



# **SOLAR CABLES**

Cables  
for PV  
installations





# Top Cable

# **Topsolar®**

## **A complete range of cables for solar installations**

**At Top Cable you will find a reliable manufacturer and supplier for all cables required on PV installations. Our comprehensive range of solar cables covers from cable selection or design, project management with our technical expertise to logistics and after-sales service support.**

Top Cable is committed to manufacturing products under the highest quality standards and in offering an excellent service to its customers worldwide, highlighting:



Total traceability in our product range.



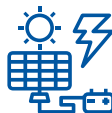
Worldwide recognized certificates



CPR certified cables. Large solar cable stock.



Full product range up to 66kV. After-sales service support.



Cables specifically designed for solar installations.



Power and Fiber optics cables



# Top Cable

**String cables**  
**TOPSOLAR® H1Z2Z2-K**

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**Low voltage**  
**aluminium cables**

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**Medium voltage**  
**X-VOLT® cables**

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**Cables for PV**  
**auxiliary services**

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**Cables for BESS**  
**in PV plants**

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**Cables for PV**  
**floating**

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# Top Cable

**String cables**  
**TOPSOLAR® H1Z2Z2-K**





# TOPSOLAR® PV H1Z2Z2-K

TÜV solar PV cable.

ACCORDING TO: EN 50618 / IEC 62930 / UTE C 32-502



Cca

## APPLICATION

The TOPSOLAR® PV H1Z2Z2-K cable, which is TÜV certified according to EN 50618 and AENOR certified according to IEC 62930, it is suitable for both fixed and mobile solar installations (solar farms, rooftop solar installations and floating plants).

It is a highly flexible cable compatible with all major connectors and specially designed for the connection of photovoltaic panels.

This versatile single-conductor cable is designed to meet the varying needs of the solar industry.

Suitable for wet, damp and humid locations.

- Solar PV installations string cable.

## CONSTRUCTION

### Conductor

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

### Insulation

Halogen free cross-linked rubber according to table B1 in Annex B of EN 50618 and IEC 62930.

### Outer sheath

Halogen free cross-linked flexible rubber according to table B1 in Annex B of EN 50618 and IEC 62930.

Red or black colour.

## CHARACTERISTICS



### Electrical performance

Low voltage: 1,5 (1,8) kV DC.  
1,0/1,0 kV AC.



### Thermal performance

Maximum conductor temperature: 90°C (120°C during 20.000 h).  
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 60332-1-2 / IEC 60332-1-2.

Fire non-propagation according to EN 50399.

Reaction to fire CPR: Cca-s1b, 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.

Low smoke emission according to EN 61034 / IEC 61034:

Light transmittance > 60%.



### Mechanical performance

Minimum bending radius:

4x cable diameter (cable diameter ≤ 8 mm)

5x cable diameter (8 < cable diameter ≤ 12 mm)

6x cable diameter (cable diameter > 12 mm).

Impact resistance: AG2 Medium severity.



### Environmental performance

Chemical & Oil resistance: Excellent.

Grease & mineral oils resistance: Excellent.

Ozone resistant according to EN 50618.

UV Resistant according to EN 50618 and IEC 62930.

Water resistance: AD7+ Immersion.

AD8 Submersion.



### Installation conditions

Open Air.

Buried.

In conduit.

## STANDARDS / COMPLIANCE



### According to

EN 50618 / IEC 62930 / UTE C 32-502



### Standards and approvals

TÜV Rheinland (from 2.5 to 25mm² in Black and Red) / RETIE / AENOR/ RoHS / CE / UKCA



### CPR (Construction Products Regulation)

Cca-s1b, d2, a1





## Low voltage aluminium cables







# TOPSOLAR® PV Al 1500 V

Aluminium PV cable.

ACCORDING TO: IEC 60502-1



E<sub>ca</sub>

## APPLICATION

TOPSOLAR® PV DC Feeder Aluminium cable is suitable for all types of underground and open air solar installations. This cable is recommended for connections between string boxes and photovoltaic inverters in large scale rooftops or ground farms.

