



VOKSEL KABEL



SOLAR CABLE

Driving innovation for Solar Energy Systems





Voksel Kabel believes in the effective, efficient and sustainable supply of energy and information as a primary driver in the development of communities

With this in mind, we offer major global organisations across industries with best in class cable solutions, based on state of the art of technology

In our energy business, design, produce, distribute and install cables and systems for the transmission and distribution of power at low, medium, and high voltage.

WE ENABLE PRODUCTION & SUPPLY

To meet an ever-growing need for power, the world is increasingly turning to renewable and sustainably sourced solar energy. In response to this demand, Voksel Kabel are helping business in the renewable industry globally to convert these new opportunities into reality

Our solar cables used in photovoltaic plants, are used across the renewables sector, supporting the operations of contractors and developers, grid operators, system integrators and panel makers

Always aware of our responsibility to the environment, we are constantly driving innovation in our industry, aiming to help the renewable industry deliver projects, that benefits the future of our planet and their businesses

Renewable Energy

Applicable Standard

The Construction of cables shall be based on IEC 60228 & TUV-2PFG1169

Construction Details & Materials

Item	Details & Materials
Conductor	Flexible of annealed tinned copper wires class 5, complied with IEC 60228.
Separator Tape (if necessary)	It is permitted to use a separating tape between the conductor and the insulation.
Insulation	Extruded of Black 125 °C Halogen Free Cross linked Polyolefin The average thickness of the insulation shall be not less than nominal value given in the attached table and the minimum thickness at any point shall be not fall bellow 90% of the nominal value by more than 0.1 mm.
Outer Sheath	Extruded of Black 125 °C Halogen Free Cross linked Polyolefin The average thickness of the outer sheath shall be not less than the nominal value given in the attached table and the minimum thickness at any point shall be not fall below 80% of the nominal value by more than 0.2 mm.



Cable Identification

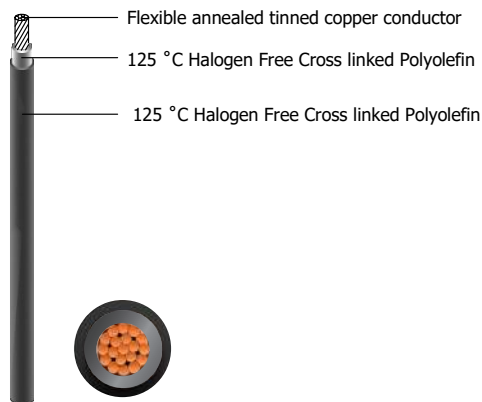
One lines of a distinctive marking shall be performed continuously on a suitable place of the surface of the outer sheath by embossing or printing

TUV 2PFG 1169 VOKSEL PV1-F 1x35 mm² 0.6/1 kV

Test

The following test shall be carried out on complete cable and sample in accordance with IEC 60228 & TUV-2PFG1169 and the manufacturer standard.

