

**BUREAU OF INDIAN STANDARDS**  
**(CENTRAL MARKS DEPARTMENT-III)**

**Ref: CMD-III/16:710**

**15 March 2011**

**Subject: Implementation of revised standard IS 710:2010, for Marine Plywood and revised STI Doc: STI/710/5, April 2011.**

IS 710:1976 has been revised as IS 710:2010, incorporating the amendments to the earlier version of the standard and with the following modifications:

- a) Provision for the use of plantation timber species of poplar, eucalyptus and silver oak, which have been found suitable for manufacture of marine plywood have been incorporated, keeping in view the scarce availability of timber from natural forests;
- b) An alternate accelerated test method for water resistance test has been incorporated; and
- c) A new test requirement on wet bending strength has been introduced.

Accordingly, STI has been revised as Doc: STI/710/5 April, 2011(Copy of STI available on BIS Intranet) and approved by Competent Authority. In order to implement, revised standard and Scheme of Testing and Inspection following procedure shall be adopted:

For existing licensees:

1. Based on actual situation in respect of the operating licences applicability of the changes may be examined and verified if required.
2. Endorsement in the license as per revised standard shall be made after obtaining the Acceptance of revised STI.

3. Action shall be taken as per OMPC, November 2004, if the licensee fails to submit the acceptance of STI in stipulated time.

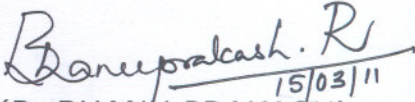
For Applicants:

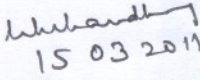
1. All new applications may be recorded as per IS 710:2010.
2. If any applications already recorded as per IS 710:1976 or in advanced stages and/or processed for GOL, in such cases an undertaking may be obtained from the firm that the action required to switchover to IS 710:2010 shall be completed before 1<sup>st</sup> April 2011. RO/BOs shall ensure accordingly.

Revised Indian Standard IS 710:2010 and revised STI Doc: STI/710/5 April, 2011 will be implemented w.e.f 1st April, 2011.

RO/BOs operating more number of licences for the product are requested to send the proposal for revision of marking fee in view of addition of new test requirement on wet bending strength.

All ROs/BOs are requested to take necessary action. STI can be downloaded from BIS Intranet.

  
15/03/11  
(R. BHANU PRAKASH)  
Scientist E / Director, CMD-III

  
15 03 2011  
Scientist F & H, CMD-III

Scientist F & H, CED – for information & gazette notification

Scientist F & H, ITSD – for placing on Intranet

Circulated to all RO's/BO's/IO's/BIS labs

**SCHEME OF TESTING AND INSPECTION  
FOR CERTIFICATION OF  
MARINE PLYWOOD  
ACCORDING TO IS 710:2010  
(SECOND REVISION)**

- 1 **LABORATORY** – A laboratory shall be maintained which shall be suitably equipped and staffed where different tests given in the specification shall be carried out in accordance with the methods given in the specification.
- 2 **TEST RECORDS** -- All records of tests, inspection and calibration shall be kept in suitable forms approved by the Bureau.
  - 2.1 All testing apparatus/measuring instruments shall be periodically checked and calibrated and records of such checks/calibration shall be maintained.
  - 2.2 Copies of any records and other connected papers that may be required by the Bureau shall be made available at any time on request.
- 3 **QUALITY CONTROL** – It is recommended that, as far as possible, Statistical Quality Control (SQC) methods may be used for controlling the quality of the product during production as envisaged in this Scheme [See IS 397(Part I), to IS 397(Part 4)].
  - 3.1 In addition, effort should be made to gradually introduce a Quality Management System in accordance with IS/ISO 9001.
4. **STANDARD MARK** – The Standard Mark, as given in Column (1) of the First Schedule of the licence, shall be stamped/stencilled on each Marine plywood board, provided always that the plywood board to which this Mark is applied conforms to every requirement of the specification.
  - 4.1 **MARKING** -- In addition the following information shall be legibly and indelibly marked on the face of each marine plywood board near one edge by stamping/stencilling.
    - a) Name of the manufacturer, initials and/or his recognized trade mark, if any;
    - b) Year of manufacture;
    - c) Abbreviation indicating the species of timber used in each ply as indicated in column 4 of Table I and 2;
    - d) Batch number/Control unit number;
    - e) Licence No. (CM/L-xxxxxxx); and
    - f) Criteria for which the marine plywood board has been labelled as ECO mark (for ECO marked marine plywood only).

