SUNKEAN

CERTIFICATE OF WARRANTY

SUPPLIER: SUNKEAN CABLE CO., LTD.
ADDRESS: 17-9 SOUTH CHANGJIANG ROAD, XINWU DISTRICT, WUXI, CHINA.

BUYER: ANH DUONG VIETNAM ENERGY COMPANY LIMITED
ADDRESS: NO. 16TT4, FORESA 4 STREET, XUAN PHUONG TASCO URBAN, XUAN PHUONG WARD, NAM TU LIEM DISTRICT, HANOI CAPITAL, VIETNAM.
Tax Code: 0109423532

We, SUNKEAN,

Hereby confirm that the products listed under below invoice number are 100% brand new and fully comply with standards stipulated in the signed contract and relevant technical documents.
The service life of our solar cables is 25 years, with 10 years warranty provided in accordance with our official warranty policy and the user manual. (Document No. SJ-GL-QA10)

INVOICE NO.: A31-250715

Item		Description	Qty	Unit
1	1x 4MM2-B	62930 IEC131/H1Z2Z2-K 1×4mm² (Black) 1000m/drum	80,000	m
2	1x 4MM2-R	62930 IEC131/H1Z2Z2-K 1×4mm² (Red) 1000m/drum	80,000	m
3	1x 4MM2-B	62930 IEC131/H1Z2Z2-K 1×4mm² (Black) 200m/roll	35,200	m
4	1x 4MM2-R	62930 IEC131/H1Z2Z2-K 1×4mm² (Red) 200m/roll	35,000	m
5	1x 4MM2-B	62930 IEC131/H1Z2Z2-K 1×4mm² (Black) 100m/roll	20,800	m
6	1x 4MM2-R	62930 IEC131/H1Z2Z2-K 1×4mm² (Red) 100m/roll	20,800	m

SUNKEAN CABLE CO., LTD.
15th August 2025

WARRANTY CERTIFICATE

Sunkean Cable Co., Ltd. and its affiliates (hereinafter referred to as "SKE") hereby provide this warranty certificate for photovoltaic cables (hereinafter referred to as the "Product") sold by SKE. Within the scope of application as specified in the product usage manual, SKE guarantees that the product meets the performance specifications described in the technical data sheet. The warranty period is **ten (10) years**, commencing from the date of ex-factory.

During the warranty period, if the product is confirmed by SKE to have a quality issue caused by its own design or manufacturing, SKE shall repair or replace the product with the same specification. If the product has been discontinued, a product of equivalent value or functionality may be provided. The replaced product will inherit the remaining warranty rights and the warranty period shall still be calculated from the original product's ex-factory date.

1. Warranty Resolution

1.1 Warranty Claim

a) The customer is responsible for proving any quality issues. If a customer suspects a quality issue, they must notify SKE within 15 working days and provide the following:

1. Customer information, usage environment, method, and operating conditions;

2. Detailed description of the product issue;

3. Photos or test reports of the defective product;

4. Model and quantity of the affected product;

5. Proof of purchase and warranty start date.

Failure to provide the information above or if the information is unclear, incomplete, or inaccurate, SKE reserves the right to refuse to process the claim. (On-site inspection by SKE may be conducted if necessary.)

b) Regardless of the terms of this warranty, for issues already addressed by SKE prior to a warranty transfer, or for claims already resolved for the original beneficiary, SKE will not be liable for repeated compensation to the successor or its authorized transferee.

1.2 Warranty Actions & Exclusions

a) SKE may choose one of the following remedies:

1. Repair the defective product;

2. Replace the defective product.

b) Exclusions from warranty coverage include:

1. Unauthorized modification, repair, or alteration;

2. Relocation or reinstallation to a different site;

3. Misuse, negligence, improper handling or application during transport, storage, installation, or service (not caused by SKE);

4. Damage caused by surges, lightning, fire, flooding, natural disasters, war, sabotage, accidents, or other force majeure events;

5. Exposure to corrosive substances or saltwater, pest or rodent damage (unless specified by the customer);

6. Operation beyond rated voltage or current;

7. Use not complying with the usage manual, data sheet, or relevant laws and regulations.

2. Additional Provisions

This warranty applies to the original purchaser, its successors, or authorized transferees.

SKE is not liable for any personal injury, property loss, or other indirect damages.

Unless otherwise specified in the sales contract, this warranty automatically expires upon the end of the warranty period.

SKE reserves the right to final interpretation and revision of this document without prior notice.

Product Usage Manual for Photovoltaic (PV) Cables

1. Application Scope

Manufactured per standards such as 2PfG, EN50618, IEC62930, UL/C(UL), these cables are used:

For string connection between PV modules;

For parallel connection between strings and to DC combiner boxes;

From combiner boxes to inverters;

Also suitable for AC connections between inverters and grid.

Applicable to systems rated AC 1000V or DC 1500V, suitable for underground, conduit, tray, overhead, floating, or angled installations (≤ 45°). Can withstand moderate mechanical damage and radial force.

