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Photovoltaic Solar Wire Cable TUV EN 50618

Applications

PHOTOFLEX Photovoltaic Cable are designed for connecting photovoltaic system components inside and outside of buildings and equipment with high mechanical requirements and extreme weather conditions. This product type is TUV approved.

Standards

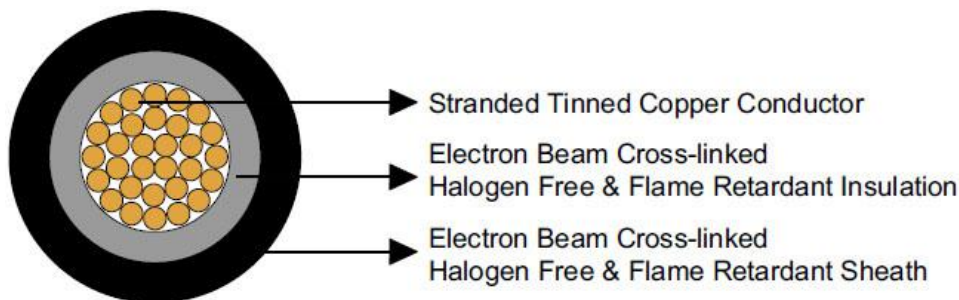
DIN EN 50618 (H1Z2Z2-K)

Certificate

TUV MARK - EN 50618



Construction



Conductor	Stranded tinned copper conductor per DIN VDE 0295 and IEC 60228 Class 5.
Insulation	Electron beam cross-linked, halogen free and flame retardant compound.
Sheath	Electron beam cross-linked, LSZH and flame retardant compound, Black.



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Electrical Properties

Rated Voltage U ₀ /U	1/1 kV AC; 1.5/1.5 kV DC
Maximum Permitted DC Voltage	1.8 kV DC (conductor/conductor, non earthed system, circuit not under load)
Insulation Resistance	1000 MΩ-km
Spark Test	6000 Vac (8400 Vdc)
Voltage Withstand	6500 Vac for 5 minElectron

Thermal Properties

Maximum Voltage	1.2KV (AC), 1.8KV (DC)
Ambient Temperature	-40°C ~ +90°C
Maximum Temperature At Conductor	120°C (20000h) according to IEC/EN 60216-1
Short Circuit Temperature	200°C/5 sec
Thermal Endurance Test	According to EN 60216-2 (temperature index +120° C)
Damp-Heat Resistance	According to EN 50618, Table 2with 85% humidity(test acc. to EN 60068-2-78)

Mechanical Properties

Minimum Bending Radius	4×OD (fixed), 5×OD (flexing)
Dynamic Penetration	According to Acc. to EN 50618, Annex D,Meets requirements of EN 50618.
Tensile Strength And Elongation Of Insulation And 250°C Jacket	
Anticipated Period Of Use	25 years



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Ovality $\leq 15\%$

Chemical Properties

Ozone Resistance According to EN 60811-403(25°C, 24h, (250 to 300) × 10⁻⁴%) ; Method B: EN 50396(40°C, 72h, 55%RH, (200 × 10⁻⁶%)

Weathering- UV Resistance (Resistance on sheath) Tensile strength and elongation at break after 720h (360 Cycles) of exposure to UV lights (acc. to EN 50289-4-17, Method A According to HD 605/A1)

Ammoniac resistant

Very good resistance to oils and chemicals

High wear and robust, abrasion resistant

EC directives

The cables conform to the EC directives CE 2006/95/EC (Low voltage directive) and RoHS 2002/95/EC (Restriction of Hazardous Substances).

Fire Performance

Flame retardant according to EN 50265-2-1, IEC 60332-1, VDE 0482-332-1-2, DIN EN 60332-1-2

Low smoke emission according to EN 61034-2 (Light Transmittance $\geq 60\%$)

Halogen free according to EN 50525-1, Annex B

Low corrosivity of gases according to EN 50267-2-2, IEC 60754-2

Dimensions and Weight

No. of Cores × Nominal	No. of Stranding	Nominal Conductor	Nominal Insulation	Nominal Sheath	Nominal Overall	Nominal Weight
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Cross Section		Diameter	Thickness	Thickness	Diameter	
No. ×mm ²		mm	mm	mm	mm	kg/km
1×1.5	30/0.25	1.58	0.70	0.80	5.4	40
1×2.5	50/0.25	2.04	0.70	0.80	5.9	50
1×4.0	56/0.30	2.59	0.70	0.80	6.6	70
1×6.0	84/0.30	3.17	0.70	0.80	7.4	80
1×10	78/0.40	4.07	0.70	0.80	8.8	130
1×16	128/0.40	5.22	0.70	0.90	10.1	200
1×25	199/0.40	6.51	0.90	1.00	12.5	290
1×35	279/0.40	7.71	0.90	1.10	14.0	400
1×50	396/0.40	9.00	1.00	1.20	16.3	550
1×70	360/0.50	10.8	1.10	1.20	18.7	750
1×95	475/0.50	12.6	1.10	1.30	20.8	970
1×120	608/0.50	14.2	1.20	1.30	22.8	1220
1×150	756/0.50	15.8	1.40	1.40	25.5	1510
1×185	925/0.50	17.4	1.60	1.60	28.5	1850
1×240	1221/0.50	20.4	1.70	1.70	32.1	2400

Current Carrying Capacity

Cross Section	AWG	Maximum Conductor Resistance at 20°C	Maximum insulation Resistance at 20°C	Maximum insulation Resistance at 90°C	Current Carrying Capacity		
					Single cable free in air	Single cable on surfaces	2 loaded cables adjacent on surfaces
mm ²	-	Ω	MΩ.km	MΩ.km	A	A	A



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1.5	16	13.7	859	0.859	30	29	24
2.5	14	8.21	691	0.691	41	39	33
4	12	5.09	579	0.579	55	52	44
6	10	3.39	499	0.499	70	67	57
10	8	1.95	424	0.424	98	93	79
16	6	1.24	342	0.342	132	125	107
25	4	0.795	339	0.339	176	167	142
35	2	0.565	287	0.287	218	207	176
50	1/0	0.393	268	0.268	276	262	221
70	2/0	0.277	247	0.247	347	330	278
95	3/0	0.210	220	0.220	416	395	333
120	4/0	0.164	211	0.211	488	464	390
150	300 kcmil	0.132	206	0.206	566	538	453
185	350 kcmil	0.108	200	0.200	644	612	515
240	450 kcmil	0.082	198	0.198	775	736	620

Conversion Factor for Deviating Temperatures

Ambient Temperature °C	Conversion Factor
Up to 60	1.00
70	0.91
80	0.82



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90

0.71

100

0.58

110

0.41

Reduction factor for accumulation according to IEC 60364-5-52, Table B.52-17