® RH5Z1**



## Medium Voltage **X-VOLT® cables**

### **X-VOLT® FR-N20XA8E-AR**



### **X-VOLT® N2XS(FL)2Y**



### **X-VOLT® TSLF**



### **X-VOLT® TSLH**



# Top Cable

## Top Cable, your reliable cable **Partner**



A demanding project always needs **a reliable and committed supplier**. Our 7 factories in Barcelona's area assure we have the infrastructure and capacity to **manufacture, supply and deliver your cable** as and when you need it. Approved and included in the supplier list of the main contractors, subcontractors, and worldwide Data Centre companies, you can have peace of mind that our specially designed cables have been thoroughly tested and installed globally.



**Your Data Centre will be greener than ever in the hands of Top Cable, one of the most sustainable cable manufacturers.** Most of the energy we consume in our factories comes from renewable sources, our drums are manufactured from sustainable forests only and, thanks to our cable EPDs, you will be able to make informed decisions that align with your sustainability goals.



**Want to know more?**



Top Cable has an open-door policy for technical visits and quality inspections. Our factories are working for your project, and we love to have you visiting so that we can show you firsthand all our manufacturing, logistics and management processes. This way we can deeply understand each other, working together to take the project to the next level. Along with it, the **factories are fully equipped with top-tier laboratories** to ensure the final product performance, and your technical team can be present during testing of your order.



**Top Cable**

# Top Cable



## We excel at **Service**



Being a global supplier requires understanding our customer's needs. Whether for a full package or short lengths, our **large cable stock of Data Centre enhanced cables reduces most of your lead times to zero**. For the few special production items, we manufacture with the lowest lead times in the industry. We have large quantities of power, fire-resistant, CPC earthing, EMC, and control cables on the shelf, ready for shipping. With our fully automated warehouse robots, it only takes 2 days for us to prepare and ship your large orders.



Before purchasing, your account executive (AE) **will provide application knowledge and technical expertise to answer all your questions**. Current carrying capacities, CPR fire ratings, drum sizes, and water protection are some of the topics that your AE manages really well on a technical level. Your peace of mind is essential, so we have open doors for technical visits or quality inspections.



**Contact  
our Data  
Centre  
experts**



After purchase, your account executive (AE) **will monitor your order and make sure you receive the cable, documents and certificates as, when, and where requested**. They will be your primary point of contact for questions regarding lab tests, quality control, factory visits, deliveries, drum returns, and all your needs as your project advances and evolves. After the full package is delivered, our work is not done. Your AE will continue to be your contact for drum returns, short-length deliveries, spare cable, and ensuring everything works according to your project.

# Top Cable

## Data Centre enhanced cables



**Data Centre enhanced cables** are specially designed and manufactured according to European and International Standards for Data Centres of all sizes, to meet and exceed project design, country and European regulations. **Top Cable is approved and included in the supplier/vendor list of the main contractors, subcontractors, and Data Centre companies globally.**



**Fire performance (CPR Construction Products Regulation)** is at the heart of the cable design. Most of our cables are B2<sub>ca</sub>, exceeding the usual C<sub>ca</sub> requirements for power, fire-resistant, CPC earthing, EMC, and all LV cables that are needed in your project. Our CPR laboratories allow us to rigorously test cables, and make sure your people and equipment are safe, in case of a fire in your facilities.



**Want to know more?**



**Cable flexibility** plays a big part during installations. A few centimeters off design, and a rigid cable could be impossible to connect without damaging the cable or the equipment, adding unnecessary risks of performance and safety to your Data Centre. By using class 5 conductors and the right compounds, cables are flexible enough to eliminate this risk. An unexpected tight turn for a 1x300 sqmm cable is an easy fix with our flexible cables, but it is an engineering nightmare with a rigid cable. Sounds familiar?

# Top Cable



**Top Cable**

Driving your energy



# CABLES FOR **DATA CENTRES**

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