



**PRODUCT MANUAL  
FOR SHEET RUBBER JOINTING AND  
RUBBER INSERTION JOINTING  
ACCORDING TO IS 638: 1979**

**This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.**

|    |                                                                                       |                                                     |                                                                                                                                                                                    |
|----|---------------------------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Product                                                                               | :                                                   | IS 638 : 1979                                                                                                                                                                      |
|    | Title                                                                                 | :                                                   | <b>Sheet Rubber Jointing and Rubber Insertion Jointing</b>                                                                                                                         |
|    | No. of Amendments                                                                     | :                                                   | 1                                                                                                                                                                                  |
| 2. | Sampling Guidelines:                                                                  |                                                     |                                                                                                                                                                                    |
| a) | Raw material                                                                          | :                                                   | Fabric Reinforcement for Rubber Insertion Jointing shall be tested as per clause 3.1.3 of IS 638 : 1979<br><br>Composition of Rubber Compound as per clause 3.1.2 of IS 638 : 1979 |
| b) | Grouping guidelines                                                                   | :                                                   | Nil                                                                                                                                                                                |
| c) | Sample Size                                                                           | :                                                   | 01x01m Sheet, 02 Nos<br>Slab(150x150x10mm), 02 Nos<br>Slab(150x150x2mm), 02 Nos<br>Buttons(29x12.5mm), 04 Nos                                                                      |
| 3. | List of Test Equipment                                                                | :                                                   | Please refer ANNEX – A                                                                                                                                                             |
| 4. | Scheme of Inspection and Testing                                                      | :                                                   | Please refer ANNEX – B                                                                                                                                                             |
| 5. | Possible tests in a day                                                               | :                                                   | Construction and Workmanship, Tensile Strength & Elongation at Break, Resistance to Bending and Hardness.                                                                          |
| 6. | Scope of the Licence :                                                                |                                                     |                                                                                                                                                                                    |
|    | Licence is granted to use Standard Mark as per IS 638:1979 with the following scope:- |                                                     |                                                                                                                                                                                    |
|    | Name of the product                                                                   | Sheet Rubber Jointing and Rubber Insertion Jointing |                                                                                                                                                                                    |
|    | Type                                                                                  | Type A and/or Type B                                |                                                                                                                                                                                    |
|    | Grade                                                                                 | Grade 1 and/or Grade 2                              |                                                                                                                                                                                    |
|    | Jointing Material                                                                     | Sheet rubber and/or Rubber insertion Jointing       |                                                                                                                                                                                    |
|    | Joints Subjected to                                                                   | Water and Air Pressure and/or Steam Pressure        |                                                                                                                                                                                    |

## ANNEX-A

**TO PRODUCT MANUAL  
FORSHEET RUBBER JOINTING AND  
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ACCORDING TO IS 638: 1979  
List of Test Equipment**

**Major test equipment required to test as per the Indian Standard**

| Sl. No. | Test Equipment                                                                                                                                                      | Tests used in with Clause Reference                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| 1.      | -Thickness gauge                                                                                                                                                    | Construction and Workmanship (clause 3.2)             |
| 2.      | - Dies and cutters<br>- Thickness gauge<br>-Cone gauge<br>- Tensile-testing machine<br>-Vernier Calipers<br>-Steel scale                                            | Tensile Strength and Elongation at Break (clause 3.4) |
| 3.      | - Hot air oven with count<br>hour meter<br>- Dies and cutters<br>- Thickness gauge<br>-Cone gauge<br>- Tensile-testing machine<br>-Vernier Calipers<br>-Steel scale | Accelerated Ageing (clause 3.5)                       |
| 4.      | -Compression<br>- Apparatus<br>- Oven<br>- Thickness Gauge<br>-Air conditioner                                                                                      | Compression Set (clause 3.6)                          |
| 5.      | - Thickness Gauge<br>-Vernier calliper<br>-Round metal rod<br>-Vice                                                                                                 | Resistance to Bending (clause 3.7)                    |
| 6.      | -Air conditioner<br>-Humidity chamber<br>-Adhesion Test Machine<br>-Cutting Tools                                                                                   | Adhesion (clause 3.8)                                 |
| 7.      | -Hardness testing machine                                                                                                                                           | Hardness (clause 3.9)                                 |

ANNEX-B

**TO PRODUCT MANUAL  
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**(SCHEME OF INSPECTION AND TESTING)**

**1. LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

**1.1** The manufacturer shall prepare a calibration plan for the test equipments.

**2. TEST RECORDS** – The manufacturer shall maintain test records for the tests carried out to establish conformity.

**3. PACKING AND MARKING** – The Standard Mark as given in the Schedule of the license and Licence Number (i.e. CM/L.....) shall be incorporated, and the packing, marking shall be done as per the provisions of the Indian Standard, provided always that the product thus marked conforms to all the requirement of the specification. In addition, details of BIS website shall be marked as follows: “For details of BIS certification please visit [www.bis.gov.in](http://www.bis.gov.in)”

**4. CONTROL UNIT** – For the purpose of the Scheme, the control unit shall be as follows:-

**4.1 Rubber Compound** – Rubber compound from mixing made in one cycle of mixing.

**4.2 Sheet rubber jointing or rubber insertion jointing** – All sheet rubber jointing or rubber insertion jointing of one type and grade manufactured from the same type of rubber compound under essentially similar conditions and produced in a day.

