

# Keymark Certificate

## Solar thermal energy



078/000034

AENOR, Spanish Association for Standardization and Certification, certifies that the organization

### TERMICOL ENERGIA SOLAR, S.L.

with head office in: PI LA ISLA - CL RIO VIEJO, 39 41703 DOS HERMANAS (Sevilla - España)

supplies: Solar collectors

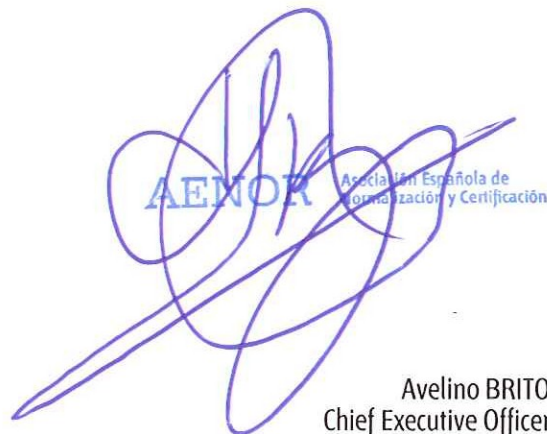
in compliance with: UNE-EN 12975-1:2006 (EN 12975-1:2006)  
UNE-EN 12975-2:2006 (EN 12975-2:2006)

References: Specified in Annex to the Certificate

Production site: PI LA ISLA - CL RIO VIEJO, 39 41703 DOS HERMANAS (Sevilla - España)

Certification scheme: In order to grant this Certificate, AENOR has tested the product and has verified the quality system implemented for its manufacture. AENOR performs these tasks periodically while the Certificate has not been cancelled, in accordance with Specific Rules RP 78.01

Issued on: 2012-03-29  
Validity date: 2017-03-29



AENOR Asociación Española de Normalización y Certificación

Avelino BRITO  
Chief Executive Officer

**AENOR** Asociación Española de Normalización y Certificación

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# AENOR Product Certificate

## Solar thermal collectors

Annex 1/1



Summary of EN 12975 Test Results, annex to Solar KEYMARK Certificate						Licence number		078/000034				
						Date of issue		29/03/2012				
Company holding the licence			TERMICOL ENERGÍA SOLAR, S.L			Country		Spain				
Brand (optional)						Website		<a href="http://www.termicol.es">www.termicol.es</a>				
Street, number			C/RIO VIEJO,39			E-mail		<a href="mailto:ingenieria@termicol.es">ingenieria@termicol.es</a>				
Postal Code			41703			Tel.		+34		954930545		
City			DOS HERMANAS, SEVILLA			Fax		+34		954960563		
Collector Type (flat plate / evacuate tubular / un-glazed)						Flat plate collector						
Integration <u>in</u> the roof possible ?						No						
Collector name	Aperture area (Aa) [m <sup>2</sup> ]	Gross length [mm]	Gross width [mm]	Gross height [mm]	Gross area (Ag) [m <sup>2</sup> ]	Power output per collector unit G = 1000 W/m <sup>2</sup> Tm-Ta :						
						0 K [W]	10 K [W]	30 K [W]	50 K [W]	70 K [W]		
T25PS	2.36	2.130	1.204	85	2.56	1652,9	1349,2	1003,6				
T25PSH	2.35	1.200	2.130	83	2,54	1652,9	1349,2	1003,6				
T20PSH	1.89	970	2.130	83	2,02	1325,4	1058,6	780,61				
T20PS	1.88	2.130	974	85	2.07	1325,4	1058,6	780,61				
Collector efficiency parameters related to <u>aperture area (Aa)</u>						$\eta_{0a}$		0,77		-		
Type of fluid and flow rate see note 1						$a_{1a}$		6,80		W/(m <sup>2</sup> K)		
						$a_{2a}$		0,007		W/(m <sup>2</sup> K <sup>2</sup> )		
Stagnation temperature - Weather conditions see note 2						$t_{stg}$		98,7		°C		
Effective thermal capacity						$C_{eff} = C/Aa$		5,77		kJ/(m <sup>2</sup> K)		
Max. operation pressure - see note 3						$p_{max}$		900		kPa		
Incidence angle modifiers $K_0(\theta)$	$G_{DIF}/G_{TOT}$		$\theta_T / \theta_L$	50°	10°	20°	30°	40°	60°	70°		
	min	max									$K_0(\theta_T)$	0,83
$G_{DIF}/G_{TOT}$ : min&max - while measuring					0,12		0,17		$K_0(\theta_L)$		0,83	
						<i>Optional values</i>						
Testing Laboratory						INTA						
Website						<a href="http://www.inta.es">www.inta.es</a>						
Test report id. number						CA/RPT/4451/001/INTA/12						
Date of test report						23/02/2012						
Perf. test method						EN 12975-2 6.1.4 (outdoor)						
Comments of testing laboratory :												
Note 1	Fluid	Water		Flow rate	0,020 kg/s per m <sup>2</sup>							
Note 2	Irradiance, $G_s=1000$ W/m <sup>2</sup> ; Ambient temperature , $T_a=30$ °C											
Note 3	Given by manufacturer											

VERSION 3.6, 2012.01.20