TÜV AUSTRIA

UNIVERSAL CABLES PAKISTAN

UNIVERSAL CABLES

SOLAR
XLPO CABLES

GREENER UNIVERSAL
A Greener Future

Shine Cleaner WITH GREENER

Universal Cables Industries Ltd., is one of the leading manufacturers of the biggest range of Copper, Aluminum and Aluminum Alloy cables and conductors in Pakistan in line with BS, VDE, ASTM, JIS, IEC, and other international standards.

GREENER UNIVERSAL

Now for a Greener future of Pakistan, Universal Cables is now pleased to introduce the new range of "Tinned Copper XLPO Insulated & Sheathed DC Solar Cables "to meet the needs of Residential, Industrial and Commercial requirements.

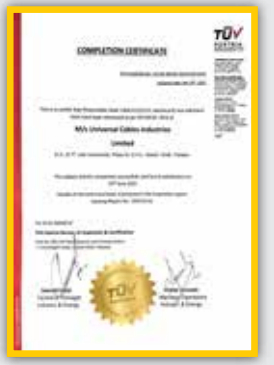
The offered range of solar cables strictly complies with BS EN 50618 standards which makes our solar DC cables most appropriate to be installed for permanent external applications.

Through our already established network of distributors and dealers with a highly visible presence across Pakistan, we will ensure our customers are well served with Universal Solar Cables.

We also assure excellent performance and its longevity even in adverse weather conditions. The quality of insulation and sheath jacket used are of Cross-linked low smoke zero halogens material with the capability of weather and UV resistance which is a durable combination to rigorously serve needs most efficiently backed by our prompt after sales service.

Our products are KEMA (Netherland) and TUV (Austria) certified and comply with international quality standards.

Having rich past experience we offer viable solutions in quality solar power cables.



GREENER UNIVERSAL
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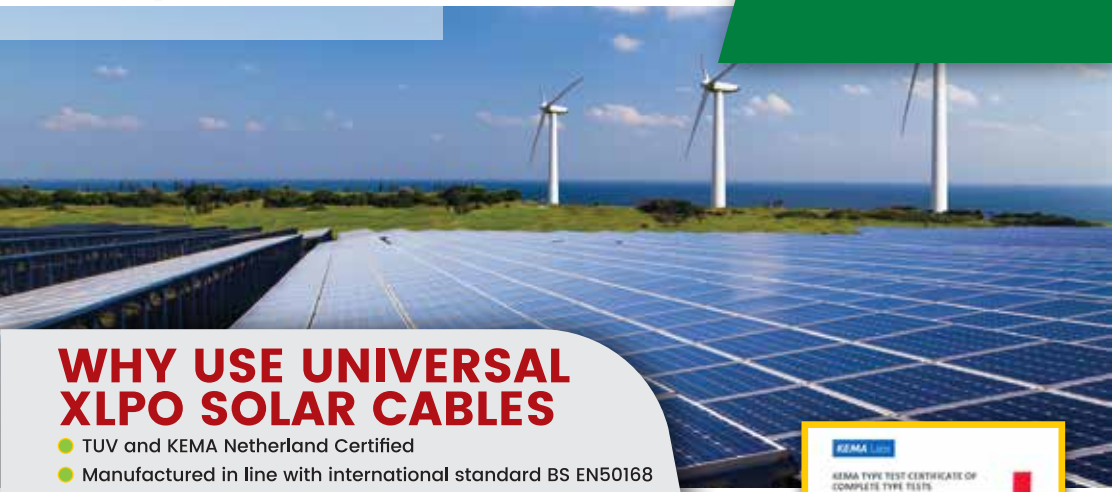
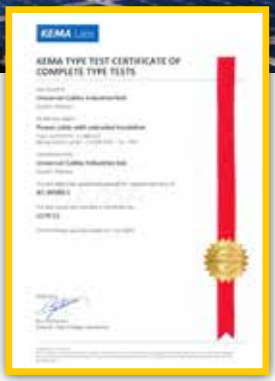


WHY USE UNIVERSAL XLPO SOLAR CABLES

- TUV and KEMA Netherland Certified
- Manufactured in line with international standard BS EN50168
- Recommended world vide for Solar net working
- Value for money
- Low Smoke
- Zero Halogen
- Heat Resistant
- UV Protected
- Long life Long Lasting
- Safe for DC Current Carrying
- Greener Environment
- Available all over Pakistan.


