



DESIGN STANDARDS

EN 50618

IEC 62930



APPLICATION

Solen H1Z2Z2-K Solar cables conforming to European standard 'EN 50618' and international standard 'IEC 62930' are designed for installations in photovoltaic systems, solar parks, solar farms, rooftop solar systems and in interconnection of solar panels and inverter. They are intended for permanent use outdoor and indoor, for free movable, free hanging and fixed installation. Installation also in conduits and trunkings on, in or under plaster as well as in appliances. Suitable for the application in/at equipment with protective insulation (protection class II).

CONSTRUCTION

Conductor	Tinned annealed flexible copper-Class 5 according to IEC 60228
Insulation	Halogen free E-beam cross-linked compound according to EN 50618 Table B.1
Outer Sheath	Halogen free E-beam cross-linked compound according to EN 50618 Table B.1
Sheath Colour	Black or Red (Blue and Green-yellow available upon request)

Insulation and sheath are firmly bonded to enhance insulation resistance

KEY FEATURES

- TÜV RHEINLAND approval
- CB approval
- REACH and RoHS Compliant
- CPR rating Dca acc. to EN 50575 (Cca upon request)
- Expected service lifetime (Min. 35 years acc. to EN 50618)
- Higher insulation resistance
- High current carrying and short circuit capacity
- Compatible for all major connectors
- AG2 Medium severity impact resistance
- AD8 water submersion compatible
- Ammonia Resistance
- Salt Water Resistance
- Suitable for wet, damp and humid locations
- Excellent flexibility
- Good stripping performance from conductor
- Abrasion resistant
- UV, Oil, Grease and Ozone resistant
- Acid and Alkaline resistant
- Anti rodent and Anti termite versions are available.
- Direct Burial
- Do not Contain Fish Oil



Customer:

Date:

Solen Kablo San. Tic. A.Ş.
Arap Cami Mah. Arapkayyum Sok.
Karavelioğlu Han No.23 / 5
Beyoğlu - 34420 İstanbul - Türkiye

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**TECHNICAL CHARACTERISTICS**

Rated Voltage (U0/U)	AC 1000 / 1000 V DC 1500 V
Max Voltage	AC 1200 / 1200 V DC 1800 V
Test Voltage	6,5 kV AC, 15 kV DC (5 min.)
Operating Ambient Temperature	-40°C / +90°C
Max. Temperature at Conductor	+125°C based on EN 60216-1 (20.000 h, 50% residual elongation)
Installations Temperature	-25°C / +60°C
Short Circuit Temperature	+280°C (Max. 5 sec.)
Min. Bending Radius	> 4 x D as per EN 50565-1
Insulation Resistance	EN 50395 Clause 8.1, IEC 60227-2 Clause 2.4
Surface Resistance of Sheath	EN 50395 Clause 11, IEC 62821 Clause 5.1
Cold Bend Test	EN 60811-504 (-40°C)
Cold Elongation Test	EN 60811-505 (-40°C)
Cold Impact Test	EN 60811-506 & EN 50618 (-40°C)
Damp Heat Test	EN 50618 (Table 2), EN 60068-2-78 (1000 hours, 90°C & %85 humidity)
Halogen Free Properties	EN 50525-1 (Annex B), IEC 60754-1, IEC 60754-2
Low Smoke Emission	EN 61034-2 (Light transmittance > 60%)
Flame Retardancy	EN 60332-1-2
Ozone Resistance	IEC 60811-403, EN 50396 Clause 8.1.2
Weather / UV Resistance	EN 50618 (Annex E), IEC 62930
Dynamic Penetration Test	IEC 62930, EN 50618 (Annex E)
Impact Condition	AG2 acc.to EN 50618 and HD 60364-5-52
Vibration Condition	AH3 acc.to EN 50618 and HD 60364-5-52
Acid and Alkaline Resistance	EN 50618 (Annex B)
Shrinkage Test	EN 60811-503, IEC 60811-503, EN 50618 (Table 2)
Durability of Print	EN 50618
Long Term Resistance of Insulation to DC	EN 50395 Clause 9, IEC 62821-2
Ammonia Resistance	7 days at 23°C saturated ammonia atmosphere (internal tested)
Salt Water Resistance	7 days at 23°C in saturated salt solution (internal tested)
Water Submersion	AD8 EN 50525-2-21 Appendix E (internal tested)
Underground use	UL 854 Section 23 Impact-resistance test (internal tested) UL 854 Section 24 Crushing-resistance test (internal tested)

