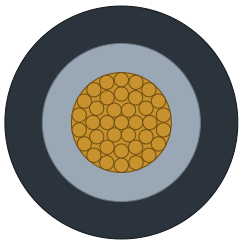
H1Z2Z2-K Halogen-Free Solar Cable, 1.5/1.5 kV DC

SORIVO Product Series: **Cross-linked single-core PV cable** | Rated Voltage DC 1.5/1.5 kV | Standard EN 50618 · IEC 62930 | Cross-sections 1.5–240 mm²



- XL halogen-free sheath — 0.8 mm
- Class 5 tinned copper, IEC 60228
- XL insulation — 0.7 mm

APPLICATION

Single-core DC cable for the string and array wiring of photovoltaic systems — module interconnects, string runs and DC combiner connections, in conduit or on open tray, exposed to sun, ozone, rain and repeated temperature cycling. Rated 1.5/1.5 kV DC with a 1.8 kV maximum system voltage, it covers the 1 500 V DC architectures now standard on utility and commercial arrays.

CONSTRUCTION

Conductor
Electrolytic tinned copper, finely stranded Class 5 to IEC 60228 — tinned so the strand surface does not oxidise in damp junction boxes

Insulation
Halogen-free cross-linked compound, 0.7 mm (0.9 mm from 25 mm²), bonded to the sheath as a two-layer wall

Sheath
Halogen-free cross-linked compound, 0.8–1.1 mm, black or red

MODEL DESIGNATION

H Harmonised cable · **1Z2Z2** cross-linked insulation and sheath, halogen-free · **-K** flexible conductor for fixed protected installation

KEY FEATURES

- EN 50618 and IEC 62930 — the same cable is accepted for TÜV and for the IEC-based markets
- 1.5/1.5 kV DC, 1.8 kV maximum system voltage; test voltage 6.5 kV AC / 15 kV DC
- 90 °C continuous for a 30-year life; 120 °C for 20 000 h; 250 °C short circuit for 5 s
- UV resistant to EN 50618 Annex E, ozone resistant, water resistant to AD8, halogen-free to EN 60754

STANDARDS

- EN 50618 — cables for photovoltaic systems
- IEC 62930 — PV cables, 1.5 kV DC
- IEC 60228 — Class 5 conductors
- EN 60332-1-2 — flame propagation, single cable
- EN 60754 / EN 61034 — halogen-free and smoke density

TECHNICAL PARAMETERS

Rated Voltage
AC 1.0/1.0 kV (1.2/1.2 kV max)
DC 1.5/1.5 kV (1.8/1.8 kV max)

Test Voltage
6.5 kV AC, 5 min — or 15 kV DC, 5 min

Conductor Temperature
90 °C continuous (30-year life)
120 °C for 20 000 h
250 °C short circuit, 5 s maximum

Ambient Range
Fixed -40 to +90 °C
Installation and flexing -25 to +60 °C

Bending Radius
Fixed: 3×D up to 12 mm, 4×D above
Per-size values in Table 1

Max. Tensile Load
15 N/mm² in service, 50 N/mm² during installation

Sizes
1.5–240 mm²; twin-core 2×4 mm² available

1.5 kV DC	120 °C	Class 5
EN 50618	20 000 h	tinned copper

DIMENSIONS & CONDUCTOR DATA

Table 1 — single-core H1Z2Z2-K, 1.5 to 240 mm²

CROSS-SECTION mm²	CONDUCTOR DIA. max. mm	OVERALL DIA. mm	BENDING RADIUS fixed, min. mm	WEIGHT kg/km	TENSILE LOAD max. N	R @20 °C Ω/km
1.5	**1.6**	**4.4–5.0**	**15**	**35**	**23**	**13.7**
2.5	**1.9**	**4.8–5.4**	**17**	**46**	**38**	**8.21**
4	**2.4**	**5.3–5.9**	**18**	**61**	**60**	**5.09**
6	**2.9**	**5.8–6.4**	**20**	**80**	**90**	**3.39**
10	**4.0**	**7.0–7.6**	**23**	**122**	**150**	**1.95**
16	**5.6**	**9.0–9.8**	**30**	**200**	**240**	**1.24**
25	**6.4**	**10.3–11.2**	**34**	**290**	**375**	**0.795**
35	**7.5**	**11.7–12.5**	**50**	**400**	**525**	**0.565**
50	9.0	13.5–14.5	58	560	750	0.393
70	10.8	15.5–16.5	66	750	1 050	0.277
95	12.6	17.7–18.7	75	970	1 425	0.210
120	14.2	19.2–20.4	82	1 220	1 800	0.164
150	15.8	21.4–22.6	91	1 500	2 250	0.132
185	17.4	23.7–25.1	101	1 840	2 775	0.108
240	20.4	27.1–28.5	114	2 400	3 600	0.082

Highlighted rows are the sizes carried in stock; the remaining cross-sections are produced on the same construction. Outer diameter is quoted as the range published for the size, not as a single nominal figure — the cable is not round-critical, but the range is what the glands and connectors are selected against.

