



Photovoltaic Cable 2000 V Specs

Photovoltaic Cable 2000 V for Connecting PV modules

PV wire 2000 Volts is certified ul 4703 which is the best option for the wiring of solar panel systems.
We offer High Quality Photovoltaic cable made in North America by a finest wire and cable manufacturing plant.

Product Specifications:

Photovoltaic Cable 2000 Volts

Gage Sizes Available 10 AWG, 12 AWG

Solar Power Cable (PV Wire) USE-2 RHH/RHW-2

Certification UL 4703 also listed as Type per UL44

Construction: Copper 19 Strand Conductor, XLPE Insulation

Maximum operating voltage: 2000 V

Maximum conductor operation temperatures: -40 to 90 °C wet and dry

Single Conductor Cable types permitted in exposed outdoor locations in PV Source circuits:

PV Wire (Listed and labeled)

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Different names for PV wire are: **PV Wire, PV Cable, Photovoltaic Wire, Photovoltaic Cable**

PV Source circuit single conductor Cable in outdoor locations must be installed in accordance with 338.10(B)(4)(b) and 334.30 NEC

338.10(B)(4)(b) is Installation Methods for Branch Circuits and Feeders/Exterior Installations and tells us that wiring should be installed in accordance with Part I of Article 225 and should be supported in accordance with 334.30. We are also told to comply with Part II of Article 340.



USE-2 and PV Wire

USE-2 and PV Wire are the two most common wiring methods for connecting PV modules to each other and to connecting PV Modules to anything else. These wiring methods are commonly installed under PV modules and do get exposed to sunlight. It is interesting that USE stands for Underground Service Entrance and has properties and has been tested for exposure to sunlight. Not usually much sunlight underground.

PV Wire may be better than USE-2 and has been tested with more UV light.

PV wire is often the wire of choice of PV module manufacturers, since it is acceptable everywhere in the world and with every version of the NEC

PV wire is colored black and red. Black is the color of carbon black which is a pigment that helps with UV resistance. This is also why black cable ties are more UV resistant. When sourcing black cable ties, use Nylon 6 cable ties when contacting everything except galvanized steel. Nylon 12 is necessary for any cable ties contacting galvanized steel.

Some installers use red wire to indicate a positive conductor.

Our PV Wire is also rated RHW-2 since it has to pass all the same tests as RHW-2. This rating also allows conductor to be installed inside buildings. USE-2 if not rated RHW-2 or XHHW-2 is not permitted to be installed indoors because it may not have been tested for the required fire ratings for indoor wiring.

690.31(C)(2) single conductor cable/cable tray

PV wire with or without a cable tray rating shall be permitted in cable trays outdoors.

PV wire shall be supported in cable trays every 12 inches and secured every 4 1/2 feet.

12 AWG satisfies the requirement of the NEC Code. It is interesting to note that the conditions of use rated wire is 11A and we can round that up to 15A and have an 11A wire protected by a 15A overcurrent protection device. We have buffer of protection built into our wires that will let us deny common sense and round up a wire's ability to carry current.

Would we use a 12 AWG wire? We think we would use a 10 AWG Wire just to be safe and simple. We do not want to push our luck.

Voltage Drop

When it comes down to voltage drop, what we really want to know is how much money our wire will save for us if we invest more money in the wire. There still be complex calculations, which would have to include tilt, azimuth, soiling, PV to inverter ration and weather. In order to perform complex software and perhaps to hire a team of engineers.

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