

Certificate number	16660 Rev.0	Replaces	-
Issued	21/09/2020	First edition	21/09/2020
Report number	IN0000436	Expiry date	20/09/2025
Page	1 of 1	Contract number	IN0000470

Product Certificate Solar Thermal Products

License holder:	Solimpeks Enerji San. Ve Tic. A.Ş. Fevzi Çakmak Mh. 10753. Sk. No: 3-3A Karatay/Konya, Turkey
Production site(s):	Solimpeks Enerji San. Ve Tic. A.Ş. Fevzi Çakmak Mh. 10753. Sk. No: 3-3A Karatay/Konya, Turkey
Product	Solar thermal collector
Model(s):	EXCELLENT 2.6

Kiwa Cermet Italia hereby declares that the product can be considered complying to the testing requirements and is entitled to use the Solar Keymark Label, based upon the following aspects:

Laboratory testing of the solar thermal products, which are performed by an accredited laboratory in accordance to ISO/IEC 17025 -see annex-, using the following standards:

- EN 12975-1:2006+A1:2010
Thermal solar systems and components - Solar collectors – Part 1: General requirements
- ISO 9806:2017
Solar Energy – Solar Thermal Collectors – Test Methods

Specific CEN Keymark Scheme Rules for Solar Thermal Products SKN_N0444R3.

Periodic Inspection of the Factory site(s) performed by Kiwa Cermet Italia.

A description of the test results is given in the annex to this certificate.

This certificate is issued in accordance with the Kiwa Cermet Italia regulations.

Publication of the certificate is allowed.

The validity of this certificate is subject to the positive result of periodic surveillance visits.

The validity of this certificate can be verified on request at the following e-mail address: energy@kiwacermet.it.

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Annex to Solar Keymark Certificate Supplementary Information	Licence Number	16660 Rev.0
	Issued	2020-09-21

Annual collector output in kWh/collector at mean fluid temperature ϑ_m													
Collector name	Standard Locations ϑ_m	Athens			Davos			Stockholm			Würzburg		
		25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C
EXCELLENT 2.6		3.290	2.475		2.598	1.854		1.889	1.290		2.052	1.401	
Annual output per m ² gross area		1.268	954	--	1.001	715	--	728	497	--	791	540	--
Annual efficiency, η_a		72%	54%	--	61%	44%	--	62%	43%	--	64%	43%	--
Fixed or tracking collector	Fixed (slope = latitude - 15°; rounded to nearest 5°)												
Annual irradiation on collector plane		1765 kWh/m ²			1630 kWh/m ²			1166 kWh/m ²			1244 kWh/m ²		
Mean annual ambient air temperature		18,5°C			3,2°C			7,5°C			9,0°C		
Collector orientation or tracking mode		South, 25°			South, 30°			South, 45°			South, 35°		
The collector is operated at constant temperature ϑ_m (mean of in- and outlet temperatures). The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool Scenocalc Ver. 6.1 (September 2019). A detailed description of the calculations is available at http://www.estif.org/solarkeymarknew/													

Additional Information			
Collector heat transfer medium	Water-Glycole		
The collector is deemed to be suitable for roof integration	No		
The collector was tested successfully under the following conditions:			
Climate class (A+, A, B or C)			A
G (W/m ²) >	1000	ϑ_a (°C) >	20
		H_x (MJ/m ²) >	600
Maximum tested positive load			2500 Pa
Maximum tested negative load			2000 Pa
Hail resistance using steel ball (maximum drop height)			0,6 m
Additional collector attribute(s)			
<input type="checkbox"/> Using external power source(s) for normal operation	<input type="checkbox"/> Active or passive measure(s) for self-protection		
<input type="checkbox"/> Co-generating thermal and electrical power	<input type="checkbox"/> Façade collector(s)		

Energy Labelling Information		Additional Informative Technical Data	
	Reference Area, A_{sol} (m ²)	Hydraulic Designation Code	Aperture Area, A_a (m ²)
EXCELLENT 2.6	2,59	{F}-{O}-{CL}-{A:Ø,L}-{C:Ø,L}-{D}	2,36
Data required for CDR (EU) No 811/2013 - Reference Area A_{sol}		Data required for CDR (EU) No 812/2013 - Reference Area A_{sol}	
Collector efficiency (η_{col})	63%	Zero-loss efficiency (η_0)	0,78
Remark: Collector efficiency (η_{col}) is defined in CDR (EU) No 811/2013 as collector efficiency of the solar collector at a temperature difference between the solar collector and the surrounding air of 40 K and a global solar irradiance of 1000 W/m ² , expressed in % and rounded to the nearest integer. Deviating from the regulation η_{col} is based on reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806:2017.		First-order coefficient (a_1)	2,79 W/(m ² K)
		Second-order coefficient (a_2)	0,023 W/(m ² K ²)
		Incidence angle modifier IAM (50°)	1,00
		Remark: The data given in this section are related to collector reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806. Consistent data sets for either aperture or gross area can be used in calculations like in the regulation 811 and 812 and simulation programs.	