- Solar PV installations.
- Heavy impact and armoured versions also available.

## CONSTRUCTION

### Conductor

Aluminium class 2 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 x	Brown + Black + Grey
3 x + 1 x	Brown + Black + Grey + Blue (reduced cross-section)
4 x	Brown + Black + Grey + Blue

### Outer sheath

Special UV resistant PVC, type ST2 according to IEC 60502-1. Black colour.

## CHARACTERISTICS



### Electrical performance

Low voltage: 1,5/1,5 (1,8) kV DC according to EN 50618.  
1,8/3 (3,6) kV AC according to IEC 60502-1.



### 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: 5x cable diameter.  
Impact resistance: AG2 Medium severity.



### Environmental performance

Chemical resistance: Good.  
Grease & mineral oils resistance: Good.  
UV Resistant according to EN 50618 and HD 605/A1.  
Water resistance: AD8 Submersion.



### Installation conditions

Open Air.  
Buried.  
In conduit.

## STANDARDS / COMPLIANCE



According to  
IEC 60502-1



Standards and approvals  
RETIE / RoHS / CE



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





# TOPSOLAR® PV AWA/SWA AL 1500 V

Aluminium or galvanized wire armour cable.

ACCORDING TO: IEC 60502-1



## APPLICATION

TOPSOLAR® PV AWA/SWA DC Feeder Aluminium cable is suitable for all types of underground and open air solar installations.

This cable is recommended for connections between string boxes and photovoltaic inverters in large scale rooftops or ground farms. Suitable for transport and distribution of electric power where there is the possibility of mechanical aggressions.

- Solar PV installations.

## CONSTRUCTION

### Conductor

Aluminium class 2 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 x | Grey + Brown + Black                |
| 4 G | Brown + Black + Grey + Green/Yellow |
| 4 x | Brown + Black + Grey + Blue         |

### Inner covering

Extruded PVC.

### Armour

Aluminium wire armour (AWA) is used in single-core cables to avoid parasite currents that may overheat the cable.

Galvanized steel wire armour (SWA) is used in multicore cables.

### Outer sheath

Special UV resistant PVC, type ST2 according to IEC 60502-1.

Black colour.

## CHARACTERISTICS



### Electrical performance

Low voltage: 1,5/1,5 (1,8) kV DC according to EN 50618.  
1,8/3 (3,6) kV AC according to IEC 60502-1.



### 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.  
Reduced halogen emission. Chlorine < 15%.



### Mechanical performance

Minimum bending radius: 10x cable diameter.  
Impact resistance: AG4 High severity.



### Environmental performance

Chemical resistance: Good.  
Grease & mineral oils resistance: Good.  
UV Resistant according to EN 50618 and HD 605/A1.

## STANDARDS / COMPLIANCE



According to  
IEC 60502-1



Standards and approvals  
CE / RoHS







# TOPSOLAR® PV LSZH AI 1500 V HEAVY DUTY

Aluminium PV cable.

ACCORDING TO: IEC 60502-1



## APPLICATION

TOPSOLAR® PV LSZH HEAVY DUTY DC Feeder Aluminium cable is suitable for direct buried installations and open air solar installations.

This cable is recommended for connections between string boxes and photovoltaic inverters in large scale rooftops or ground farms.

- Solar PV installations.

## CONSTRUCTION

### Conductor

Aluminium class 2 according to EN 60228 and IEC 60228.

### Insulation

Cross-linked polyethylene type XLPE according to IEC 60502-1. Natural colour.

### Outer sheath

Polyethylene halogen free and UV resistant, type ST7 according to IEC 60502-1 with extra thickness as protection for direct buried cables.

Black colour.

## CHARACTERISTICS



### Electrical performance

Low voltage: 1,5/1,5 (1,8) kV DC according to EN 50618.  
1,8/3 (3,6) kV AC according to IEC 60502-1.



