BUREAU OF INDIAN STANDARDS
Central Marks Department-III

Our Ref: CMD-III/16:3513 (Part 3) 2002 03 14
Subject: IS 3513(Part 3):1989

Title: RESIN TREATED COMPRESSED WOOD LAMINATES (COMPREGS), Part 3 - GENERAL PURPOSES

The scheme of testing and inspection for IS3513(Part3):1989 has been finalised as per DOC:STI 3513(Part 3)/1, March 2002. A copy of the same is enclosed. The finalised document of STI stated above would come into force with immediate effect.

(B.K. Shreevastava)
Joint Director(CMD-III)

Encl: As above

Circulated to all RO's/BO's

Cc: CMD-I
SCHHEME OF TESTING AND INSPECTION
FOR CERTIFICATION OF
RESIN TREATED COMPRESSED WOOD LAMINATES (COMPREGS)
(PART-3 FOR GENERAL PURPOSES)
ACCORDING TO IS 3513(PART 3):1989
(First Revision)

1. LABORATORY

1.1 A laboratory shall be maintained, which shall be suitably equipped and staffed, where different tests given in the specification shall be carried out.

1.2 All the testing equipment shall be periodically checked and calibrated and records of such checks/calibration maintained.

2. TEST RECORD

2.1 All records of tests and inspection shall be kept in suitable forms approved by the Bureau of Indian Standards.

2.2 Copies of any records or charts that may be required by Bureau shall be made available at any time on request.

3. QUALITY CONTROL

3.1 Statistical Quality and process control methods shall be employed as far as possible to control the quality as envisaged in IS 397 (Part 1):1972, IS 397 (Part 2):1985 and IS 397 (Part 3):1980.

3.2 In addition, efforts should be made to gradually introduce a quality management system in accordance with the quality system modules as per IS/ISO 9001 or IS/ISO 9002 or IS/ISO/9003 as appropriate to the activities of the organization.
4. STANDARD MARK

The Standard Mark as given in Column (1) of the first schedule of the licensee shall be legibly and indelibly marked or stamped on each compreg board, provided always that the compreg board to which this mark is applied conforms to every requirement of the specification for the relevant grade and type.

5. MARKING

In addition if compreg is supplied in board form each board, and if supplied in component form, or if component is small, each package of the component shall be legibly and indelibly marked or stamped with the following particulars along with such other marks as the purchaser may stipulate at the time of placing a contract:

a) Type and finish.
b) Manufacturer’s name, initials or recognized trade-mark.
c) Year of manufacture and
d) Batch number.

6. MATERIALS

The processing and use of various Raw-materials going into the production of compreg shall be as follows:

6.1 TIMBER

Any non-resinous species of timber may be used for the manufacture of veneers required for making compreg.

The veneers shall be either rotary cut or sliced and maximum variation in grains shall not exceed 1 in 10. Veneers shall be smooth, free from knots, splits, dry rot or any other type of rot and resin pockets. The veneers shall be of uniform thickness with a tolerance of ± 5 percent and dried to a suitable moisture content not exceeding 8 percent. Species of timber for the manufacture of compreg, as far as possible, a single species of timber
shall be taken to prevent in compatibility of various species in physical and mechanical properties, such as density, modules of elasticity, shrinkage etc.

6.2 RESIN

The synthetic resin used for impregnation and bonding of veneers shall be of thermosetting phenol or cresol formaldehyde type and shall generally conform to IS 848:1974.

6.3 VARNISHES

The edges of all boards and the surfaces of all components shall be given and protective coat with suitable varnish conforming to the relevant Indian Standards i.e. varnishes used for treating compreg boards and the mechanical component of compreg shall conform to IS 524:1983 IS 525:1968.

7. LEVELS OF CONTROL

The test and inspection as indicated in table 1 attached and at the levels of control specified therein shall be carried out on the whole 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 this license shall be marked with the standard mark.

8. CONTROL UNIT

For the purpose of this scheme, the total number of compreg grade and type pressed under similar condition with the same synthetic resin for impregnation shall constitute a control unit (compreg in which the arrangement of veneers is similar as regards thickness and species of timber).
9. INSPECTION OF FINISHED PRODUCT

9.1 PHYSICAL PROPERTY TEST

A sample from every control unit shall be tested for its conformance to the requirement of specific gravity, moisture contents ad volatile matter as laid down in clause 8.1 of the specification. In the event of the failure of this sample, the compreg board in the entire control unit shall be suitably reconditioned. Such reconditioned material when tested again shall conform to the requirement of the specification for specific gravity, moisture content and volatile matter.

9.2 MECHANICAL PROPERTY TEST

A sample from every control unit which has passed the requirement of physical properties as given in clause 8.1 of the specification, shall be subjected to test for tensile strength, static bending strength, compressive strength, shear strength, hardness (Rock ‘H’) and impact strength for its conformance to these requirement of the specification laid down in clause 8.2 of the specification. If the samples selected are found not to be fully complying with any of the requirements, another 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 these tests, all the material in the control unit represented by samples shall be rejected.