1. Construction test
2. Conductor resistance test
3. AC voltage test



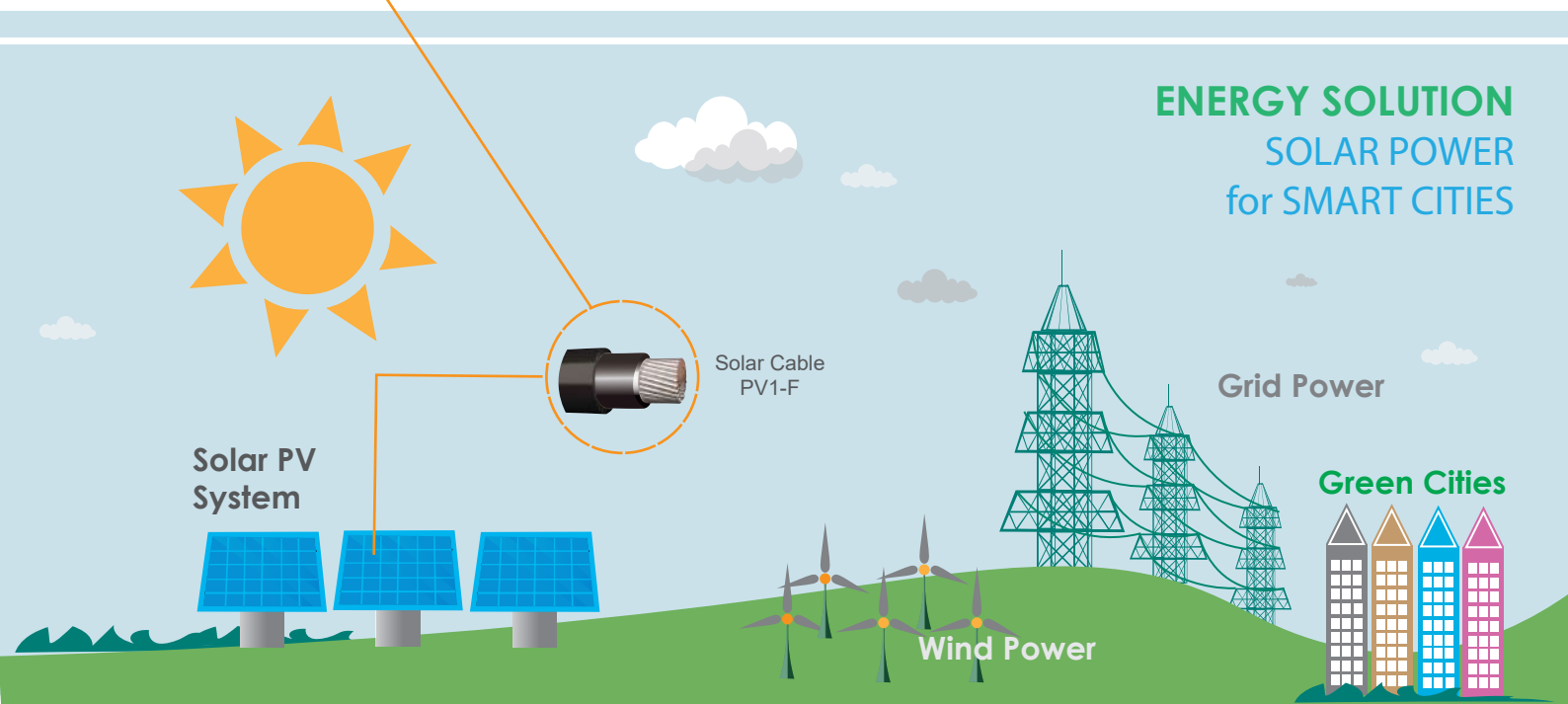
Packing

The completed cable shall be wound on a strong reel and lagged securely in order to protect from a possibilities damage during transportation.

The following information shall be provided on the outside of the flange:

1. The name of the manufacturer
2. The type, voltage grade and size of the cable
3. Cable length
4. Net & Gross weight
5. Arrow showing the direction for rolling
6. The indication of the cable and position
7. Drum number

The cable end shall be sealed with end cap in order to avoid water penetration.



ENERGY SOLUTION
SOLAR POWER
for SMART CITIES

Type of cable	Unit	Proposed & Guarantee							
<i>CONSTRUCTION DATA</i>									
Type of cable		SOLAR CABLE, (PV1-F)							
Conductor Phase									
- Material	-	Annealed tinned copper wire							
- Shape of conductor	-	Flexible Class. 5							
- Number of core	no	1	1	1	1	1	1	1	1
- Cross section area	mm ²	1.5	2.5	4	6	10	16	25	35
- Approximate overall diameter of conductor	mm	1.6	2.3	3.0	3.7	4.8	6.0	7.4	8.8
Insulation									
- Material	-	125 °C Halogen Free Cross linked Polyolefin							
- Nominal thickness	mm	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9
- Minimum thickness	mm	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
- Color	-	Black							
Outer sheath									
- Material	-	125 °C Halogen Free Cross linked Polyolefin							
- Nominal thickness	mm	0.8	0.8	0.8	0.9	1.0	1.0	1.0	1.1
- Min thickness	mm	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
- Color	-	Black							
Approx overall diameter of cable	mm	5.40	6.0	6.5	7.5	9.5	10.5	12.0	14.0
<i>ELECTRICAL DATA</i>									
Max DC resistance of conductor at 20°C	Ω/km	13.7	8.21	5.09	3.39	1.95	1.24	0.795	0.565
Current carrying capacity, Ambient temperature 60° C, Max temperature at conductor 120° C									
• Single cable free in air	A	30	41	55	70	98	132	176	218
• Single cable on surfaces	A	29	39	52	67	93	125	167	207
• To cables adjacent on surfaces	A	24	33	44	57	79	107	142	176
AC voltage test for 5 minutes	kV	6.5							
Minimum allowable bending radius of installed cables xD (Outer Diameter)	mm	6D							



VOKSEL KABEL

Executive Office

Menara Karya 3rd Floor, Suite D, Jl. HR. Rasuna Said Blok X-5 Kav 1-2,
Jakarta 2950 - Indonesia
Phone : (+62 21) 5794 4622

Factory & Operational Office

Jl. Raya Narogoong Km. 16, Cileungsi, Bogor 6820 - Indonesia
Phone : (+62 21) 8230 525, 8249 1720

Sales Service

Email : sales@voksel.co.id
Phone : (+62 21) 8249 3329