### 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

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: 5x cable diameter.  
Impact resistance: AG4 (≤ 40 J) Extra high severity according to NF C 33-226.  
Abrasion according to NF C 33-226.



### Environmental performance

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  
CE / RoHS



# Top Cable

**Medium voltage  
X-VOLT® cables**







# X-VOLT® AL (-OL/-2OL) RHZ1

Medium Voltage aluminium cable, XLPE insulation.

ACCORDING TO: IEC 60502-2



## APPLICATION

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

## CONSTRUCTION

### Conductor

Aluminium 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.

## STANDARDS / COMPLIANCE



According to  
IEC 60502-2



Standards and approvals  
AENOR / RETIE (18/30 (36) kV)



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



# Medium voltage **X-VOLT® cables**

### **X-VOLT® RHZ1 26/45**



### **X-VOLT® RHZ1 RA**



### **X-VOLT® HEPRZ1**



### **X-VOLT® RH5Z1**





**Top Cable**

# Medium voltage **X-VOLT® cables**

## **X-VOLT® FR-N20XA8E-AR**



## **X-VOLT® FR EDR**



## **X-VOLT® TSLF**



## **X-VOLT® TSLH**



# Cables for **PV auxiliary services**

## **Powerflex® RV-K**



## **Toxfree® H07Z1-K Cu/Sn Outdoor**



## **Datalan® FO DPO**



## **Datalan® FO DPF**



## **Datalan® FO DP0P**





# Cables for **BESS in PV plants**

## **Powerflex® RV-K 1,8/3**

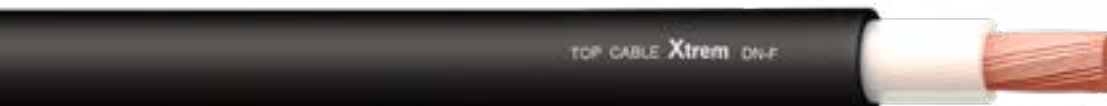


## **Powerhard® RVMV-K 1,8/3**



# Cables for **PV floating**

## **Xtrem® DN-F 1,8/3**



## **Topsolar® H1Z2Z2-K**



# Top Cable





# Top Cable, a European manufacturer of industrial cables

**Top Cable is one of the main European electric cables manufacturers. We manufacture a wide spectrum of cables ranging from control cables for specialized applications to larger power cables for medium voltage applications in various industries.**

We supply cables for worldwide construction projects, OEM's, renewable energies, and more. We are proud to supply high-quality, cost-effective cables with good after-sale services. Customer's satisfaction is Top Cable's prime goal.

All Top Cable's manufacturing plants are based around Barcelona, Spain. The organization is family-owned company manufacturing electric cables on an international scale, with offices and warehouses located around the globe. Therefore, we guarantee customer proximity on a global level.

Customers appreciate Top Cable as a technically leading manufacturer of cables of outstanding quality, meeting the most stringent international specifications and certificates. Large cable stocks are available on the company's main logistics center in Barcelona to ensure short lead times and shipment flexibility. Top Cable also manages several cable stocks across their worldwide offices and warehouses to avoid out-of-stock situations in the supply chain.

As a familiar group company, Top Cable believes in the compatibility of economic, social, and ecological aspects, being committed to acting responsibly along our entire value chain.

# **Top Cable, a sustainable cable manufacturer with a premium service**







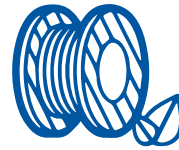
100% GREEN  
ENERGY



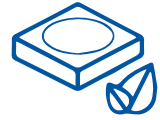
ISO 14001  
CERTIFIED



WASTE  
RECYCLING



PSFC  
DRUMS



ECO  
BOXES





## GENERAL CATALOGUE

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## TOPSOLAR Heavy Duty®

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## LSHF CPR CABLES

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## INDUSTRIAL CATALOGUE

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# SOLAR CABLES

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

Ref. 901003012201001

