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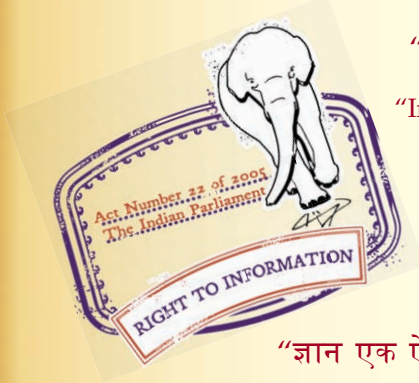
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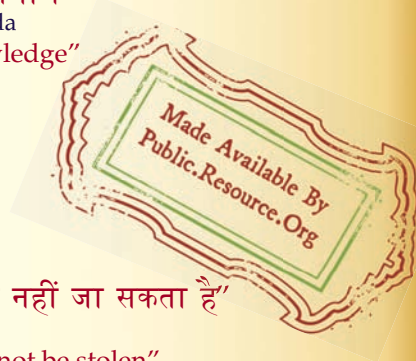
IS 7638 (1999): Wood/Lignocellulosic Based Panel Products - Methods of Sampling [CED 20: Wood and other Lignocellulosic products]



“ज्ञान से एक नये भारत का निर्माण”

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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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भारतीय मानक
काष्ठ/लिग्नासेल्युलोज आधारित पैनल उत्पाद -
नमूने लेने की पद्धतियाँ
(दूसरा पुनरीक्षण)

Indian Standard
WOOD/LIGNOCELLULOSIC BASED PANEL
PRODUCTS — METHODS OF SAMPLING
(*Second Revision*)

ICS 79.060.10;79.060.20

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BUREAU OF INDIAN STANDARDS
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**AMENDMENT NO. 1 JANUARY 2005
TO
IS 7638 : 1999 WOOD/LIGNOCELLULOSIC
BASED PANEL PRODUCTS — METHODS OF
SAMPLING**

(Second Revision)

(Page 2, Table 2 against item 'Plywood' under col 1) — Substitute 'IS 303/MR' for 'IS 303/WWR' in column 2.

(Page 2, Table 2, against item 'Medium Density Fibre Board' under col 1) — Substitute 'IS 12406/Grades 1 and 2' for 'IS 12406/Types 1 and 2' in column 2.

(CED 20)

Reprography Unit. BIS, New Delhi, India

**AMENDMENT NO. 2 DECEMBER 2008
TO
IS 7638 : 1999 WOOD/LIGNOCELLULOSIC BASED
PANEL PRODUCTS — METHODS OF SAMPLING**

(Second Revision)

(Page 2, Table 2, against item 'Plywood' under col 1) — Substitute 'IS 1328/BWR and MR Grades/Types 1 and 2' for 'IS 1328', in column 2.

(Page 2, Table 2, against item 'Blockboard' under col 1) — Substitute 'IS 1659/BWP and MR' for 'IS 1659/Grades 1 and 2' in column 2.

(Page 2, Table 2, against item 'Hardboard' under col 1) — Substitute 'tempered' for 'oil tempered' in column 2.

(Page 2, Table 2, against item 'Veneered particle board' under col 1) — Substitute 'IS 3097/Grades 1 and 2, Types 1, 2, 3 and 4' for 'IS 3097/Grades 1 and 2 solid and tubular core' in column 2.

(Page 2, Table 2) — Add the following as appropriate, under columns 1, 2 and 3:

(1)	(2)	(3)
Bamboo mat veneer composite for general purposes	IS 14588	1.5
Coir veneered board	IS 14842/BWR and MR	1.5
Medium density coir board	IS 15491/Grades 1, 2 and 3	1.5

(Page 4, Annex A) — Insert reference of the following in the list of standards at appropriate place:

<i>IS No.</i>	<i>Title</i>
IS 14588 : 1999	Bamboo mat-veneered composite for general purposes — Specification
IS 14842 : 2000	Coir veneer board for general purposes — Specification

Amend No. 2 to IS 7638 : 1999

**IS 15491 : 2004 Medium density coir boards for general purposes —
Specification**

(CED 20)

AMENDMENT NO. 3 NOVEMBER 2011
TO
IS 7638 : 1999 WOOD/LIGNOCELLULOSIC BASED
PANEL PRODUCTS — METHODS OF SAMPLING
(*Second Revision*)

[Page 2, Table 2 (see also Amendment No. 2)] — Add the following as appropriate, under columns 1, 2 and 3:

(1)	(2)	(3)
Laminated veneer lumber	IS 14616	1.5

[Page 4, Annex A (see also Amendment No. 2)] — Insert reference of the following in the list of standards at the end:

<i>IS No.</i>	<i>Title</i>
IS 14616 : 1999	Laminated veneer lumber — Specification

(CED 20)

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Wood Products Sectional Committee had been approved by the Civil Engineering Division Council.