KEMA Labs

KEMA TYPE TEST CERTIFICATE OF COMPLETE TYPE TESTS

TECHNICAL SPECIFICATIONS:
(AS PER BS EN – 50618 : 2014)

- Operating voltage of 1.0 KVAC , 1.5 KVDC
- Maximum operating voltage of 1.1 KVAC , 1.8 KVDC
- Ambient temperature ranges from -40°C to +90°C
- Short circuit temperature is 250°C.
- Weathering-UV resistance.
- Very good resistance to oil and chemicals with acid and alkaline resistance.

CONDUCTOR

Soft annealed tin-coated flexible stranded copper as per BS EN 60228

INSULATION (XLPO)

Halogen-free thermoset polyolefin specifically designed for photovoltaic cable insulation

JACKET (XLPO)

Halogen-free thermoset polyolefin specifically designed for photovoltaic cable sheath

WHY TINNED COPPER CONDUCTOR USED IN SOLAR CABLES

Tinned copper is primarily used for protection against oxidation and corrosion. In climates where copper has long-term exposure to weather, the oxygen will combine with the metal and form copper oxide, weakening the bonds of the metal.

WHY XLPO INSULATION & SHEATHED USED IN SOLAR CABLES

XLPO has a higher nominal temperature rating of -40°C to 120°C, and XLPO insulation has excellent UV resistance, excellent flame retardancy, good chemical resistance and good durability. The cable can be installed indoor and outdoor in fixed and flexible installations., the solar cables are weatherproof and suitable for direct burial in earth.

RATED VOLTAGE

The cables are in particular designed for use at the direct current (d.c.) side of photovoltaic-systems, with a nominal d.c. voltage of 1.5 kV between conductors as well as between conductor and earth. The cables have a rated voltage of 1.0/1.0 kV when used in alternating current (a.c.) systems.

CABLE SIZE, DIMENSION AND DC RESISTANCE

Number and nominal cross sectional area of conductors	Thickness of insulation Specified value	Thickness of sheath Specified value	Mean overall diameter Upper limit informative value	Maximum resistance of conductor at at 20 oC
mm²	mm	mm	mm	Ω/km
1 x 1.5	0.7	0.8	5.4	**13.7**
1 x 2.5	0.7	0.8	5.9	**8.21**
1 x 4	0.7	0.8	6.6	**5.09**
1 x 6	0.7	0.8	7.4	**3.39**
1 x 10	0.7	0.8	8.8	**1.95**
1 x 16	0.7	0.9	10.1	**1.24**
1 x 25	0.9	1.0	12.5	**0.795**
1 x 35	0.9	1.1	14.0	**0.565**
1 x 50	1.0	1.2	16.3	**0.393**
1 x 70	1.1	1.2	18.7	**0.277**
1 x 95	1.1	1.3	20.8	**0.210**
1 x 120	1.2	1.3	22.8	**0.164**
1 x 150	1.4	1.4	25.5	**0.132**
1 x 185	1.6	1.6	28.5	**0.108**
1 x 240	1.7	1.7	32.1	**0.0817**

CURRENT CARRYING CAPACITY OF PV CABLES

Nominal Cross Sectional Area	Current Carrying Capacity According to Method of Installation		
	Single Cable Free in Air	Single Cable Free on a Surface	Two Loaded Cables touching , on a Surface
mm²	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

CURRENT RATING CONVERSION FACTOR FOR DIFFERENCE AMBIENT TEMPERATURE

Ambient Temperature °C	Conversion Factor
up to 60	1.00
70	0.92
80	0.84
90	0.75

THE POWERLINE OF PAKISTAN

UNIVERSAL CABLES

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KEMA GOLD CERTIFIED