

Miguēlez

CABLES

Solflex^{H1Z2Z2-K}



AENOR<HAR>

Certified Cable
According to EN 50618
(s= from 1,5 up to 50 mm²)



1. TECHNICAL FEATURES

1.1. Technical designation H1Z2Z2-K

1.2. Rated voltage

1,5 kV D.C -
Maximum permitted operating D.C
voltage: 1,8 kV D.C.
0,6 / 1 (1,2) kV A.C. : $U_o/U (U_m)$

1.3. Maximum Conductor Temperatures

- En servicio permanente 90°C / 120°C (20.000h)¹
- En cortocircuito 250°C

1.4. Voltage Test

- 6,5 kV en A.C. (5 minutes) or
- 15 kV D.C. (5 minutes).

1.5. Fire Performance. Standards

- CPR classification. Reaction to fire: Eca (EN 50575:2014+A1:2016)
- Flame retardant: EN 60332-1-2, IEC 60332-1-2
- Halogen free. Low emission of toxic gases: EN 60754-1, IEC 60754-1 (HCl < 0,5 %)
- Low opacity of emitted smokes: EN 61034-2, IEC 61034-2 (Light transmittance > 60 %)
- Low acidity, corrosivity and conductivity of emitted gases: EN 60754-2, IEC 60754-2 (pH>4,3 & conductivity < 10 µS/mm)

1.6. Other Performances

- Weathering and UV resistant: EN 50618, annex E
- Thermal endurance: EN 60216-1 & EN 60216-2
- Sheath resistance against acid and alkaline solution: EN 60811-404 (N-Oxalic acid & N-Sodium Hydroxide)

¹ SOLFLEX H1Z2Z2-K is designed to operate at a normal maximum conductor temperature of 90°C, but for a maximum of 20.000 hours a max. conductor temperature of 120°C at a max. ambient temperature of 90°C is permitted.

2. CABLE DESCRIPTION

2.1 Construction

Based on Harmonized standard EN 50618.

- **Conductor.**
Flexible, tinned copper conductor, class 5 according to International Standard IEC 60228. Suitable for mobile service.
- **Insulation.**
Crosslinked polyolefin, halogen free, according to Harmonized standard EN 50618.
- **Outer sheath**
Crosslinked polyolefin, halogen free, according to Harmonized standard EN 50618. Sheath colour: Black or red.
Other colors under request.

2.3. Design

- **Conductor:** Tinned copper class 5
- **Insulation:** Crosslinked polyolefin
- **Oversheath:** Crosslinked polyolefin

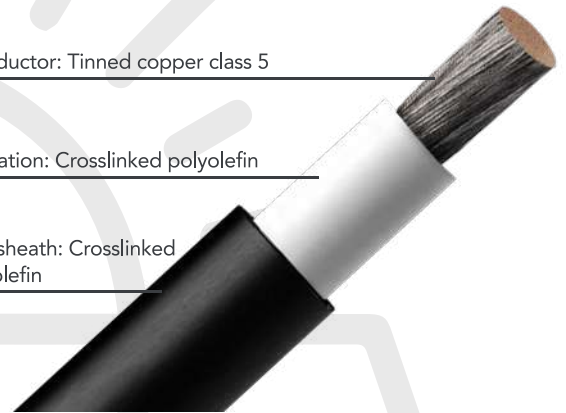
2.4. Marking

AENOR <HAR> MIGUELEZ SOLFLEX H1Z2Z2-K 1xS mm² MM/AA EN 50618 XXX MLS

Where:

- S = Cross sectional area in mm²
- MM/AA = Last two digits of the month and year of manufacture

AENOR <HAR> certification: From 1,5 up to 50 mm²



3. APPLICATIONS

3.1. Installations Mobile service or fixed installation

3.2. User Guide

SOLFLEX H1Z2Z2-K is intended for fixed or mobile (heavy duty) photovoltaic (PV) installations, in ground-mounted or rooftop systems, or in other architectural integrations. They are suitable for indoors and outdoors installations. Ideal for solar trackers which require flexibility and aptitude for mobile service. SOLFLEX H1Z2Z2-K is designed to operate at a normal maximum conductor temperature of 90°C, but for a maximum of 20.000 hours a max. conductor temperature of 120°C at a max. ambient temperature of 90°C is permitted. Life expectancy greater than 25 years: The expected period of use under normal usage conditions as specified in the technical datasheet is at least 25 years.

Intended for use in PV installations acc. to HD 60364-7-712. Intended for equipment with protective insulation (protection class II).

Uses

- Interconnection between PV panels (panel wire) – PV strings or arrays
- Wiring from PV panels to connection box
- Wiring from PV panels to inverter DC/AC (when there is no connection box).