10. REJECTION - A separate record providing the detailed information regarding the rejected control units and mode of their disposal shall be maintained. Such material shall in no case be stored together with that conforming to the specification.
11. SAMPLES - The licensee shall supply, free of charge, the sample(s) required in accordance with Regulation 11(e) of the Bureau of Indian Standards (Certification) Regulations, 1988, as subsequently amended from his factory or godowns. The BIS shall pay for the samples taken by it from the open market.

12. 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 are replaced 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 BIS.

In the event of any damages caused by the goods bearing the standard mark, or claim being filed by the consumer against BIS Standard Mark and not “conforming to” the relevant Indian Standards, entire liabilities arising out of such non-conforming products shall be of licensee and BIS shall not in any way be responsible in such cases.

13. STOP MARKING - The marking of the product shall be stopped under intimation to BIS, if, at any time, there is some difficulty in maintaining the conformity of the product to the specification or the testing equipment goes out of order or if directed to do so by BIS for any reason. The marking may be resumed as soon as the defects are removed or when BIS gives the permission to do so. The information regarding resumption of marking shall also be sent to BIS.

14. PRODUCTION DATE - The licensee shall send to BIS, as per the enclosed proforma, a statement of the quantity produced, marked and exported by him and the trade value thereof during the half year ending 30 June and 31 December. This statement is required to be forwarded to BIS on or before the 31st day of July and January for the proceeding half-year.

TABLE 1 .....
<table>
<thead>
<tr>
<th>CLAUSE</th>
<th>REQUIREMENT</th>
<th>TEST METHOD</th>
<th>NO. OF SAMPLES</th>
<th>FREQUENCIES</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>Workmanship &amp; Finish</td>
<td>IS 3513 (Part 3)-1989</td>
<td></td>
<td>Each compreg board</td>
<td>The visual inspection should be carried out at a well light place, records of tests shall be kept in form 1 &amp; 2</td>
</tr>
<tr>
<td>7.</td>
<td>Dimension &amp; Tolerances</td>
<td>IS 3513 (Part 3) – 1989</td>
<td>One</td>
<td>- do -</td>
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<tr>
<td></td>
<td>Physical properties, All types</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8.1</td>
<td>Specific gravity</td>
<td>IS: 1708 (Part 2) *</td>
<td>- do -</td>
<td>Each control unit</td>
<td></td>
</tr>
<tr>
<td>Table 1</td>
<td>Moisture content &amp; volatile matter</td>
<td>IS 1708(Part 1) *</td>
<td>- do -</td>
<td>- do -</td>
<td></td>
</tr>
</tbody>
</table>

*Latest version
**IS: 3513(PART-3)-1989**
RESIN TREATED COMPRESSED WOOD LAMINATES (COMPREGS)
PART –3 FOR GENERAL PURPOSES
(PARA 7 OF THE SCHEME OF TESTING AND INSPECTION)

<table>
<thead>
<tr>
<th>TEST DETAILS</th>
<th>LEVERS OF CONTROL</th>
</tr>
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<tbody>
<tr>
<td>CLAUSE</td>
<td>REQUIREMENT</td>
</tr>
<tr>
<td>8.2 Table 2</td>
<td>Mechanical Properties (for types V &amp; VI)</td>
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<td></td>
<td>Hardness Rockwell H – Scale</td>
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<td>Impact strength</td>
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</tbody>
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*Latest Version*
<table>
<thead>
<tr>
<th>Control Const. No.</th>
<th>Const. Of Adhesive</th>
<th>No. of Plywood Boards</th>
<th>Dimen. &amp; Thick. (LXBX H)</th>
<th>No. of Pli es</th>
<th>Species of timber for core and cross bend</th>
<th>Type of lamination</th>
<th>Moistu. Contrn. &amp; volati. Attar</th>
<th>Specific gravity</th>
<th>Tensile strength (MPa)</th>
<th>Static Bending (MPa)</th>
<th>Compressive strength (Rockwell 'H' side)</th>
<th>Hardness (KGM/C M2)</th>
<th>Impact No. of compres s boards inspect ed</th>
<th>Type &amp; Grade of resin treated compressed wood laminated board</th>
<th>Dimension &amp; Visual Inspection</th>
<th>Records of Test of Resin Treated Compressed Wood Laminates Board Pressed</th>
</tr>
</thead>
</table>

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FORM I

RECORDS OF TEST OF RESIN TREATED COMPRESSED WOOD LAMINATES BOARD
### RECORDS OF MOISTURE CONTENTS

<table>
<thead>
<tr>
<th>Date / Hour</th>
<th>Deck No.</th>
<th>Species of Timber</th>
<th>Moisture contents %</th>
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*FORM - II*

DOC: STI 3513(Part 3)1
March 2002
# PROFORMA

**STATEMENT OF QUANTITY PRODUCED MARKED AND EXPORTED DURING THE PERIOD** ____________**TO**__________

CM/L-

**LICENSEE:**

**PRODUCT:**

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**Quantity Value***

1. Total Production
2. Production covered with ISI Mark
3. Production Exported

   a) With ISI Mark:
   b) Without ISI Mark:

9 Country to which material exported:

   a) With ISI Mark:
   b) Without ISI Mark:

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f.o.b. value may be given

**SIGNATURE**

**DATE:**