Custom PV cables for specific environments (e.g., anti rodent & termite, flame resistant, waterproof) are available.

2. Operating Conditions

1. Maximum rated conductor temperature: **90°C**.

2. Maximum conductor temperature during short-circuit: **250°C for 5 seconds**.

3. Installation methods: Direct burial, conduit, cable trench, floating on water, underwater, or overhead (cable tray).

4. Minimum bending radius during operation: **6D** (D = cable outer diameter).

5. Ambient temperature range: **-40°C to 90°C**.

6. Minimum operating ambient temperature: **-40°C**.

7. Minimum installation ambient temperature: **0°C**.

1.

3. Cable Selection, Installation, and Environmental Conditions

3.1 Cable Models, Voltages, and Cross-Sections

Table 1: Common Cable Models, Voltages, and Cross-Sections

Model	Standard	Core number	Rated Voltage (V)	Nominal Cross-Section (mm²)
H1Z2Z2-K	EN50618	1	DC: 1500	1.5–240
62930 IEC131	IEC62930	1	DC: 1500	1.5–400
PV1500-WR	2PfG2750	1	DC: 1500	1.5–400
PV1500-SWR	2PfG2962	1	DC: 1500	1.5–400
PV2000-K	2PfG2954	1	DC: 2000	1.5–240
PV2000-AL-K	2PfG2954	1	DC: 2000	2.5–400
PV2000-AL	2PfG2954	1	DC: 2000	10–400
PV2000DC(TC5)	PPP 58209A	1	DC: 2000	2.5–240
PV2000DC(TCA5)	PPP 58209A	1	DC: 2000	2.5–240
PV1500DC-AL-K	2PfG2642	1–2	DC: 1500	2.5–400
PV1500DC-AL	2PfG2642	1–2	DC: 1500	10–400
PV1500DC-AL-K-DB	2PfG2642	1–2	DC: 1500	2.5–400
PV1500DC-AL-DB	2PfG2642	1–2	DC: 1500	10–400
PV/RPVU90	UL4703/CSA C22.2 No.271	1	1000 or 2000	Copper: 18AWG–2000kcmil Aluminum: 12AWG–2000kcmil

Note: Models, voltage ratings, or specifications not listed in Table 1 are also covered by this manual.

3.2 Suitable Installation Methods

Table 2: Suitable Installation Methods

Model	In Air	Conduit	Cable Tray	Hanging	Direct Burial	On Water
H1Z2Z2-K	√	√	√	×	×	×
62930 IEC131	√	√	√	×	×	×
PV1500-WR	√	√	√	×	×	√
PV1500-SWR	√	√	√	×	×	√
PV2000-K	√	√	√	×	×	×
PV2000-AL-K	√	√	√	×	×	×
PV2000-AL	√	√	√	×	×	×
PV2000DC(TC5)	√	√	√	×	×	×
PV2000DC(TCA5)	√	√	√	×	×	×
PV1500DC-AL-K	√	√	√	×	×	×
PV1500DC-AL	√	√	√	×	×	×
PV1500DC-AL-K-DB	√	√	√	√	√	×
PV1500DC-AL-DB	√	√	√	√	√	×
PV/RPVU90	√	√	√	×	√	×

Note:

① "√" indicates compliance; "×" indicates non-compliance.

② All photovoltaic cables can be directly buried after being installed in conduits.