- 5 **LEVELS OF CONTROL** -- The tests, as indicated in Table 1 attached and at the levels of control specified therein, shall be carried out on the whole production of the factory which is covered by this scheme and appropriate records and charts maintained in accordance with paragraph 2 above. All the production which conforms to the Indian Standard and covered by the licence shall be marked with certification mark of the Bureau.
- 5.1 **BATCH NUMBER/CONTROL UNIT** -- For the purpose of this scheme, the total number of marine plywood boards produced from the same materials and on the same day in one press from same roll of film adhesives or mix of adhesives shall constitute a control unit (Boards in which the arrangement of veneers is similar as regards thickness and species of timber for face plies shall be considered to be of similar construction).
- 5.2 The processing and use of various raw materials going into the production of Marine plywood shall be as follows.
- 5.2.1 **TIMBER** – Only timber of the species given in Table 1 and Table 2 of the specification shall be used and no alternative species of Timber shall be used without the prior approval of the purchaser. For ECO-Mark, only wood from sources other than natural forests such as wood from industrial and social forestry plantations and shade trees from tea and coffee estates shall be used for the manufacture of veneers.
- 5.2.2 The veneers shall be as per clause 5.1 & 5.1.1 of the specification and dried to suitable moisture content in the mechanical drier before bonding. Sample of the dried veneers shall be drawn for moisture content test. Records of all such determinations shall be kept.
- 5.2.3 **ADHESIVES** – The adhesives used for bonding the veneers shall be of hot press synthetic resin, (BWP) type conforming to IS 848. Extender shall not be added to the adhesive by the plywood manufacturer. Fillers if used shall not exceed 10 % by mass of solid content of the glue.
- 5.3 **ASSEMBLY AND TREATMENT** -- Assembly and treatment of marine plywood shall conform to clause 5.2 & 5.3 of IS 710. Retention of preservative requirements as laid down in clause 5.3 & 9.1.8 of the specification shall be ensured.
- 5.4 **MOISTURE CONTENT** – Two samples from every control unit shall be tested for its conformance to the requirement of moisture content as laid down in clause 5.4 & 9.1.1 of the specification. In the event of the failure of this sample, the plywood in the entire control unit shall be suitably reconditioned. Such reconditioned material when tested again shall conform to the requirement of the specification for moisture content.

- 5.5 **GLUE ADHESION IN DRY STATE AND WATER RESISTANCE TEST** – A sample from every control unit shall be subjected to test for glue adhesion in dry state and resistance to water for its conformity to the requirements of the specification as laid down in clause 9.1.2 and 9.1.3 of the specification. If the samples selected are found not to be complying fully with one or both of these requirements, two samples shall be taken from the same control unit and subjected to the above tests. If any of the samples in the second set fails to conform to the requirements of one or both of these tests, all the material in the control unit represented by samples shall be rejected.
- 5.6 **TENSILE STRENGTH** – The sample shall also be subjected to tensile strength for its conformity to clause 9.1.4 of the specification. If it fails, the entire material in the control unit shall be rejected.
- 5.7 **INSPECTION OF FINISHED PRODUCT**
- 5.7.1 **WORKMANSHIP AND FINISH** -- All finished plywood boards shall be examined for workmanship and finish for conformance to the specification in accordance with the requirements laid down in clause 7 of the specification. Only those plywood boards which are satisfactory in all respects shall be marked.
- 5.7.2 **DIMENSIONS** – The dimensions of all the plywood boards shall be measured and those found to be not conforming to the requirements as laid down in clause 6 of the specification shall not be marked.
- 5.7.2.1 The plywood boards found defective as in 5.7.1 & 5.7.2 above may, however, be re-dimensioned to the next smaller sizes to remove the defects. Such boards when examined again shall satisfy the requirements of visual defects, finish and dimensions.
- 5.8 **MYCOLOGICAL TESTS** - A sample each from the plywood made from different species or combination of species of timber shall be tested once a month for mycological tests. In case a sample fails to conform to the requirement of mycological test as laid down in clause 9.1.5 of the specification, a thorough check shall be done on the type of glue used, the quantity and type of preservative added to the glue line.
- 5.9 **STATIC BENDING STRENGTH AND WET BENDING STRENGTH** -- The sample shall be subjected to static bending strength and wet binding strength for its conformity to clause 9.1.6 & 9.1.7 of the specification.
- 5.10 **ADDITIONAL REQUIREMENTS FOR ECO MARK** -- Eco marked plywood boards shall conform to general and specific requirements as specified under cl.10.1 & 10.2 of IS 710.

