



भारतीय मानक ब्यूरो

(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)

BUREAU OF INDIAN STANDARDS

(Ministry of Consumer Affairs, Food & Public Distribution, Govt. of India)

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Review Document

Basic Details

1.	Sectional Committee No. & Title:	MED 4 - Renewable Energy Sources
2.	IS No :	IS 12933 : Part 2 : 2003
3.	Title :	Solar flat plate collector - Specification: Part 2 components (Second Revision)
4.	Date of Previous Review:	January, 2019

Review Analysis

5.1 Status of standard(s), if any from which assistance had been drawn in the formulation of this IS.

S.No.	Standard (No.)	Standard (Title)	Whether the standard has since been revised	Major changes	Action proposed
1	-	-	-	-	-

5.2 Status of standard referred in the IS.

S.No.	Referred standards (No.)	Referred standards (Title)	Since revised IS no. of the corresponding IS	Changes in the referred Standards since last review of IS	Changes in the referred standard which are affecting the standard under review	Action proposed
1	277 : 1992	Galvanized steel sheets (plain and corrugated) (fifth revision)	Revision in 2018 (Seventh revision)	Eight new grades of structural steel have been included.	-	Update with revised standard
2	12934: 1990	Solar energy -Thermal applications & Vocabulary	No revision	Withdrawn	-	reference
3	513 : 1994	Cold-rolled low carbon steel sheets and strips (fourth revision)	Revision in 2016 (Sixth revision)	a) Non-ageing characteristics have been modified; b) Tables for chemical composition, variation in product analysis and mechanical properties are changed as per new designations and grades.	-	Update with revised standard
4	733: 1983	Specification for wrought aluminium and aluminium alloy bars, rods and sections for general engineering purposes (third revision)	No revision	No any	-	No action required
5	737: 1986	Specification for wrought aluminium and aluminium alloy sheet and strip for general engineering purposes (third revision)	Revision in 2008 (Fourth revision)	Ten new Grades 19002,24530,26388,31200,3 1500B, 52300, 52300B, 65028, 74538 and 76528 have been added.	-	Update with revised standard
6	1079 : 1994	Hot rolled carbon steel sheets and strips (fifth revision)	Revision in 2017 (Seventh revision)	Chemical composition has been modified for HR0 grade and chemical compositions for new grades are added. Permissible variation for product analysis also modified;	-	Update with revised standard
7	1573 : 1986	Specification for electroplated coatings of zinc on iron and steel(second revision)	No revision	No any	-	No action required
8	2553 (Part 1) : 1990	Safety glass - Specification Part 1 : General purpose (third revision)	Revision in 2018 (Fourth revision)	a) Requirements for thickness and dimensional tolerances have been modified; b) Squareness has been added as a new requirement; and c) A modified sampling methodology has also been incorporated.	-	Update with revised standard
9	3346: 1980	Method of the determination of thermal conductivity of thermal insulation materials (two slab guarded hot plate method) (first revision)	No revision	No any	-	No action required
10	5116 : 1996	Domestic and commercial equipment for use with LPG-General requirements (third revision)	Revision in 2020 (Fourth revision)	Technically revised	-	Update with revised standard
11	10192:1982	Synthetic resin bonded glass fibre (SRBGF) sheets for electrical purposes	No revision	No any	-	No action required
12	12933 (Part 5) : 2003	Solar flat plate collector- Specification: Part 5 Test methods (second revision)	No revision	No any	-	No action required

5.3 Any other standards available related to the subject & scope of the standard being reviewed (International/regional/other national/association/consortia, etc or of new or revision of existing Indian Standard).

S.No.	Standard (No.)	Standard (Title)	Provisions that could be relevant while reviewing the IS	Action proposed
1	ISO 22975-3:2014	Solar energy α Collector components and materials α Part 3: Absorber surface durability	Absorber surface , IS 12933 Part 2	The committee may review
2	ISO 22975-2:2016	Solar energy α Collector components and materials α Part 2: Heat-pipes for solar thermal application α Durability and performance	Pipe for thermal application, IS 12933 Part 2	The committee may review

5.4 Technical comments on the standard received, if any.

S.No.	Source	Clause of IS	Comment	Action proposed
No entry made in this table				

5.5 Information available on relevant technical developments

S.No.	Source	Development	Relevant clause of the IS under review that is likely to be impacted (Clause & IS No.)	Action proposed
1	Committee Member	ISO 9806, Clause 6.2.2	Clause 9.2.1 - Test pressure should be 1.5 times the maximum operating collector pressure, IS 12933 Part 2	The committee may review
2	Committee Member	During the last meeting it was agreed that in Cl. 9.2.1 (Static Pressure Leakage test) a line derived from ISO 9806 'Test pressure should be 1.5 times the maximum operating collector pressure.' is to be incorporated, however maximum operating collector pressure is not defined in IS/ISO 9488 and this standard as well and needs to therefore be defined.	Cl. 9.2.1 (Static Pressure Leakage test)	The committee may review
3	Committee Member	IS 12934 has been superseded by IS/ISO 9488 wherein definitions for test pressure, design pressure, collector pressure have not been specified, however these terms have been used in IS 12933 Part 2 and hence need to be defined in this standard.	Clause 3 Terminology	The committee may review
4	Committee Member	Recommended to add the following in IS12933(part 2) 6.1 (d) Galvanized steel sheets conforming to IS 277, continuously pre painted Galvanized steel sheets conforming to IS 14246, which will add the aesthetic look of the bottom sheet with collector frame.	Clause 6.1 (d)	The committee may review
5	Research Papers	https://www.nrel.gov/docs/fy16osti/66215.pdf	IS 12933 Part 2	The committee may review

5.6 Issues arising out of changes in any related IS or due to formulation of new Indian Standard.

S.No.	Related IS (revised or new)	Related IS Title	Provision in the IS under review that would be impacted & the clause no. or addition of new clause/provision	Changes that may be necessary in the Standards under review	Action proposed
No entry made in this table					

5.7 Any consequential changes to be considered in other IS.

S.No.	Related IS to get impacted	Related IS Title	Requirements to be impacted
1	IS 12933 : Part 1-2003	Solar flat plate collector - Specification: Part 1 requirements (Second Revision)	Clause 4 - Components
2	IS 12976-1990	Solar water heating systems - Code of practice	Clauses 4.1 Solar collector and 7- System performance evaluation method
3	IS 13129 : Part 1-1991	Solar heating - Domestic water heating systems: Part 1 performance rating procedure using indoor test methods	Clause 3.15 9.3.1 Separate Test for the Solar Collector
4	IS 13129 : Part 2-1991	Solar heating - Domestic water heating systems: Part 2 procedure for system performance characterization and yearly performance prediction	Clause 6.2 Preliminary Evaluation
5	IS 13129 : Part 3-1991	Solar heating - Domestic water heating systems: Part 3 procedures for system component characterization and - Prediction for yearly performance using component performance data	Clause 7.1 System Component Characterization by Testing Component Separately (Step 1, Option A)

Other Details

6.	Any other observation:	Collectors without cover with synthetic absorbers tend to have very steep performance curves. With no glass having outstanding optical performance, they quickly lose their performance when the ambient temperature is below the working temperature or high wind speed.
7.	Upload Supporting Document(s)	
	7.1 ARP Report	68_4405_220912045338_ARP_Report.docx
	7.2 Draft Document	68_4405_231114105919_Draft_Document.pdf
8.	Recommendations - On the basis of the analysis of the info available as mentioned above consideration of sectional committee is solicited on the following aspects of the IS under review:	The committee may take up a revision of the standard.