



# SOLAR CABLES

## Introduction

Our Solar cables are designed for connecting photovoltaic power supply systems. They are dedicated to the photovoltaic system direct current (D.C.) side with a nominal D.C. voltage of a 1.5kV. These cables can be used indoor & outdoor for flexible and fixed installations with high mechanical strength in extreme weather conditions. cables are designed to withstand the demanding environmental conditions that arise in any fixed, mobile, roof or architecturally integrated photovoltaic installation.

## Applications

These cables are suitable for permanent outdoor long-term use, under variable and harsh climate conditions. They are designed and tested to operate at a normal maximum conductor temperature of 90°C and for 20,000 hours up to 120°C. Therefore, the expected period use is 30 years under normal usage conditions.

## Standards

**International : 2 Pfg 1169/08.2007 OR EN 50618**

## Design

- ✓ Conductor - Flexible Electrolytic Tinned fine copper strands, acc. To IEC 60228, class 5
- ✓ Insulation - Crosslinked Halogen Free & Flame Retardant Insulation, Colour : White, Red Or Black
- ✓ Outer Sheath - Crosslinked Halogen Free & Flame Retardant UV and ozone resistant Sheath in Black Or Black with Red Stri



## Electrical Properties

- ✓ Rated DC Voltage: 1.5 kV
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- ✓ Maximum Permitted DC Voltage: 1.8 kV
- ✓ Maximum Permitted AC Voltage: 1 kV
- ✓ Spark Test: 6000 Vac (8400 Vdc)
- ✓ Voltage Withstand: 6.5 kV Ac & 15 kV dc

## Thermal Characteristics

- ✓ Ambient Temperature: -40°C ~ +90°C
- ✓ Maximum Temperature at Conductor: 120°C (20000h)
- ✓ Short Circuit Temperature: 200°C (at conductor max. 5sec)
- ✓ Thermal Endurance Test : According to EN 60216-2 (temperature index +120°C)

## Chemical Characteristics

- ✓ Mineral Oil Resistance: according to EN 60811-2-1
- ✓ Ozone Resistance: according to EN 50396 part 8.1.3 Method B
- ✓ Very good resistance to oil and chemicals
- ✓ Acid & Alkaline Resistance: According to EN 60811-2-1 (Oxal acid and sodium hydroxide)
- ✓ Weathering-UV Resistance
- ✓ Resistance to fire
  - > Acc. to EN 50618, Table 2
  - > Single Cable Flame Test: EN 60332-1-2
  - > Low Smoke Emission: EN 61034-2 (Light Transmittance > 70%)
  - > Halogen-free per EN 50525-1, Annex B.

## Mechanical Characteristics

- ✓ Minimum Bending Radius : 6 x OD (fixed), 15 x OD (occasional flexing)
- ✓ Dynamic Penetration: According to requirement of Cables for PV systems
- ✓ Tensile Strength: 6.5 N/mm<sup>2</sup> for insulation and 8 N/mm<sup>2</sup> for sheathing – according to EN60811
- ✓ Elongation of Insulation and sheathing: 125% – according to EN60811
- ✓ Shrinkage : 2% at 120°C according to EN 60811-1-3





## Product & Ratings

No. cores x Cross-sec mm <sup>2</sup>	Outer Dia approx. mm	Current Carrying Capacity @ Amb. 20 Deg.C			Conductor Resistance	Approx Cable Weight
		Single Cable in Air (Amps)	Single Cable On Surface (Amps)	Twin cables touching, on a surface (Amps)	(Max) $\Omega$ / km at 20°C	Kg/Km
2 Pfg 1169/08.2007 – PV-F						
1 x 1.5	4	30	29	24	13.3	29
1 x 2.5	4.4	41	39	33	7.98	40
1 x 4	5.2	55	52	44	5.09	54
1 x 6	5.6	70	67	57	3.39	74
1 x 10	8.1	98	93	79	1.95	117
1 x 16	10.0	132	125	107	1.24	173
BS EN 50618 – H1Z2Z2-K						
1 x 1.5	4.5	30	29	24	13.3	35
1 x 2.5	5.2	41	39	33	7.98	39
1 x 4	5.5	55	52	44	5.09	60
1 x 6	5.8	70	67	57	3.39	80
1 x 10	8.2	98	93	79	1.95	125
1 x 16	10.2	132	125	107	1.24	189
1 x 25	11.2	176	167	142	0.795	295
1 x 35	12.4	218	207	176	0.565	402
1 x 50	14.8	280	262	221	0.393	567

\*\* Higher sizes are also available upon request