DIRECT BURIAL CONDITIONS

Allowed to be direct burial to earth that does not contain any damaging chemicals, solvents, rodents, termites etc.
Proper and correct installation methods based on VDE 0800-174 and VDE 0891-6 should be applied.
Necessary cautions should be taken to avoid physical damage of cables during installation.
It is better that installation to be in pipes/conduits/concrete channels.

CABLE MARKING

SOLEN BEAM TUV RHEINLAND EN 50618 H1Z2Z2-K EBXL 1xN mm2 1,5 kV DC / 62930 IEC 131 AD8
HALOGEN FREE LOW SMOKE SCXXXX <CE> Dca (yyyy) XX MT

*N: Cross Section *SCXXXX: Traceability Code *(yyyy): Year marking *XX MT: Meter Marking

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	DATA SHEET H1Z2Z2-K & 62930 IEC 131 (E-BEAM CROSSLINKED)	
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DIMENSIONAL PARAMETERS

PART NO.	NUMBER OF CORES	CROSS SECTIONS mm ²	CONDUCTOR DIAMETER mm	OVERALL DIAMETER mm	BENDING RADIUS (min.) mm	WEIGHT kg/km
SPV50015CL000	1	1,5	1,6	4,50 -0,2 /+0,3	22	33
SPV50025CL000	1	2,5	2,0	4,90 -0,2 /+0,3	24	41
SPV50040CL000	1	4	2,5	5,50 -0,2 /+0,3	26	57
SPV50060CL000	1	6	3,0	5,90 -0,2 /+0,3	30	73
SPV50100CL000	1	10	4,0	6,90 -0,2 /+0,3	35	114
SPV50160CL000	1	16	5,0	8,20 -0,2 /+0,3	41	174
SPV50250CL000	1	25	6,1	10,00 -0,3 /+0,5	50	260

CL refers to colour for :

Red replace RD Green/Yellow replace GY
Black replace BK Blue replace BL

ELECTRICAL PARAMETERS

PART NO.	NUMBER OF CORES	CROSS SECTIONS mm ²	CONDUCTOR RESISTANCE 20 °C ohm/km	CURRENT CARRYING CAPACITY (*) at 30 °C Ambient Temperature			SHORT CIRCUIT CURRENT (5s. From 90 °C to 280°C) kA
				Single Cable in Free Air A	Single Cable on Surface A	Two Loaded Cables Touching on Surface A	
SPV50015CL000	1	1,5	13,7	40	35	29	0,10
SPV50025CL000	1	2,5	8,21	54	47	40	0,17
SPV50040CL000	1	4	5,09	71	63	53	0,27
SPV50060CL000	1	6	3,39	90	80	68	0,41
SPV50100CL000	1	10	1,95	126	113	96	0,69
SPV50160CL000	1	16	1,24	169	153	130	1,10
SPV50250CL000	1	25	0,795	225	204	173	1,72

(*) Max. conductor temperature: 125 °C. Ambient temperature 30 °C

Calculations done according to IEC 60287-1-1 Clause 1.4.4 Cables directly exposed to solar radiation.

Maximum permitted conductor temperature of 125 °C according to IEC 60216 is limited to 20.000 h.

For reduction factor for groups of more circuits for different installation methods refer to Table B.52.17 & B.52.21 of IEC 60364-5-52

CURRENT RATING CONVERSION FACTORS FOR DIFFERENT AMBIENT TEMPERATURES

Table B.52.14 of IEC 60364-5-52

Ambient temperature	10	20	30	40	50	60	70	80
Conversion factor	1,15	1,08	1,00	0,91	0,82	0,71	0,58	0,41

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