TWIN-CORE 2×4 mm²

Supplied as a flat or round twin for short module-to-module links and for harness work where two single cores would be dressed separately. The conductor, insulation and sheath compounds are identical to the single-core construction; dimensions are stated per size.

BENDING RADIUS

The per-size figures in Table 1 follow EN 50565-1 and apply to fixed, protected installation. Smaller radii are permitted by some installers but shorten service life; below the tabulated value the manufacturer's warranty does not apply. During installation allow 6× the outer diameter.

SELECTION NOTES

- **System voltage.** The 1.5/1.5 kV DC rating covers 1 500 V arrays; check the 1.8 kV maximum against the inverter's upper MPPT limit, not against the nominal string voltage.
- **Voltage drop.** Calculate on the conductor resistance at 90 °C, using the temperature coefficient for copper — the 20 °C figure in Table 1 will understate the drop on a hot roof.
- **Connectors.** 4, 6 and 10 mm² mate with the common MC4-type bodies; the connector carries its own voltage and current rating, which must be at least the string rating.
- **UV.** The sheath meets EN 50618 Annex E, but cable ties, conduit ends and junction boxes are separate components and need their own UV-stable specification.

CURRENT CARRYING CAPACITY

Table 2 — EN 50618 Table A3, 60 °C ambient, conductor at 90 °C

CROSS-SECTION mm²	FREE IN AIR single cable, A	ON A SURFACE single cable, A	TWO CABLES TOUCHING on a surface, A	SHORT-CIRCUIT kA, 5 s
1.5	**30**	**29**	**24**	**0.21**
2.5	**41**	**39**	**33**	**0.36**
4	**55**	**52**	**44**	**0.57**
6	**70**	**67**	**57**	**0.86**
10	**98**	**93**	**79**	**1.43**
16	**132**	**125**	**107**	**2.29**
25	**176**	**167**	**142**	**3.58**
35	**218**	**207**	**176**	**5.01**
50	276	262	221	7.15
70	347	330	278	10.01
95	416	395	333	13.59
120	488	464	390	17.16
150	566	538	453	21.45
185	644	612	515	26.46
240	775	736	620	34.32

Ratings are for a single cable. Where cables are grouped, apply the grouping factors of HD 60364-5-52; where the ambient exceeds 60 °C, apply the correction factors of EN 50618 Table A4 (Table 3 below). The short-circuit values assume a 5 s duration and the 250 °C short-circuit temperature limit.

AMBIENT CORRECTION

Table 3 — EN 50618 Table A4, applied to the values in Table 2

AMBIENT TEMPERATURE	UP TO 60 °C	70 °C	80 °C	90 °C
Correction factor	1.00	0.92	0.84	0.75

These are 60 °C ambient figures, not 30 °C. A module backsheet or a roof surface in summer runs well above the air temperature, so PV cable is rated at a 60 °C ambient from the start. Reading Table 2 against a 30 °C building-wire table understates the cable by roughly a third and is a common source of over-loaded strings.

VERIFICATION

Table 4 — inspection programme

CHECK	REFERENCE
ROUTINE — EVERY DELIVERY LENGTH	
Conductor resistance at 20 °C	EN 50618 / IEC 60228
Dimensions: insulation and sheath wall, overall diameter	EN 50618
High-voltage test at 6.5 kV AC, 5 min	EN 50618
TYPE TEST — PROVED ONCE ON THE DESIGN	
Cold bending and cold impact at -40 °C	EN 60811-504 / -506
UV resistance, 720 h / 360 cycles	EN 50618 Annex E
Ozone resistance	EN 50396, test type B
Halogen-free and smoke density	EN 60754 / EN 61034
Flame propagation, single cable	EN 60332-1-2

Disclaimer. The information in this datasheet is for guidance only and is subject to change without notice. Dimensions and masses are nominal and subject to manufacturing tolerance; confirm against the certificate of the delivered product. This document is uncontrolled once printed or forwarded — the current revision, issued under document number SORIVO-TM-H1Z2Z2K-001, governs. © 2026 SORIVO. All rights reserved. Current ratings assume a 60 °C ambient and a 90 °C conductor, single cable. Apply the grouping factors of HD 60364-5-52 and the ambient correction of EN 50618 Table A4 where conditions differ. Short-circuit ratings assume a maximum duration of 5 s.