- 5.11 In respect of all other clauses of the specification the factory will maintain appropriate control and checks to ensure that their product conforms to the various requirements of this specification.
- 6 **REJECTIONS** – A separate record shall be maintained giving information relating to the rejection of the production not conforming to the requirements of the specification and the method of its disposal. Such material shall in no circumstances be stored together with that conforming to the specification.
- 7 **SAMPLES** – The licensee shall supply, free of charge, the samples required in accordance with the Bureau of Indian Standards (Certification) Regulations, 1988, as subsequently amended, from the factory or go-downs. The Bureau shall pay for the samples taken by it from the open market.
- 8 **REPLACEMENT** – Whenever a complaint is received soon after the goods with Standard Mark have been purchased and used, and if there is adequate evidence that the goods have not been misused, defective goods or their components are replaced or repaired free of cost by the licensee in case the complaint is proved to be genuine and the warranty period (where applicable) has not expired. The final authority to judge the conformity of the product to the Indian Standard shall be with the Bureau. The firm shall have own complaint investigation system as per IS/ISO 10002.
- 8.1 In the event of any damages caused by the goods bearing the Standard Mark, or claim being filed by the consumers against BIS Standard Mark and not “conforming to” the relevant Indian Standard, entire liability arising out of such non conforming product shall be of licensee and BIS shall not in any way be responsible in such cases.
- 9 **STOP MARKING** – The marking of the product shall be stopped under intimation to the Bureau if, at any time, there is some difficulty in maintaining the conformity of their product to the specification, or the testing equipment goes out of order. The marking may be resumed as soon as the defects are removed under intimation to Bureau.
- 9.1 The marking of the product shall be stopped immediately if directed to do so by Bureau for any reason. The marking may then be resumed only after permission by the Bureau. The information regarding resumption of markings shall also be sent to the Bureau.
- 10 **PRODUCTION DATA** – The licensee shall send to BIS as per the enclosed proforma-1 to be authenticated by a Chartered Accountant, a statement of quantity produced, marked and exported by him and the trade value thereof at the end of each operative year of the licence.

Table 1.....

**IS 710:2010  
MARINE PLYWOOD  
TABLE 1 LEVELS OF CONTROL  
(Para 5 of the Scheme of Testing and Inspection)**

TEST DETAILS			LEVELS OF CONTROL		
Clause ref.	Requirement	Test Methods Reference	No. of samples	Frequency	Remarks
4.	Material	IS 710			In case the adhesive is ISI marked or is accompanied by manufacturer's Test certificate showing conformity to the relevant ISS no further testing may be necessary.
4.1	Timber	-do-	-do-	Each consignment	
4.2	Adhesive	IS 848	-do-	-do-	
5 & 7	Manufacture, Workmanship and finish	IS 710		Each finished plywood board	The samples may be drawn in such a manner that all the marine plywood manufactured in different thickness is covered over a period of time.
5 & 6	Manufacture & Dimensions	-do-		-do-	
5.1 & 9.1.1	Moisture content *	IS 1734 (Part 1)	Two	Each control unit	
9.1.2	Glue Adhesion in dry state		One	-do-	
9.1.2.1	Glue Shear strength	IS 1734 (Part 4)	One	Each control unit	
9.1.2.2	Adhesion of plies	IS 1734 (Part 5)	-do-	-do-	
9.1.3	Water Resistance test	IS 1734(Part 5)	One	-do-	
9.1.3.1					
9.1.3.2					
9.1.3.1.1	Glue Shear strength	IS 1734 (Part 4)	-do-	-do-	
9.1.3.1.2	Adhesion of Plies	S 1734 (Part 5)	-do-	-do-	
9.1.4	Tensile strength	IS 1734 (Part 9)	One	-do-	
9.1.5	Mycological test **	IS 1734(Part 7)	One	Once a month	
9.1.6	Static Bending Strength	IS 1734(Part 11)	One	Each control unit	
9.1.7	Wet Bending	-do-	One	-do-	
9.1.8	Retention of Preservative	IS 2753 (Part 1&2) IS 710	One	-do-	

\* A moisture meter may be used for the routine testing of moisture content. In that case the readings obtained for moisture content should not exceed 13%. At least once a week the method given in the specification may be employed for checking up the results obtained with the moisture meter and the error for the moisture meter determined accordingly. A record of all these determinations shall be kept.

\*\* Or as often as asked by the purchaser, whichever is higher.

**PROFORMA – 1**

**PROFORMA FOR OBTAINING PRODUCTION DETAILS**

Period covered

Name of Licensee

CM/L No.

Name of Articles (s)

IS No.

Grade/Type/Size/Variety/Class/Rating

1.1 Brand/Trade/Name(s) of BIS Certification Marked Products

2.0 Total production of the articles(s)

licensed for certification marking

2.1 Total production of the article(s)

conforming to Indian Standard

3.0 Production covered with BIS

Certification Mark and its Value

a) Quantity

b) Value (Rs.)

3.1 Brand Name used on production covered under BIS Certification Mark

3.2 Calculation of marking fee on unit-rate basis; Marking Fee per unit

a) Unit

b) Quantity covered with BIS Certification Mark

c) Marking fee rounded off in whole rupees as obtained by applying unit rates given in (a) on quantity given in (b)

Note: In case a clause is not applicable, suitable remarks may be given against it.

4.0 Quantity not covered with BIS Certification Mark. If any, and the reasons for such non-coverage

4.1 Brand Name under with non certified goods were sold

5.0 Quantity Exported with BIS Standard Mark and its value

5.1 Brand Name under which BIS Certified goods are exported

6.0 Authentication by Chartered Accountant