



Key Attributes

Engineering Excellence

The Specialty Group’s Large Format Photovoltaic Roof Sheet is the perfect combination of superior technology and design.

Advanced Aesthetics

Sleek, dark green/ grey trapezoidal profile panel provides an elegant appearance that blends beautifully with your building’s architecture.

Efficiency

Stabilised power output and high performance in high temperature, low light and angled light conditions.

Durable

Strong, yet light, glass reinforced polymer backing structure provides weatherproofing and long life.

Environment Friendly

TSG Solar Roofing Panel does not contain any hazardous levels of toxic chemicals and metals, and does not require expensive end-of-life recycling provisions.

Proven Technology

Both the photovoltaic laminate and the backing structure made of glass reinforced polymer (GRP) have been used for over 25 years in outdoor applications.

Product Warranty

Five years limited product warranty.
Limited power output warranty: 90% at 10 years, 80% at 25 years (of minimum power).

Photovoltaic Module Certifications

- UL 1703 listed by Underwriters Laboratories® for electrical and fire safety (Class A) for use in systems up to 600 V_{DC}.
- IEC 61646 and IEC 61370 certified by TÜV Rheinland for use in Class A photovoltaic systems up to 1000 V_{DC}.
- Clean Energy Council (CEC) listed.
- RoHS Compliant (lead free).

Applications

- Commercial, Industrial and Residential rooftop installation.
- Roof-parallel and flat-roof installation.
- Ground mounted installation.
- Grid-tied and off-grid photovoltaic systems.

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Clean Energy Council



QUALIFYING TEST CONDITIONS AND APPLICABLE STANDARDS

Early Fire Hazard	Radiant heat	AS 1530.3
Concentrated Load	250kg mass	AS 4040.1
Static and Cyclic Wind Loading	Over 2000Pa	AS 4040.2 AS 4040.3
Sandbag Impact Resistance	25kg sandbag dropped from 2.5m	AS 4040.4
Hailstone Impact Resistance	25mm diameter at 23m/s	AS/NZS 4257.6
Windborne Debris Impact	Wood projectile 50mm×100mm	AS 1170.2
Moisture Absorption	85% RH, 85°C, 400 hours	ASTM D5229
Resistance to Freeze/ Thaw	-40°C to +85°C, 10 cycles	AS 4046.6
Colourfastness Resistance to UV	Exposed samples	AS/NZS 4257.7
GRP Mechanical Properties	Before and after UV light exposure	AS 4256.3 ASTM D790
Outdoor Weathering	Various Australian climate conditions	AS 1745.1
Peel Adhesion Resistance	Up to 4N/mm	ASTM D3330
Electrical Insulation	Dielectric strength	ASTM D149-09
Temperature Cycling	-40°C to +85°C, 200 cycles	IEC 61646

Preliminary datasheet. Due to continuous research and product development the information in this technical data sheet are subject to change without notice. For installation and operation instructions, see the installation manuals. No rights can be derived from this product information sheet and The Specialty Group assumes no liability whatsoever connected to or resulting from the use of any information contained herein.

ELECTRICAL PERFORMANCE

Parameter	At STC	At NOCT
Maximum Power (P_{MPP})	200 W	145 W
Voltage at P_{MPP} (V_{MPP})	35.7 V	32.8 V
Current at P_{MPP} (I_{MPP})	5.6 A	5.5 A
Short-circuit Current (I_{SC})	6.4 A	6.3 A
Open-circuit Voltage (V_{OC})	46.6 V	43.4 V
Series Fuse Rating	10 A	10 A
Limiting Reverse Current (I_R)	10 A	10 A
Tolerance of Maximum Power		±7%
Maximum System (DC) Voltage		1000 V

The abbreviations: MPP – Maximum Power Point
 STC – Standard Test Conditions
 NOCT – Nominal Operating Cell Temperature

STC: 1000 W/m², AM 1.5, 25°C cell temperature

NOCT: 800 W/m², AM 1.5, 46°C cell temperature, 1m/s wind

Note: During the first 10 weeks of operation electrical output exceeds specified ratings. Power output may be higher by 15%, operating voltage may be higher by 11%, and operating current may be higher by 14%.

OPERATING CONDITIONS

Temperature range	-40°C to +85°C
Roof requirements	3.5° to 60° Slope
Maximum Load	3000 Pa (high wind areas)
Impact performance	Resistance against hail & free fall body
Cyclone areas	Up to C2 Wind Class (Regions C & D)
Fire performance	Class 2 to Class 9 Buildings (BCA)

MECHANICAL CHARACTERISTICS

Dimensions (L × W × H)	2600 × 1200 × 40.5 [mm]
Weight	19.4 kg
Solar Cells	72 CIGS cells (210×100 mm)
Cell Layout	36 cells in series per module 2 modules in series per panel
Output Cables	12 AWG (4mm ²) positive & negative, 480mm long each
Connectors	SOLARLOK™ MC4 Locking
Junction Box	IP66 terminal housing (SOLARLOK™)
Bypass Diodes	Two at each cell, one at junction box
Front Surface	Durable ETFE high light-transmissive polymer
Back Structure	Gel coated glass reinforced polymer
Mounting System	Through the panel peaks using standard roofing fasteners
Temperature Coefficients	See system installation manual

Current & Power vs. Voltage at NOCT

