



Underwriters
Laboratories

File E332233

Vol 1

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FOLLOW-UP SERVICE PROCEDURE
(TYPE L)

PHOTOVOLTAIC WIRE
(ZKLA)

Manufacturer: EVERTOP WIRE CABLE CORP
(364181-002) 32 LANE 363 CHUNG CHENG RD, SEC 2
CHUNG LI
TAOYUAN HSIEN 320 TAIWAN

Applicant: EVERTOP WIRE CABLE CORP
(364181-001) 1 LANE 91 REN-AI RD, SEC 2
TAIPEI TAIWAN

Listee: SAME AS APPLICANT
(364181-001)

This Procedure authorizes the above manufacturer to use the marking specified by Underwriters Laboratories Inc. (UL), or any authorized licensee of UL, only on products covered by this Procedure, in accordance with the applicable UL Services Agreement.

The prescribed Mark or Marking shall be used only at the above manufacturing location on such products which comply with this Procedure and any other applicable requirements.

The Procedure contains information for the use of the above named Manufacturer and representatives of Underwriters Laboratories Inc. and is not to be used for any other purpose. It is lent to the Manufacturer with the understanding that it is not to be copied, either wholly or in part, and that it will be returned to Underwriters Laboratories Inc. (UL) or any authorized licensee of UL, upon request.

This PROCEDURE, and any subsequent revision, is the property of Underwriters Laboratories Inc. (UL) and the authorized licensee of UL and is not transferable.

Underwriters Laboratories Inc.

Stephen Hewson
Senior Vice President
Global Follow-Up Service Operations

William R. Carney
Director
North American Certification Program

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SPECIAL INSTRUCTIONS FOR PV WIRE

UL REPRESENTATIVE:

Once each month, select 20 ft of PV wire, mark them with "for monthly small scale flame test", and send them to the Melville office.

Once each quarter, select 45 ft of PV wire, mark them with "for quarterly testing", and send them to the Melville office.

Annually, select 10 ft of PV wire, mark them "for annual sunlight resistance test", and send them to the Melville office.

At each visit, conduct the following tests. The examination and tests shall be conducted with the apparatus and according to the methods described in the latest edition of Underwriters Laboratories Inc.'s Standard for Service-Entrance Cables, UL 854, and the Subject 854 Follow-Up and Inspection Instructions.

- Detailed Examination
- Physical Properties of the Jacket - Unaged only
- Physical Properties of the Insulation - Unaged only
- Dielectric Voltage Withstand Test, Per the Standard for Service-Entrance Cables, UL 854. In lieu of the Dielectric Voltage Withstand Test, the Spark Test may be conducted per UL 44.

CAS DEPARTMENT:

Conduct the following tests per Outline of Investigation for Photovoltaic Wire, Subject 4703, on samples received from the UL Representative:

- Detailed Examination
- Physical Properties of the Insulation - Unaged and after aging
- Vertical Flame Test
- Sunlight Resistance Test - Conducted annually
- Flexibility Test at Low Temperature
- Durability of Indelible-Ink Printing
- VW-1 Flame Test, if marked "VW-1"
- Horizontal/FT2 Flame, if marked "VW-1"

GENERAL

PRODUCT COVERED:

Photovoltaic Wire.

Type PV wire.

FACTORY LOCATION AND IDENTIFICATION:

Location	Identification
364181-002	-
Taoyuan, Taiwan	

LISTING MARK COMPOSITION:

**LISTED**

PHOTOVOLTAIC WIRE

MARKING:

On the Wire - A durable surface marking shall include the following:

1. Listee and Factory Identification - The Listee's name, or "E332233".
2. "PV Wire" or "Photovoltaic Wire".
3. Size of conductor in AWG.
4. Dry and wet temperature rating.
5. Voltage Rating.
6. "Sunlight Resistant" or "Sun Res".
7. "-40C".
8. UL logo consisting of the letters "UL", in a circle or in parentheses,

i.e.  or "(UL)".

On the Tag, Reel, or Carton - The tag markings shall include the surface markings required above, items 1 - 7. In addition, the following information is required:

1. Date of manufacture by month and year.
2. "Photovoltaic module interconnection wire for use with or without a raceway in accordance with Wiring Systems, Article 690 in the National Electrical Code (NEC), NFPA 70".
3. Nominal outside diameter.

DESCRIPTION

PRODUCT COVERED:

Photovoltaic Wire, Type PV.

GENERAL CHARACTER AND USE:

This is a single-conductor, sunlight resistant, photovoltaic wire rated 90°C wet or dry, 600 V, for interconnection wiring of grounded and ungrounded photovoltaic power systems described in Section 690 and other applicable parts of the National Electrical Code (NEC), NFPA 70.

CONSTRUCTION DETAILS:

General - The cable covered by this Report is constructed in accordance with the requirements of the Underwriters Laboratories Inc. Subject 4703 Outline of Investigation for Photovoltaic Wire, and as shown below.

Conductor - Stranded copper conductors, Size 18 - 4/0 AWG, in accordance with Type USE-2 in the Standard for Service-Entrance Cables, UL 854, except that 18 and 16 AWG meet the requirements in Section 6 of the Standard for Fixture Wire, UL 66.

Insulation - XLPE Insulation Compound Pexidan X/T-UV2 manufactured by Padanaplast USA Inc., in all colors. Insulation thickness in accordance with the following tables:

600 V construction without jacket:

AWG Size of Conductor	Minimum Average Thickness, mils	Minimum Thickness at any Point, mils
18 - 10	60	54
9 - 2	75	68
1 - 4/0	95	86

MARKING:

In accordance with the Section General.

OPTIONAL MARKING:

Wire may be marked "VW-1".