SOLAR CABLES

The new PV standard AS/NZS 5033:2012 was implemented June 2012. This Standard requires cables used on PV Installations to be:

- Flexible (multi-stranded).
- For LV string cables be qualified to PV1-F requirements.
- Recommends tinned copper to reduce degradation of the cables over time.

TPS cables complying with AS/NZ 5000 series are not suitable for this application.

Prysmian PV1-F flexible PV cables have it covered:

- Conductor – Electrolytic tinned copper class 5 in accordance with IEC 60228 for better durability and better conductivity over the life of the PV unit.
- Electron-Beam Cross-Linked Material (Two-layer-Insulation) – makes it both flexible and resistant to UV, no safety risk when needing to remove the PV panels for maintenance, due to old brittle cables. (Cables installed at rear of panels are still deemed to be exposed to UV due to reflection).
- Fire Retardant, Halogen-free per IEC 60754-1 & Low Smoke Emission per IEC 61034 – safety first, no toxic PVC gases in the event of a fire.
- Environmentally Friendly – complies with RoHS directives 2002/95/EG.
- Ambient Temperature from -40°C to +120°C for fixed flexible installation – can be used in Australia and New Zealand's harshest environments.
- Ozone Resistant per DIN EN 50396.
- UV-Resistant to ISO 4892-2 Standard – will last the life of the UV panel. Note even where the cable is not directly exposed to Sunlight is still must comply with AS/NZS 5033:2012 if connected to the PV panel.
- Acid and Alkaline Resistant (N-Oxalic Acid, N-Sodium Hydroxide) per EN 60811-2-1.
- Abrasion Resistant – Meets DIN EN 53516 – it's tough and unlikely to be damaged during installation or during maintenance of the panel.
- Easier installation due to extraordinary flexibility and smaller outer diameter.
- Easy Strip – Prysmian Cable Engineers have specially designed the solar cable to strip easily. Easy stripping improves speed of insulation and safety.
- Improved sizing – Fits two 4 mm² solar cables into a 25 mm conduit.

Application

The cable is designed and manufactured according to standard 2 Pfg 1169/08.2007 for use in solar plant distribution systems.

Product codes:

4 mm² single	5749083
4 mm² twin	5749045
6 mm² single	5749090
6 mm² twin	5749069

Other sizes made to order. Colours available on request in either SDI or twin: Red, blue.

Drum and length

- Drum: Black PVC drum
- Length: 100 metres per drum

Construction

4 mm² twin Solar cable		
	Item	Specification
Conductor	Cross-section area (mm²)	4 mm²
	Material	Stranded tinned copper
	Size (mm)	56/(0.30±0.008)
	Strand OD (mm)	2.59±0.01
Insulation	Material	Electron-beam cross-linked materials
	Nominal OD (mm)	4.45±0.15
	Colour	One red, one black
Sheath	Material	Electron-beam cross-linked materials
	Nominal OD (mm)	5.8±0.10 x 12.00±0.20
	Colour	Black
Marking on cable	"PRYSMIAN SOLAR CABLE (PV) PV1-F 4 mm² 0.6/1KVAC -- 0.9/1.8KVDC -- FOR DC USE ONLY DO NOT DISCONNECT UNDER LOAD -- 120°C SOLAR DV TUV Cert No R (Metre marking)" Spread over the length of a metre in between metre markings	

Technical data

Nominal voltage	Test voltage	Temperature rating	Ambient temperature	
U°/U=600/1000V AC, 1800V DC	6500 V, 50 Hz, 5 min	-40°C up to +125°C	(-40°C up to +120°C): >25 years	

Max. conductor temperature	Bending radius	Conductor resistance	Insulation resistance	UV resistant
+120°C	≥ 6 x cable OD	≤ 5.09 Ω / km at 20°C	≥ 1014 Ω .cm at 20°C	>720h

Fire performance: IEC60332-1

Smoke density: IEC61034, EN50268-2

Halogen acid gas emission: IEC60754-1, EN50267-2-1

Certificate: TUV