

Ducab **دوڪاب**
Powering the Region



DucabSolarBICC



**SOLAR
CABLES**

For Solar Panel Systems

About DUCAB

Jointly-owned by the Investment Corporation of Dubai and Senaat, Ducab is a leading provider of cables and wires solutions. In addition to five UAE-based facilities, Ducab operates England-based AEI Cables UK, and Ducab Aluminium Company (DAC), a joint venture with Senaat. Ducab's cables are approved by BASEC, the Loss Prevention Certificate Board (LPCB), (TUV) and Lloyd's Register, UK.



TÜV Rheinland®

H1Z2Z2-K Cables for Photovoltaic Systems 1.5 kVDC

APPLICATIONS:

Solar cable is the interconnection cable used in photovoltaic power plants, they connect solar panels and other electrical components of a photovoltaic system. The cables are suitable to be used with class II equipment as per BS50618.

CONSTRUCTION:

CONDUCTOR

Flexible Class 5 - Tinned annealed copper to IEC 60228.

INSULATION

Cross Linked (XLPO) to BS EN 50618:2014 1.5KVDC

SHEATH

Cross Linked (XLPO) to BS EN 50618:2014.

SHEATH COLOUR

BLACK (Other Colour on request).

STANDARDS

BS EN 50618 & TUV 2 PFG 1169/08.

VOLTAGE RATING

1.5 KVDC

OPERATING TEMP

-40° C to +120° C.

No. of Cores	Conductor Area	Thickness of Insulation Specified Value	Thickness of Sheath Specified Value	Mean overall diameter (Approx)	Minimum Insulation resistance at 20°C	Minimum Insulation resistance at 90°C	Approx. Weight of Completed Cable
	(mm ²)	(mm)	(mm)	(mm)	MΩ.km	MΩ.km	(Kg/Km)
1C	1.5	0.7	0.8	5.4	860	0.86	35
1C	2.5	0.7	0.8	5.9	690	0.69	46
1C	4	0.7	0.8	6.6	580	0.58	59
1C	6	0.7	0.8	7.4	500	0.50	80
1C	10	0.7	0.8	8.8	420	0.42	120
1C	16	0.7	0.9	10.1	340	0.34	182
1C	25	0.9	1.0	12.5	340	0.34	282
1C	35	0.9	1.1	14.0	290	0.29	375
1C	50	1.0	1.2	16.3	270	0.27	520
1C	70	1.1	1.2	18.7	250	0.25	733
1C	95	1.1	1.3	20.8	220	0.22	963
1C	120	1.2	1.3	22.8	210	0.21	1196
1C	150	1.4	1.4	25.5	210	0.21	1504
1C	185	1.6	1.6	28.5	200	0.20	1851
1C	240	1.7	1.7	32.1	200	0.20	2425

ELECTRICAL DATA:

Conductor Size	DC Resistance at 20°C	Short circuit rating for 1Sec
(mm ²)	(ohm/km)	(kA)
1.5	13.7	0.19
2.5	8.21	0.32
4	5.09	0.50
6	3.39	0.75
10	1.95	1.26
16	1.24	2.02
25	0.795	3.15
35	0.565	4.42
50	0.393	6.31
70	0.277	8.84
95	0.210	11.9
120	0.164	15.2
150	0.132	18.9
185	0.108	23.3
240	0.0817	30.3

*The short circuit rating is calculated based on the condition of normal maximum operating conductor temperature of 120°C prior to short circuit and maximum conductor temperature of 250°C after the short circuit.

GENERAL INFORMATION

The following designations are used for insulation materials in this catalogue. All materials are halogen free.



The designation XLPO stands for cross-linked polyethylene compound. It has excellent mechanical and electrical characteristics.

IEC 60332-1 is the test for single insulated wire and cable. Test procedure and requirements according to the picture, below. Min. 50 mm of the cable, measured from the upper support, must remain unburned after the specified time.

Halogen-free - Halogen free refers to the absence of halogens, such as chlorine and fluorine, and is determined on the basis of halogen content and the acidity of gases of cable.

Smoke emission - Smoke emission refers to visibility in a fire. The greater the light transmittance, the better the visibility. When tested in accordance with IEC 61034-2 the minimum light transmittance shall be greater than 60%.

BSEN 50267-2-1 - Determine the halogen content of the material. To meet the requirement as halogen free the halogen content of the material may not exceed 0.5 % or 5mg/g.

BSEN 50267-2-2 - Determine the degree of acidity of gases evolved during combustion. The limit values are 4.3 for pH and 10 micorS for conductivity.

CURRENT CARRYING CAPACITY OF PV CABLES

Conductor Size (mm ²)	Current carrying capacity according to method of Installation		
	Single cable free in Air (A)	Single cable on a surface (A)	Two loaded cables touching, on a surface (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
16	132	125	107
25	176	167	142
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

CURRENT RATING CONVERSION FACTORS FOR DIFFERENT AMBIENT TEMPERATURES:

Temperature in °C	Up to 60	70	80	90
Factor	1.00	0.92	0.84	0.75

BENDING RADIUS REQUIREMENTS

Overall diameter of cable (D)	Minimum Bending Radius (Fixed Installation)
$D \leq 12$	3 D
$D \geq 12$	4 D

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