

REGIONAL TEST CENTRE (SOLAR THERMAL)

School of Energy, Environment and Natural Resources

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GOVERNMENT OF INDIA**

TEST REPORT

As per IS 12933 (Part 1) : 2003

Together with amendments

No. 1 of June 2005,

No. 2 of August 2007 &

No. 3 of May 2013

BIS CODE NUMBER
Not Applicable

REPORT NUMBER
928

DATE
02.01.2014

Checked by

Research Associate
Dr. Tennyson Daniel

Authorized Signatory
Dr. C. GOPINATHAN
PRINCIPAL INVESTIGATOR

REGIONAL SOLAR ENERGY TESTING CENTRE
Madurai Kamaraj University
MADURAI-625 021



REPORT NUMBER : 928

As per IS 12933 (Part 1) : 2003



1. PARTICULARS OF SAMPLE RECEIVED

- a) Nature of sample : Solar collector
 b) Grade / Variety / Type / Glass /etc. : Flat plate type
 c) Declared value, if any : Not applicable
 d) BIS code number : Not applicable
 e) Batch number and date of manufacture : Not applicable
 f) Quality and mode of packing : Crate packed with EPS sheet
 g) Date of receipt of sample : 24.06.2013
 h) BIS seal : Not applicable
 i) IO's signature : Not applicable
 j) Any other information : Nil
 k) Date of commencement of tests : 25.06.2013
 l) Date of completion of tests : 30.12.2013
- m) Name and address of manufacturer : M/s. Focusun Energy Systems
 Old No. 27, New No. 30
 Jaganathan Nagar
 Opp CMC, Avinashi Road
 Coimbatore - 641 014
- n) Serial No. : 0107
 o) Country of manufacture : India*
 p) Maximum working pressure in kPa : 245 kPa*
 q) Standard mark details, if present : Nil

2. CHARACTERISTICS OF COVER PLATE

(Section 1 of Part 2)

Tests	Specified requirements	Results
Cover plate	Cover plate shall be fixed with the collector box through gasket which could provide an effective sealant against water and dust between the collector box and cover	Cover plate is fixed with the collector box through gasket which could provide an effective sealant against water and dust between the collector box and cover
Material appearance	Single piece glass Tempered / toughened	Toughened*
General appearance of glass	Free from bubbles and rough surface	Free from bubbles and rough surface
Transmittance test	82% (Min)	83%
Environmental condition: Test carried out on a clear sunny day and near solar noon		
Impact resistance test (5.7 of Part 5)	Glass broken or cracked/ did not break or crack	Did not break or crack

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Research Associate



- * All instruments used for testing are traceable to national standards through reference standards and their calibrations are valid
 * Results presented in this report relate only to the item mentioned and tested at RTC, Madurai
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3. CHARACTERISTICS OF COLLECTOR BOX

(Section 2 of Part 2)

Tests	Specified requirements	Results
Material appearance	Al / fibre glass / CRCA / GS / HRC	Aluminium*
Thickness (in mm)	Al - channel section for sides : 1.4 (Min)	1.4
	Sheet for bottom : 0.45 (Min)	0.47
	Support for glass retaining : 1.2 (Min)	1.3
	Sheet for entire body : 1.0 (Min)	Not applicable
	Fibre glass : 3.0	Not applicable
	GS / SS : 0.80	Not applicable
	CRCA / HRC : 0.91	Not applicable
Size (in mm)	May be 1860 x 1240 x 100 / 2120 x 1040 x 100 / 2050 x 930 x 100 for size a, b, c respectively with a tolerance of ± 10	2029 x 1029 x 97 (Other size)
Workmanship and finish (appearance) (7 of Part 2)	Surface shall be smooth / free from roughness / raised spots / scale / any other defects	Surface is smooth, free from roughness, raised spots, scale and other defects
	Sharp edges / corners shall be rounded off	No sharp Edges
Corrosion resistance coating (appearance) (7.2 of Part 2)	Only for CRCA or HRC boxes both sides	Not applicable
Resistance to abrasion (appearance) (7.3 of Part 2)	Examine for scratch jigged edges and penetration	Not applicable
Fabrication (appearance)	Al : 8.1 of Part 2 Fibre glass : 8.2 of Part 2 CRCA/HRC/GS/ any other : 8.3 of Part 2	Screw joints are leak proof

Checked by

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