



SOLbond Rail

- *PV solution with frameless crystalline module and glass reinforced plastic rail system*
- *Quick and simple installation*
- *Minimum static rooftop load – module weight less than 10 kg/m²*
- *Made in Germany*



TCK
Solar



SOLbond – In the never-ending pursuit of innovation, TCK Solar have recently released SOLbond from SOLON: the German-engineered and manufactured ultrathin solar panel system. Defying previous standards of possibility, SOLbond condenses all the power of TCK Solar into a revolutionary system that is only as thin as the glass. Despite being the thinnest panel yet, SOLbond is packed full of features:

Light As A Feather

Designed for all flat trapezoidal and composite roofs (3-15 degrees pitch), the lightweight panels are ideal for areas with low load-bearing reserves. The team of German engineers at SOLON have achieved a system weight of only 10kg/m², making SOLbond a work of pure genius.

Flawlessly Functional

Super lightweight, ultrathin, and in true TCK Solar elegant style, the SOLbond panel system produces sleek solar power solutions, whilst taking nothing away from the architectural style of the building. Frameless and neat, your property will always look spectacular.

Powerful As Ever

Using a unique glass-reinforced-plastic (GRP) rail system, the frameless panels are easily installed within a matter of hours. Producing much more power than could be expected of a unit so streamline, the SOLbond panels maintain a high power density of up to 155 Wp/m². Requiring half the energy to manufacture, the SOLbond panels recoup the energy it took to produce them in only eight months.

Safe & Sound

A symmetrical rail system allows for even weight dispersal across the roof, consequently protecting the structural soundness of the building. German engineered adhesive solutions make the systems immune to high winds and even snowfall, certified under European standards and approved by the Clean Energy Council (CEC).

Guaranteed Across The Board

SOLbond is accompanied by a 10-year product guarantee, up to 25-year adhesive bond warranty, and five-stage performance guarantee over 25 years.



Simple installation

1. Attach adhesive pads to high beadings
2. Put the plastic rail on the adhesive pads and rivet it to the roof
3. Apply adhesive pads to the rails
4. Apply adhesive bead to the rails, place the modules – finished!

Thermal Benefits

Recent studies have shed light on the fact that flat photovoltaic (PV) arrays, such as SOLbond panels, have substantial thermal benefits, reducing the amount of heat reaching the roof by about 38%. They maintain cooler temperatures under the roof during warm periods, and keep warmth in during cool nights.

SOLON SOLbond – High-performance system components

SOLON Black 280/12 (monocrystalline)

Electrical data – typical (STC)



STC (Standard Test Conditions): 1,000 W/m², (25 ± 2)°C, AM 1.5 in accordance with EN 60904-3

Power rating	P_{max}	310 Wp ¹⁾	305 Wp ¹⁾	300 Wp	295 Wp	290 Wp	285 Wp	280 Wp
Module efficiency		15.66 %	15.40 %	15.15 %	14.90 %	14.65 %	14.55 %	14.29 %
Rated voltage	V_{mpp}	36.43 V	36.22 V	36.00 V	35.80 V	35.60 V	35.40 V	35.20 V
Rated current	I_{mpp}	8.55 A	8.45 A	8.36 A	8.26 A	8.16 A	8.06 A	7.96 A
Open circuit voltage	V_{oc}	45.24 V	44.98 V	44.77 V	44.50 V	44.23 V	43.96 V	43.69 V
Short circuit current	I_{sc}	8.86 A	8.79 A	8.74 A	8.66 A	8.59 A	8.51 A	8.44 A
Maximum reverse current	I_R	20 A	20 A	20 A	20 A	20 A	20 A	20 A
Maximum system voltage		1,000 V	1,000 V	1,000 V	1,000 V	1,000 V	1,000 V	1,000 V

Measuring tolerance for P_{max} : ± 3 %

Reduction of module efficiency from 1,000 W/m² to 200 W/m²: < 4 %

Electrical data – typical (NOTC)

