

Jeddah_{cables}
COMPANY®

SOLAR CABLES SOLERGYA®



Introduction

Jeddah Cables Company (JCC) was established in 1989 to support the distribution organization Hesham EL Sewedy Enterprise (HSE) which had been active in the Saudi market since the early of 1960s.

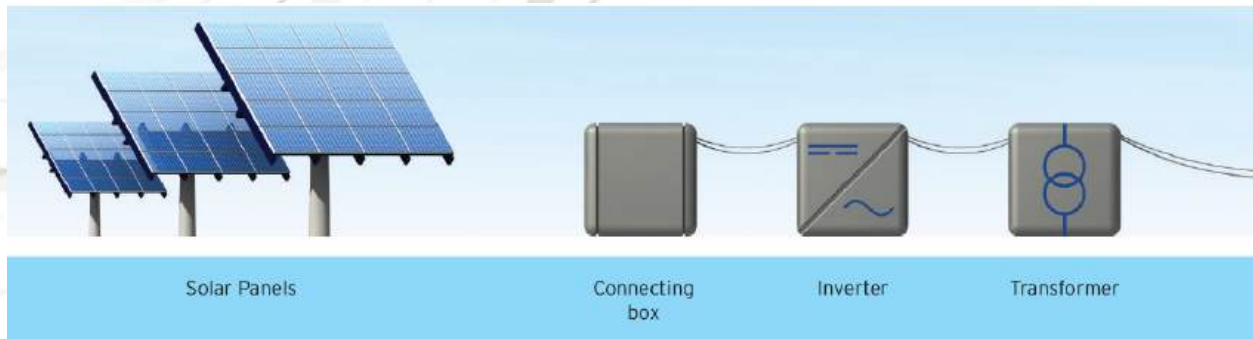
In this catalogue, we cover all technical aspects of Jeddah Cables Solar Cables (SOLERGYA®). We included design considerations such as type of insulation material, insulation thickness, sheath material and sheath thickness. Cables electrical parameters such as conductor DC resistance and current ratings are included as well.

Jeddah Cables Solar Cables (SOLERGYA®) are manufactured based on international standards such as British Standard (BS EN 50618) and German standard (2 PFG 1169/08.2007).



General Information

Solar cable is the interconnection cable used in photovoltaic power generation. These cables are intended for use in outdoor applications for the connection between the solar panels and a possible connection from those to the inverter. These cables can be also used indoor for fixed installation.



The cable's insulation and sheathing materials must be able to withstand thermal and mechanical loads. As a consequence, plastics which resistant and resistant to acids and alkaline solutions. It is suitable for fixed installation as well as for moving applications without tensile load.

The insulation and jacket materials are extremely resistant to weathering, UV-radiation and abrasion. Additionally, direct sun radiation and air humidity, but due to the halogen free flame-retardant cross-linked jacket material the cable can also be installed in dry and humid conditions indoors.

SOLAR CABLE (SOLERGYA®)

Flexible Tinned Copper Conductor, XLPO insulation and sheath – 1500 V DC

Used to interconnect photovoltaic power systems.

Applicable Standards:

- BS EN 50618:2014
- TUV 2 PFG 1169/08



Cable Construction:

Harmonized Code	: H1Z2Z2-K
Type	: Flex TCU/XLPO/XLPO
Standard	: BS EN 50618:2014 & TUV 2 PFG 1169/08
Nominal Voltage	: 1500 V DC
Conductor	: Soft annealed flexible tinned copper conductor – Class 5 as per IEC 60228
Insulation	: Extruded layer of Cross-linked Poly-Olefin (XLPO) – Halogen free
Jacket	: Extruded black layer of Cross-linked Poly-Olefin (XLPO) – Halogen free, UV and Ozone resistant, Color as per customer request

Cable Characteristics:

- Rated voltage: 1000 V AC, 1500 V DC
- Maximum permitted voltage: 1200 V AC, 1800 V DC
- Maximum operating temperature: -40° C to +90° C
- Temperature rating (20,000 h): +120° C
- Maximum short circuit temperature: 280 °C
- Flame retardancy: IEC 60332-1
- Low smoke emission: EN/IEC 61034-2
- No corrosive gases: EN/IEC 60754-2
- Resistance against acid and alkaline solution: EN 60811-2-1
- Weathering/UV resistance: BS EN 50618, Annex E
- Ozone resistance: BS EN 50618
- Bending radius: $\geq 4 \times$ Outer diameter

Technical Info:

Nominal Cross-Sectional Area	Max wire diameter	Insulation thickness	Sheath thickness	Mean overall diameter Upper limit	Approx. Overall Weight	Maximum conductor DC resistance at 20 °C	Minimum insulation resistance at 90 °C
mm ²	mm	mm	mm	mm	kg/km	Ω/km	MΩ.km
1.5	0.26	0.7	0.8	5.4	40	13.7	0.86
2.5	0.26	0.7	0.8	5.9	50	8.21	0.69
4	0.31	0.7	0.8	6.6	60	5.09	0.58
6	0.31	0.7	0.8	7.4	80	3.39	0.50
10	0.41	0.7	0.8	8.8	120	1.95	0.42
16	0.41	0.7	0.9	10.1	190	1.24	0.34
25	0.41	0.9	1.0	12.5	290	0.795	0.34
35	0.41	0.9	1.1	14.0	380	0.565	0.29
50	0.41	1.0	1.2	16.3	520	0.393	0.27
70	0.51	1.1	1.2	18.7	740	0.277	0.25
95	0.51	1.1	1.3	20.8	970	0.21	0.22
120	0.51	1.2	1.3	22.8	1200	0.164	0.21
150	0.51	1.4	1.4	25.5	1510	0.132	0.21
185	0.51	1.6	1.6	28.5	1860	0.108	0.20
240	0.51	1.7	1.7	32.1	2430	0.0817	0.20