3.3 Applicable Environments

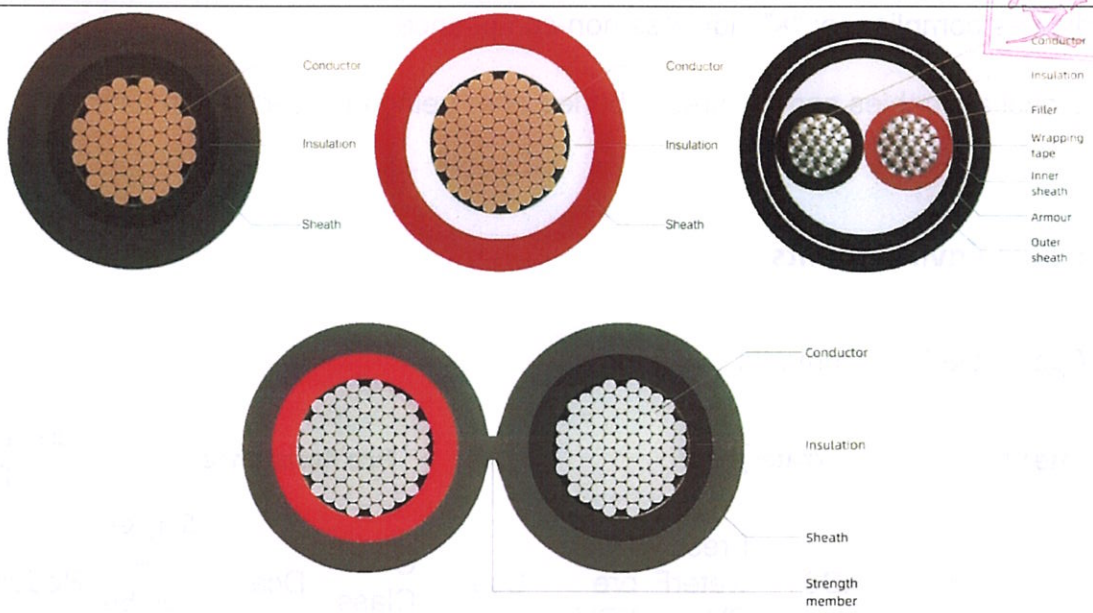
Table 3: Applicable Environments

Environment	Waterproof					Fire Resistance			Anti Rodent & Termite	
	AD7	AD8	Fresh waterFPV	Offsh-ore FPV	Cca	C-Class	Dca	Single-Core Combustion	Rodent	Termites
Normal PV Cable	√	×	×	×	×	×	√	√	×	×
AD7 PV Cable	√	×	√	×	×	×	√	√	×	×
AD8 PV Cable	√	√	√	×	×	×	√	√	×	×
Fresh water Floating PV Cable	√	×	√	×	×	×	√	√	×	×
Offshore Floating PV Cable	√	√	√	√	×	×	√	√	×	×
Cca Fire-Resistant PV Cable	√	×	×	×	√	√	√	√	×	×
C-Class Fire-Resistant PV Cable	√	×	×	×	×	√	√	√	×	×
Dca Fire-Resistant PV Cable	√	×	×	×	×	×	√	√	×	×
Chemical AT-AR PV Cable	√	×	×	×	×	×	√	√	√	√
Nylon AT-AR PV Cable	√	×	√	×	×	×	√	√	√	√
Shielded ATAR PV Cable	√	×	×	×	×	√	√	√	√	√

Note:

1. "√" indicates compliance; "×" indicates non-compliance.
2. Special photovoltaic cables can be customized to meet specific environmental requirements.

4.Typical Cable Structures



5. Cable Transportation and Storage

1. During transportation and handling, avoid damaging the cable or cable drum. Handle with care to prevent damage.
2. Do not drop cable drums from a height. Secure drums properly during transport to prevent collisions or tipping.
3. Before transporting or rolling a cable drum, ensure it is secure and the cable is tightly wound. Roll in the direction indicated by the arrow on the drum or the cable's outer end.
4. Store cables in an organized manner with clear labeling of model, voltage, specification, and length. Ensure storage areas have clear passageways, firm ground (with padding if necessary), and no water accumulation.
5. Protect cables from sun exposure, rain, high temperatures, and maintain intact packaging, clear labels, and secure end seals during storage. Address any issues promptly.
6. Cables may be packaged in drums or coils. Drum-packaged cables must be sealed reliably, with protruding ends not exceeding 300mm and protected with appropriate covers. Coiled cables must be securely wrapped with strong banding materials.

6. Cable Installation and Laying

1. When cutting cables, secure both ends (60–80mm from the cutting point) with wire to prevent sheath loosening. Seal cut ends with heat-shrink caps.
2. Minimum bending radius: Non-armored cables ≥ **10D**; armored cables ≥ **15D** (D = cable outer diameter).
3. Installation temperature should not be below **0°C**. Preheat cables if the temperature is below **5°C**.
4. Ensure uniform tension during laying to avoid twisting, which may cause conductor or insulation cracks and lead to breakdown.
5. Use dedicated connectors and tools for cable terminations, following international electrical construction standards.
6. If mechanical damage is found during installation, remove or repair the affected section before use to ensure safety.
7. For direct burial, prevent water ingress or moisture absorption, especially at cable ends.
8. Before laying, ensure:

   ①Clear cable channels, good drainage, and adequate tunnel lighting/ventilation.

②Cable model, voltage, and specifications meet design requirements.

③No visible damage or compromised insulation. Check for water ingress or moisture and dry or remove affected sections if necessary.

④Use a stable cable reel stand matched to the drum's weight and width. Avoid vertical unwinding.

⑤Calculate cable lengths based on design and actual paths to minimize joints.

⑥Implement safety measures when laying cables in live areas.

9. Before installation, ensure cable trenches, trays, conduits, or direct burial paths are clean and unobstructed. Avoid construction work after cable laying.
10. For conduit installations, ensure pipes are free of perforations, cracks, or significant unevenness, with smooth inner walls and no severe corrosion for metal pipes. Use sufficiently strong pipes in areas prone to mechanical stress.
11. Conduit requirements: Pipe ends should be free of burrs or sharp edges and flared to avoid cable damage.
12. During laying, draw cables from the top of the drum, avoiding friction with supports or the ground.
13. Correct unwinding: Use a horizontal reel stand with bearings, following the drum's outer end direction. Avoid vertical unwinding to prevent crushing or breaking.

Figure - Cable laying methods in cable construction