NOCT (Nominal Operating Cell Temperature): 800 W/m², NOCT, AM 1.5

Power rating	P_{max}	222 Wp	219 Wp	215 Wp	212 Wp	208 Wp	204 Wp	201 Wp
Rated voltage	V_{mpp}	32.65 V	32.47 V	32.27 V	32.09 V	31.91 V	31.73 V	31.55 V
Rated current	I_{mpp}	6.81 A	6.74 A	6.67 A	6.59 A	6.52 A	6.44 A	6.36 A
Open circuit voltage	V_{oc}	40.89 V	40.65 V	40.46 V	40.22 V	39.98 V	39.73 V	39.49 V
Short circuit current	I_{sc}	7.15 A	7.10 A	7.06 A	6.99 A	6.94 A	6.87 A	6.81 A

Thermal data

Tc of open circuit voltage		- 0.33 %/K
Tc of short circuit current		0.04 %/K
Tc of power		- 0.43 %/K
NOCT (according to IEC 61215)		48 °C ± 2 °C

Measuring tolerance for all final data: ± 10 % (except P_{max} (STC) and NOCT)

SOLON Blue 270/12 (polycrystalline)

Electrical data – typical (STC)



STC (Standard Test Conditions): 1,000 W/m², (25 ± 2)°C, AM 1.5 in accordance with EN 60904-3

Power rating	P_{max}	300 Wp ¹⁾	295 Wp	290 Wp	285 Wp	280 Wp	275 Wp	270 Wp	265 Wp
Module efficiency		15.15 %	14.90 %	14.65 %	14.39 %	14.29 %	14.04 %	13.78 %	13.53 %
Rated voltage	V_{mpp}	37.03 V	36.77 V	36.50 V	36.25 V	35.95 V	35.70 V	35.45 V	35.18 V
Rated current	I_{mpp}	8.12 A	8.04 A	7.95 A	7.86 A	7.78 A	7.70 A	7.61 A	7.53 A
Open circuit voltage	V_{oc}	44.98 V	44.76 V	44.53 V	44.30 V	44.08 V	43.85 V	43.62 V	43.40 V
Short circuit current	I_{sc}	8.46 A	8.39 A	8.33 A	8.27 A	8.20 A	8.14 A	8.08 A	8.02 A
Maximum reverse current	I_R	20 A	20 A	20 A	20 A	20 A	20 A	20 A	20 A
Maximum system voltage		1,000 V	1,000 V	1,000 V	1,000 V	1,000 V	1,000 V	1,000 V	1,000 V

Measuring tolerance for P_{max} : ± 3 %

Reduction of module efficiency from 1,000 W/m² to 200 W/m²: < 5 %

Electrical data – typical (NOTC)

NOCT (Nominal Operating Cell Temperature): 800 W/m², NOCT, AM 1.5

Power rating	P_{max}	218 Wp	215 Wp	211 Wp	207 Wp	204 Wp	200 Wp	197 Wp	193 Wp
Rated voltage	V_{mpp}	33.70 V	33.46 V	33.22 V	32.99 V	32.72 V	32.49 V	32.26 V	32.01 V
Rated current	I_{mpp}	6.48 A	6.42 A	6.36 A	6.29 A	6.23 A	6.16 A	6.09 A	6.03 A
Open circuit voltage	V_{oc}	41.07 V	40.87 V	40.66 V	40.45 V	40.25 V	40.04 V	39.83 V	39.63 V
Short circuit current	I_{sc}	6.87 A	6.81 A	6.76 A	6.71 A	6.66 A	6.61 A	6.56 A	6.51 A