Evaluation of quality of a lot with a view to determine its acceptability (or otherwise) is an important problem in any transaction of plywood, fibre hardboards, insulation boards and particle boards. The two alternatives for this purpose are 100 percent inspection and sampling inspection. The former is an uneconomical method, especially in the case of large lots. In the case of tests of destructive nature, it is not to be conceived of at all. On the other hand, the merit of sampling lies in the fact that the inspection of a sample taken from a lot will make it possible to draw valid inferences about the lot with considerable economy and accuracy.

The procedures of sampling of various types of plywood, fibre hardboards, insulation boards and particle boards had been incorporated in respective product specifications. However, in view of the experience gained in course of years and importance of these boards, it was felt necessary to revise these sampling procedures and make them more rational. It is hoped that this standard would help in the development of proper sampling procedures for plywood, fibre hardboards, insulation boards and particle boards in the country.

Accordingly, this standard prescribes the sampling details for various characteristics of plywood, fibre hardboards, insulation boards and particle boards. The acceptable quality levels for various types of plywood, fibre hardboards, insulation boards and particle boards have been based on the experience of consumers and manufacturers in the country.

The sampling procedures as laid down in this standard are specifically intended for the inspection of lots of plywood, fibre hardboards, insulation boards and particle boards by the consumers with a view to ascertain their conformity to the requirements of relevant Indian Standard specifications. However, these boards may also be inspected by the manufacturers during production with a view to ensure uniformity and reducing fluctuations in quality to the minimum, thereby providing greater quality assurance. For a more effective control of quality during production, the use of statistical quality control techniques is recommended. Effective guidance may be obtained in this respect from IS 397 (Part 1), IS 397 (Part 2) and IS 397 (Part 3).

This standard was first published in 1975 and then revised in 1986. Following are the changes brought out in this second revision:

- a) Inclusion of AQL values for block boards (IS 1659), wood wool building slabs (IS 3308), resin treated compressed wood laminates (compregs) (IS 3513), veneered wood boards for packing cases (IS 4834), structural plywood (IS 10701), medium density fibre boards for general purposes (IS 12406), prelaminated particle boards (IS 12823), metal faced plywood (IS 13957), bamboo mat board for general purposes (IS 13958), and cement bonded particle boards (IS 14276).
- b) Modification of AQL values for fibre insulation boards (IS 3348), plywood for concrete shuttering work (IS 4990), fire retardant plywood (IS 5509), and preservative treated plywood (IS 5539).

This standard is a necessary adjunct to various product specifications on plywood, fibre hardboards, insulation boards and particle boards and a list of such standards is given at Annex A.

The composition of the technical committee responsible for the formulation of this standard is given at Annex B.

In reporting the results of a test or analysis, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'.

Indian Standard

WOOD/LIGNOCELLULOSIC BASED PANEL PRODUCTS — METHODS OF SAMPLING (*Second Revision*)

1 SCOPE

This standard prescribes the scale of sampling and criteria for ascertaining the conformity of plywood, fibre hardboards, insulation boards and particle boards with the relevant product specification.

2 REFERENCES

The following Indian Standards contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard, are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
397	Method for statistical quality control during production:
(Part 1) : 1972	Control charts for variables (<i>first revision</i>)
(Part 2) : 1985	Control charts for attributes and count of defects (<i>second revision</i>)
(Part 3) : 1980	Special control charts
4905 : 1968	Methods for random sampling

3 TERMINOLOGY

3.1 For the purpose of this standard, the following definitions shall apply.

3.2 Lot

A collection of boards, of the same type, same dimension and manufactured in the same batch of production shall constitute a lot.

3.3 Sample

Group of boards, drawn from a lot for inspection.

3.4 Sub-sample

Boards drawn from the sample for laboratory testing.