**5. LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

**7. REJECTIONS** – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

**Table 1 LEVELS OF CONTROL  
SHEET RUBBER JOINTING AND  
RUBBER INSERTION JOINTING  
ACCORDING TO IS 638: 1979  
(Scheme of Inspection and Testing)**

| (1)          |                                                                     |                             | (2)                                                                               | (3)               |           |                   |                                                                                                        |
|--------------|---------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------|-------------------|-----------|-------------------|--------------------------------------------------------------------------------------------------------|
| Test Details |                                                                     |                             | Test equipment requirement<br>R: required<br>(or)<br>S: Sub-contracting permitted | Levels of Control |           |                   |                                                                                                        |
| Clause       | Requirement                                                         | Test Method                 |                                                                                   | No. of samples    | Frequency | Remarks           |                                                                                                        |
|              |                                                                     | Clause                      | Reference                                                                         |                   |           |                   |                                                                                                        |
| 3.1          | Material                                                            |                             |                                                                                   |                   |           |                   |                                                                                                        |
| 3.1.1        | Jointing material                                                   | 3.1.1                       | IS 638:1979                                                                       | R                 | 5         | Each control unit |                                                                                                        |
| 3.1.2        | Composition of rubber compound                                      | 3.1.2                       | -do-                                                                              | R                 | 5         | -do-              |                                                                                                        |
| 3.1.3        | Breaking load of fabric reinforcement for rubber insertion jointing | 3.1.3                       | IS 638:1979 &<br>IS 1969 Pt.1                                                     | R                 | 1         | Each consignment  | Each consignment of reinforcement of cotton fabric for rubber insertion jointing supplied at one time. |
| 3.2          | Construction and workmanship                                        |                             |                                                                                   |                   |           |                   |                                                                                                        |
| 3.2.1        | Visual examination                                                  | 3.2.1                       | IS 638:1979                                                                       | R                 | 5         | Each control unit | Appropriate record shall be maintained.                                                                |
| 3.2.2        | Thickness and number of plies                                       | 3.2.2, 3.2.2.1 &<br>3.2.2.2 | IS 638:1979                                                                       | R                 | 5         | -do-              |                                                                                                        |
| 3.3          | Size                                                                | 3.3                         | -do-                                                                              | R                 | 5         | -do-              |                                                                                                        |

|     |                                          |               |                                                 |   |   |                             |                                                                                                                                                                                         |
|-----|------------------------------------------|---------------|-------------------------------------------------|---|---|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.4 | Tensile strength and elongation at break | 3.4           | IS 638:1979 & IS 3400(Part 1)                   | R | 3 | Each control unit           | In case any of the samples fail to meet the relevant requirements the entire material in the control unit shall be considered unfit for the purpose of marking.                         |
| 3.5 | Accelerated ageing                       | 3.5.1         | IS 638:1979, IS 3400(Part 4) & IS 3400 (Part 1) | R | 3 | Every eleventh control unit | In case of any failure each control unit shall be tested till 5 consecutive control units are found to be satisfactory and only then frequency suggested in this table may be followed. |
| 3.6 | Compression set                          | 3.6.1 & 3.6.2 | IS 638:1979 & IS 3400(Part X)                   | R | 3 | Every fifth control unit    | All sheet rubber jointing or rubber insertion jointing of same material, thickness, types grade, manufacture under the similar conditions of manufacture in a day                       |
| 3.7 | Resistance to bending                    | 3.7.1         | IS 638:1979                                     | R | 3 | Every control unit          |                                                                                                                                                                                         |
| 3.8 | Adhesion                                 | 3.8           | IS 638:1979 & IS 3400(Part 5)                   | R | 1 | -do-                        |                                                                                                                                                                                         |
| 3.9 | Hardness                                 | 3.9           | IS 638:1979 & IS 3400(Part 2)                   | R | 3 | One control unit of rubber  | See clause 4.1 of SIT                                                                                                                                                                   |

Note-1: Whether test equipment is required or sub-contracting in column 2 shall be decided by the Bureau and shall be mandatory.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit and submit his own levels of control in column 3 with proper justification for approval by BO Head.