Thermal data

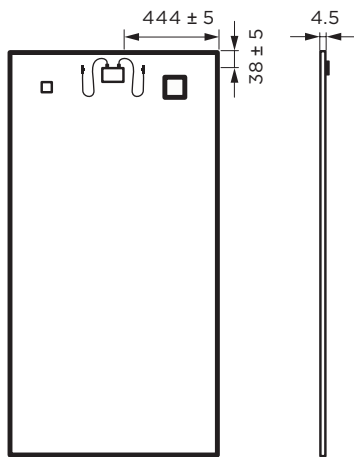
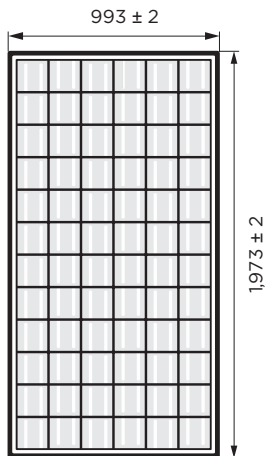
Tc of open circuit voltage		- 0.32 %/K
Tc of short circuit current		0.05 %/K
Tc of power		- 0.41 %/K
NOCT (according to IEC 61215)		46 °C ± 2 °C

Measuring tolerance for all final data: ± 10 % (except P_{max} (STC) and NOCT)

¹⁾ Available in limited amounts upon request.

SOLON SOLbond Rail

SOLON Black 280/12 and SOLON Blue 270/12



Dimensions in mm

Mechanical specifications module

Dimensions (H x W x D)	1,973 x 993 x 4.5 mm
Weight	19.5 kg
Junction box	1 box with 3 bypass diodes
Cable	Solar cable, length 1,000 mm, 4 mm ² , prefabricated with MC4-combinable plug
Application class	Class A at IEC 61730
Front glass	Transparent toughened safety glass, 3.2 mm
Solar cells	72 cells, mono- or polycrystalline Si 6.2" (156 x 156 mm)
Cell encapsulation	EVA (Ethylene Vinyl Acetate)
Back side	Composite film

Assembly rail

Material	GRP (Class E23 after DIN 13706)
Dimension (H x W x D)	2,000 x 25 x 9.7 mm

Permissible operating conditions

Temperature range	-40°C to +85°C
Maximum surface load capacity	Tested up to 2,400 Pa according to IEC 61215
Resistance against hail	Maximum diameter of 25 mm with impact speed of 83 km/h

Operating conditions

Permissible roof pitch	3 - 15°
Trapezoidal sheet thickness (min.)	0.5 mm
Static proof (DIN 1055)	Steel frame must permit additional load of SOLON SOLbond Rail of 11 kg/m ²

Guarantees and certifications

Product guarantee	10 years ²⁾
Performance guarantee	Guaranteed output of 95 % for 5 years, 90 % for 10 years, 87 % for 15 years, 83 % for 20 years and 80 % for 25 years ²⁾
Approvals and certificates	IEC 61215 Edition II, IEC 61730 (incl. Safety Class II), IEC 62716 (Ammonia resistance), IEC 68-2-52 (Salt mist resistance), MCS

Sikasil® SG-20

Container size	600 ml
Chemical basis	1-component silicone, moisture-curing
Cross-link type	Neutral
Working temperature	+5°C to +40°C
Use	-40°C to +150°C
Hardening time	6 days (at 23° C and 50 % air humidity)
Approvals and certificates	Fulfils requirements of EOTA ETAG 002, EN 13022, ASTM C 1184
Warranty	20 years warranty on adhesive bonding ³⁾

This datasheet complies with the requirements of EN 50380:2003. Subject to modifications and omissions. Electrical data without guarantee.

²⁾ According to SOLON Product and Performance Guarantee.

³⁾ According to SOLON SOLbond Rail Terms and Conditions of Warranty and Guarantee. Valid for roofs approved by SOLON.



- Qualified, IEC 61215
- Safety tested, IEC 61730
- Ammonia resistance tested
- Periodic Inspection



CEC Approved



For more information on SOLON products please visit www.tcksolar.com.au

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