3.5 Defect

Failure to meet the requirement imposed on a board with respect to a single characteristic.

3.6 Defective

A board, the quality of which does not meet the specified requirements.

3.7 Percent Defective

Hundred times the ratio of the number of defectives to the total number of boards inspected.

3.8 Acceptable Quality Level (AQL)

The maximum percent defective that, for the purpose of sampling of boards, can be considered satisfactory as a process average.

NOTE — When a purchaser designates some specific value of AQL, he indicates to the supplier that his (the purchaser's) acceptance sampling plan will accept the great majority of the lots that the supplier submits provided the process average level of percent defective in these lots is not greater than the designated value of AQL. Thus, the AQL is a designated value of percent defective indicated by the purchaser which will be accepted most of the times (that is approximately 89 to 99 percent of times).

3.9 Acceptance Number

The maximum allowable number of defectives in the sample for acceptance of the lot.

3.10 Supplier

The party supplying the boards. The supplier may or may not be the actual manufacturer of the boards.

3.11 Purchaser

The party purchasing the boards. The term 'Purchaser' will also cover a person or persons expressly authorized in writing by the purchaser to act on his behalf for inspection of the boards.

4 SCALE OF SAMPLING

4.1 The sample boards shall be selected and inspected separately for each lot for ascertaining the conformity of the lot to the requirements of the relevant product specification.

4.2 The number of boards to be selected from a lot shall depend upon the size of the lot and shall be in accordance with col 2, 5 and 8 of Table 1 corresponding to 1.5, 2.5 and 4.0 percent AQL value respectively. The AQL values applicable to different types of boards are given in Table 2.

Table 1 Scale of Sampling and Permissible Number of Defectives
(Clauses 4.2, 5.1 and 5.1.1)

No. of Boards in the Lot	Acceptance Quality Level (AQL)								
	1.5 Percent			2.5 Percent			4.0 Percent		
	No. of sample	No. of sub- sample	Accept- ance number	No. of sample	No. of sub- sample	Accept- ance number	No. of sample	No. of sub- sample	Accept- ance number
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Up to 50	5	1	0	5	1	0	3	1	0
51 to 150	8	2	0	8	1	0	5	1	0
151 " 300	13	2	0	13	2	0	8	1	0
301 " 500	20	3	0	20	2	1	13	1	1
501 " 1 000	32	4	1	32	3	2	20	2	2
1 001 " 3 000	50	5	2	50	3	3	32	2	3

Table 2 AQL Values for Different Types of Panel Products
(Clause 4.2)

Type of Boards	IS Number and Grade/Type (wherever applicable)	AQL (Percent)
(1)	(2)	(3)
Plywood	IS 303/BWR	1.5
	IS 303/WWR	2.5
	IS 709	1.5
	IS 710	1.5
	IS 1328	2.5
	IS 4859	1.5
	IS 4990	1.5
	IS 5509	1.5
	IS 5539	1.5
	IS 7316	2.5
	IS 10701	1.5
Compregs	IS 3513(Parts 1 to 3)	1.5
Blockboard	IS 1659/Grades 1 and 2	1.5
		2.5
Hardboard	IS 1658/Standard medium and oil tempered	1.5
Particle board	IS 3087/FPT Single- three- multi-layered, extrusion solid and tubular	1.5
Veneered particle board	IS 3097/Grades 1 and 2 solid and tubular core	1.5
Low density particle board	IS 3129	1.5
High density particle board	IS 3478/Types 1 and 2	1.5
Wood wool	IS 3308/Types 1 and 2 Building board	1.5
Fibre insulation board	IS 3348 All types	1.5
Veneered wood board	IS 4834/Grades 1 and 2	2.5
Medium density fibre board	IS 12406/Types 1 and 2	1.5
Prelaminated particle board	IS 12823/Grades 1 and 2	1.5
Metal faced plywood	IS 13957	1.5
Bamboo mat board for general purposes	IS 13958	1.5
Cement bonded particle board	IS 14276	1.5

4.3 The boards to be selected from the lot shall be chosen by the method of simple random sampling as given in IS 4905. As an alternative, if the boards are systematically stacked, the method of systematic sampling as given below may be followed.

4.3.1 Starting from any board in a lot, the boards shall be counted as 1, 2,....., up to r and so on in one order. Every r th board thus counted shall be withdrawn to constitute the sample, where r is the integral part of N/n (N and n being the lot size and the corresponding sample size, respectively). This procedure shall be stopped as soon as the required number of boards are obtained in the sample.