3.3. Installation Methods ²

- Suitable for installation in free air, on brackets, ladders, cable-trays or in conduits and trunkings.
- Suitable for the application with protection class II equipment (protective double insulation).
 - Weathering and UV resistant according to Annex E of the Harmonized standard EN 50618.
 - Permanent use outdoors, condition AN3.
 - Presence of water: condition AD7.
 - Suitable for presence of vibrations: condition AH3
 - Resistance to impacts: condition AG2
 - Resistance to corrosive or polluting substances: condition AF3
 - Suitable to work at extreme ambient temperatures (from -40 °C up to +90 °C).
 - Ozone resistance.
 - They are inherently short-circuit and earth fault proof acc. to HD 60364-5-52.
 - Easy to handle and install, easy strip-ability.
 - Suitable to common connector types.

Temperature ranges:

Minimum ambient temperature: - 40°C / Maximum ambient temperature: + 90°C
Maximum temperature for cable storage: + 40° C
Minimum temperature for laying and installation: - 25° C

² The installation methods established by the rules and regulations that are applicable in each particular case must be respected.

Solflex H1Z2Z2-K

Minimum bend radius:

During installation, a minimum bend radius will be respected

| | FOR A CABLE DIAMETER (mm) | | | |
|--|---------------------------|--------|---------|------|
| | D≤8 | 8<D≤12 | 12<D≤20 | D>20 |
| Fixed installation | 3D | 3D | 4D | 4D |
| Free movement | 4D | 4D | 5D | 6D |
| At inlet of portable appliance or mobile equipment. No mechanical load on the cable. | 4D | 4D | 5D | 6D |

Correction factors for different ambient temperatures:

| | AMBIENT TEMPERATURE | CORRECTION FACTOR |
|---|---------------------|-------------------|
| Correction factor for temperatures different from 60 °C | up to 60 °C | 1 |
| | 70 °C | 0,92 |
| | 80 °C | 0,84 |
| | 90 °C | 0,75 |

Maximum admissible intensities:

| SECTION (mm ²) | INTENSITIES (A) | | |
|----------------------------|-----------------------|-----------------------------|---|
| | TYPE OF INSTALLATION | | |
| | Single Cable Outdoors | A single cable ON a SURFACE | Two cables charged in contact, on a surface |
| 1,5 | 30 | 29 | 24 |
| 2,5 | 41 | 39 | 33 |
| 4 | 55 | 52 | 44 |
| 6 | 70 | 67 | 57 |
| 10 | 98 | 93 | 79 |
| 16 | 132 | 125 | 107 |
| 25 | 176 | 167 | 142 |
| 35 | 218 | 207 | 176 |
| 50 | 276 | 262 | 221 |
| 70 | 347 | 330 | 278 |
| 95 | 416 | 395 | 333 |
| 120 | 488 | 464 | 390 |
| 150 | 566 | 538 | 453 |
| 185 | 644 | 612 | 515 |
| 240 | 775 | 736 | 620 |

* For ambient temperature of 60°C and T* max. in the conductor of 120°C. The maximum period of time expected for use at the T max. of 120°C and an ambient temperature of 90°C is limited to 20,000 h. For installation of grouped cables, correction factors must be applied over current carrying values. The document HD 60364-7-712 section 712.523.101 recommends that for the design of the submitted cables to direct heating of the lower part of the photovoltaic modules, the ambient temperature to be taken into account for its dimensioning is at least equal to 70°C.

4. DIMENSIONAL CHARACTERISTICS

| Cross sectional area mm ² | Insulation Thickness mm | Outer sheath Thickness mm | Ø Overall mm | Weight kg/km | Max. Electrical Resistance at 20°C en D.C. Ω / km |
|--------------------------------------|-------------------------|---------------------------|--------------|--------------|---|
| 1 X 1,5 | 0,7 | 0,8 | 4,5 | 28 | 13,7 |
| 1 X 2,5 | 0,7 | 0,8 | 5,1 | 39 | 8,21 |
| 1 X 4 | 0,7 | 0,8 | 5,6 | 55 | 5,09 |
| 1 X 6 | 0,7 | 0,8 | 6,3 | 73 | 3,39 |
| 1 X 10 | 0,7 | 0,8 | 7,3 | 115 | 1,95 |
| 1 X 16 | 0,7 | 0,9 | 8,6 | 172 | 1,24 |
| 1 X 25 | 0,9 | 1 | 10,6 | 257 | 0,795 |
| 1 X 35 | 0,9 | 1,1 | 11,5 | 352 | 0,565 |
| 1 X 50 | 1 | 1,2 | 13,4 | 498 | 0,393 |
| 1 X 70 | 1,1 | 1,2 | 15,1 | 687 | 0,277 |
| 1 X 95 | 1,1 | 1,3 | 16,8 | 891 | 0,21 |
| 1 X 120 | 1,2 | 1,3 | 18,8 | 1132 | 0,164 |
| 1 X 150 | 1,4 | 1,4 | 21,2 | 1413 | 0,132 |
| 1 X 185 | 1,6 | 1,6 | 24,2 | 1740 | 0,108 |
| 1 X 240 | 1,7 | 1,7 | 26,8 | 2284 | 0,0817 |

Weight and overall diameter values are approximate and subject to normal manufacturing tolerances

5. COLORS

Outer sheath color will be preferably black or red.