CURRENT CARRYING CAPACITY OF SOLAR CABLES

Nominal Cross-Sectional Area	Current carrying capacity according to method of installation		
	Single cable free in air	Single cable on a surface	Two loaded cables touching, on a surface
mm ²	A	A	A
1.5	30	29	24
2.5	41	39	33
4	55	52	44
6	70	67	57
10	98	93	79
16	132	125	107
25	176	167	142
35	218	207	176
50	276	262	221
70	347	330	278
95	416	395	333
120	488	464	390
150	566	538	453
185	644	612	515
240	775	736	620

Conversion Table

Multiply by to obtain			Multiply by to obtain		
WEIGHT - Imperial			LENGTH - Imperial		
Ounces _____	28.3495	grams	Mils _____	0.001	inches
Pounds (Av) _____	453.59	grams	Mils _____	0.0254	millimeters
Pounds (Av) _____	0.45359	kilograms	Inches _____	1000	mils
Tons (short) _____	907.19	kilograms	Inches _____	25.40	millimeters
Tons (long) _____	1016.05	kilograms	Inches _____	2.54	centimeters
WEIGHT - Metric			Feet _____	30.48	centimeters
Grams _____	0.03527	ounces	Feet _____	0.3048	meters
Grams _____	0.002205	pounds	Feet (thousands of) _____	0.3048	kilometers
Kilograms _____	35.274	ounces	Yards _____	0.9144	meters
Kilograms _____	2.2046	pounds	Mils _____	1.6093	kilometers
Kilograms _____	0.001102	tons (short)	LENGTH - Imperial		
Kilograms _____	0.0009842	tons (long)	Millimeters _____	39.37	mils
MISCELLANEOUS - Imperial			Millimeters _____	0.03937	inches
Pounds per 1000 feet _____	1.48816	kilograms per kilometer	Centimeters _____	0.3937	inches
Pounds per mile _____	0.28185	kilograms per kilometer	Centimeters _____	0.032808	feet
Pounds per square inch _____	0.0007031	kilograms per square millimeter	Meters _____	39.37	inches
Pounds per square inch _____	0.07031	kilograms per square centimeter	Meters _____	3.2808	feet
Feet per second _____	18.288	meters per minute	Meters _____	1.0936	yards
Feet per second _____	1.09728	kilometers per hour	Kilometers _____	3280.83	feet
Mils per hour _____	1.60935	kilometers per hour	Kilometers _____	0.62137	mils
Ohms per 1000 feet _____	3.28083	ohms per kilometer	AREA - Imperial		
Ohms per mile _____	0.62137	ohms per kilometer	Square mils _____	1.2732	circular mills
Decibels per 1000 feet _____	3.28083	decibels per kilometer	Square mils _____	0.000001	square inches
Decibels per mile _____	0.62137	decibels per kilometer	Circular mils _____	0.7854	square mils
Decibels _____	0.1153	neper	Circular mils _____	0.000007854	square inches
MISCELLANEOUS - Metric			Circular mils _____	0.00050657	square millimeters
Kilograms per kilometer _____	0.67197	pounds per 1000 feet	Square inches _____	1000000	square mils
Kilograms per kilometer _____	3.54795	pounds per mile	Square inches _____	1273240	circular mils
Kilograms per square millimeter _____	1422.34	pounds per square inch	Square inches _____	645.16	square millimeters
Kilograms per square centimeter _____	14.2234	pounds per square inch	Square inches _____	6.4516	square centimeters
Grams per cubic cm _____	0.03613	pounds per cubic inch	Square inches _____	0.09290	square meters
Meters per minute _____	0.05468	feet per second	Square inches _____	0.8361	square meters
Kilometer per hour _____	0.91134	feet per second	AREA - Metric		
Kilometer per hour _____	0.62137	miles per hour	Square millimeters _____	1973.52	circular mills
Ohms per kilometer _____	0.3048	ohms per 1000 feet	Square millimeters _____	0.00155	square inches
Ohms per kilometer _____	1.6093	ohms per mile	Square centimeters _____	0.155	square inches
Decibels per kilometer _____	0.3048	decibels per 1000 feet	Square meters _____	10.7638	square feet
Decibels per kilometer _____	1.6093	decibels per mile	Square meters _____	1.19599	square yards
TEMPERATURE			VOLUME - Imperial		
°Fahrenheit _____	5/9 (°F) - 32	°Celsius	Cubic inches _____	16.38716	cubic centimeters
°Celsius _____	9/5 (°C) + 32	°Fahrenheit	Cubic feet _____	0.028317	cubic meters
			VOLUME - U.S.		
			Quarts (liquid) _____	0.9463	cubic centimeters
			Gallons _____	3.7854	cubic meters
			VOLUME - Metric		
			Cubic centimeters _____	0.06102	cubic inches
			Cubic meters _____	35.3145	cubic feet
			Litres _____	1.05668	quarts (Liquid U.S.)
			Litres _____	0.26417	gallons (U.S.)

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