4.3.1.1 For example, if a total sample of 32 boards is to be selected from a lot of 1 330 boards, then the value of r is obtained as the integral part of $1\ 330/32 = 41.6$, which is 41. Starting from any board, the boards shall be counted in one order and every 41st board shall be drawn.

5 NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

5.1 Each of the boards selected according to **4.2** and **4.3** shall be inspected visually for surface defects, relevant dimensional requirements, workmanship and finish as per the relevant product specification. A

board failing to satisfy one or more of these requirements shall be considered as defective. The lot shall be considered as satisfying these requirements if the number of defectives found in the sample is less than or equal to the corresponding permissible number of defectives given in col 4, 7 and 10 of Table 1 for 1.5, 2.5 and 4.0 percent AQL respectively.

5.1.1 The lot having been found satisfactory according to **5.1** shall be further tested for other requirements of the relevant product specification. For this purpose, the number of boards in col 3, 6 and 9 of Table 1 shall be taken from those already tested according to **5.1** and found satisfactory for 1.5, 2.5 and 4.0 percent AQL respectively. The lot shall be declared as conforming to the requirements of the relevant product specifications if the number of defectives found in the sub-sample is less than or equal to the corresponding acceptance number given in col 4, 7 and 10 of Table 1 for 1.5, 2.5 and 4.0 percent AQL values respectively.

5.2 If any sample fails to conform to any of these requirements, double the number of samples shall be further taken from the lot and tested. The lot shall be considered to have passed, if these samples conform to the requirements specified in the relevant product specifications.

ANNEX A

(Foreword)

LIST OF PRODUCT STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
303 : 1989	Specification for plywood for general purposes (<i>third revision</i>)	(Part 2) : 1989	For chemical purposes (<i>first revision</i>)
709 : 1974	Specification for medium strength aircraft plywood (<i>first revision</i>)	(Part 3) : 1989	For general purposes (<i>first revision</i>)
710 : 1976	Specification for marine plywood (<i>first revision</i>)	4834 : 1968	Specification for veneered wood boards for packing cases
1328 : 1996	Specification for veneered decorative plywood (<i>third revision</i>)	4859 : 1968	Specification for high strength aircraft plywood
1658 : 1977	Specification for fibre hardboards (<i>second revision</i>)	4990 : 1993	Specification for plywood for concrete shuttering work (<i>second revision</i>)
1659 : 1990	Specification for block boards (<i>third revision</i>)	5509 : 1980	Specification for fire retardant plywood (<i>first revision</i>)
3087 : 1985	Specification for wood particle boards (medium density) for general purposes (<i>first revision</i>)	5539 : 1969	Specification for preservative treated plywood
3097 : 1980	Specification for veneered particle boards (<i>first revision</i>)	7316 : 1974	Specification for decorative plywood using plurality of veneers for decorative faces
3129 : 1985	Specification for low density particle boards (<i>first revision</i>)	10701 : 1983	Specification for structural plywood
3308 : 1981	Specification for wood wool building slabs (<i>first revision</i>)	12406 : 1988	Specification for medium density fibreboards for general purposes
3348 : 1965	Specification for fibre insulation boards	12823 : 1990	Specification for prelaminated particle boards
3478 : 1966	Specification for high density wood particle boards	13957 : 1994	Specification for metal faced plywood
3513	Specification for resin treated compressed wood laminates (compregs):	13958 : 1994	Specification for bamboo mat board for general purposes
(Part 1) : 1989	For electrical purposes (<i>first revision</i>)	14276 : 1995	Specification for cement bonded particle boards

ANNEX B*(Foreword)***COMMITTEE COMPOSITION**

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Indian Institute of Packaging, Mumbai

Directorate General of Supplies & Disposals, New Delhi

Federation of Indian Plywood and Panel Industry, New Delhi

Central Public Works Department, New Delhi

National Test House, Calcutta

The Western Indian Plywood Ltd, Cannanore

NUCHEM Ltd, Faridabad

The Indian Institute of Architects, Mumbai

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The Indian Plywood Manufacturing Company Ltd, Mumbai

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(Continued on page 6)

IS 7638 : 1999

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Amendments Issued Since Publication

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