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# उत्पाद मैन्युअल
# टाईलों और पत्थरों के जोड़ों को भरने के लिए ग्राउट के लिए
# आई एस 17190:2020 के अनुसार

# PRODUCT MANUAL
# GROUTS FOR FILLING OF JOINTS OF TILES AND STONES
# ACCORDINGTO IS 17190:2020

**विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो) अनुरूपता मूल्यांकन (विनियम, 2018 की योजना -I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।**

**This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity 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.**

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| 1. | **मानक संख्या**<br>**IS No.** | : | IS 17190 : 2020 |
| | **शीर्षक**<br>**Title** | : | Grouts for Filling of Joints of Tiles and Stones |
| | **संशोधनों की संख्या**<br>**No. of amendments** | : | Nil |
| 2. | **नमूना दिशानिर्देश**<br>**Sampling Guidelines** | | |
| a) | **कच्चा माल**<br>**Raw material** | : | Nil |
| b) | **समूहीकरण दिशानिर्देश**<br>**Grouping Guidelines** | : | Please refer to Annex-A |
| c) | **नमूने का परिमाण**<br>**Sample Quantity** | : | 25 kg for all tests<br><br>Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (incase of market surveillance, effort may be made to procure therequired quantity of product sample, as far as possible since raw material sample may not be available in market) |

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| 3. | **परीक्षण उपकरणों की सूची**<br>**List of Test Equipment** | : | Please refer to Annex-B |
| 4. | **निरीक्षण और परीक्षण की स्कीम**<br>**Scheme of Inspection and Testing** | : | Please refer to Annex-C |
| 5. | **एक दिन में संभावित परीक्षण**<br>**Possible tests in a day** | | |
| | The samples due for testing on the day of visit are to be witnesses for testing during factory surveillance.<br>Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/ auditor. | | |
| 6. | **लाइसेंस का दायरा /Scope of the Licence:** | | |
| | "Licence is granted to use Standard Mark as per IS 17190 : 2020 with the following scope: | | |
| | Name of the product | Grouts for Filling of Joints of Tiles and Stones | |
| | Type | CG1/ CG2/ RG1/ RG2/ MRG | |
| | Optional Requirement | - With/without water absorption after 240 min<br>- With/without Chemical Resistance (if applicable) | |

# ANNEX A
# Grouping Guidelines

1. IS 17190: 2020 covers Grouts For Filling Of Joints Of Tiles and Stones, which are classified as given below:

a) Type - CG1/ CG2/ RG1/ RG2/ MRG
b) Optional Requirement - water absorption after 240 min, Chemical Resistance (if applicable)

2. Considering the above, following grouping guidelines is developed for GoL/CSoL :

a) Each type of grout shall be tested for all requirements to cover that particular type in the scope of the licence.
b) Each optional requirements shall be tested if declared by the manufacturer, to cover that optional requirements in the scope of licence.

3. The Firm shall declare the various varieties of grout they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.

4. During the operation of the Licence, BO shall ensure that all the Varieties covered in the Licence are tested in rotation to the extent possible.

# ANNEX B

## List of Test Equipment

***(INDICATIVE LIST, FOR GUIDANCE ONLY)***

| Sl No. | Tests used in with Clause Reference | Test Equipment |
|---|---|---|
| 1 | Sampling And Mixing Procedure (Clause 5, Table 1, Annex B) | - As per clauses of Annex A of IS 17190: 2020<br>- Air conditioner and humidifier to maintain temperature of 27 ± 2 °C and humidity 65 ± 5 %<br>- Thermostatic Heater<br>- Stop Watch<br>- Hygrometer<br>- Planetary Mixer as per IS 1727 |
| 2 | Linear shrinkage (Clause 5, Table 1, Annex B) | - As per clauses of Annex B of IS 17190: 2020<br>- Weighing balance<br>- Steel scale/Vernier caliper<br>- Three Gang Moulds<br>- Stop watch<br>- Smooth inserts: rigid, non-absorbent frames, such as polyethylene or polytetrafluoroethylene (PTFE),<br>- Jolting Apparatus, or Jolting Table, as per IS 10078.<br>- Measuring Apparatus, as per IS 9459<br>- Calibration, Rod or Reference Rod<br>- A plate of Glass Sheet, steel or other impermeable material of similar size may be used.<br>- Hygrometer<br>- Air conditioner and humidifier to maintain temperature of 27 ± 2 °C and humidity 65 ± 5 %<br>- Thermostatic Heater |

| | | |
|---|---|---|
| 3 | Water absorption<br>(Clause 5, Table 1, Annex C) | - As per clauses of Annex C of IS 17190: 2020<br>- Three Gang Moulds<br>- Inserts, 1 mm thick, of rigid plastic (for example, PTFE) or high density polyethylene (HDPE) with no release agent.<br>- Jolting Apparatus, or Jolting Table, as per IS 10078.<br>- Tray<br>- Steel scale/Vernier caliper<br>- Weighing balance of accuracy of at least 0.1g<br>- Round or triangular spacers<br>- Water Bath |
| 4 | Flexural and Compressive Strength<br>(Clause 5, Table 1, Annex D) | - As per clauses of Annex D of IS 17190: 2020<br>- Three Gang Moulds<br>- Inserts, 1 mm thick, of rigid plastic (for example, PTFE) or high density polyethylene (HDPE) with no release agent.<br>- Jolting Apparatus, or Jolting Table, as per IS 10078.<br>- Steel scale/Vernier caliper<br>- UTM machine<br>- flexure device as shown in Fig. 2<br>- Testing Jig, as shown in Fig. 3 |
| 5 | Resistance to Abrasion<br>(Clause 5, Table 1, Annex E) | - As per clauses of Annex E of IS 17190: 2020<br>- Steel scale/Vernier caliper<br>- Abraser (single head or double head) as shown in Fig. 4 and Fig. 5 or equivalent model with<br>- roller wheels<br>- supplementary weights<br>- precision balance with least count at least 0.1g<br>- vacuum suction portion<br>- cleaner brush<br>- screw driver for specimen platform<br>- Mould of 125 mm diameter and thickness of 6 $\pm$ 1 mm |

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|---|---|---|
| 6 | Chemical Resistance (Optional Test)<br>(Clause 5, Table 1, Annex F) | - As per clauses of Annex F of IS 17190: 2020<br>- Cylindrical Mould, 25 ± 1 mm in diameter by 25 ± 1 mm high<br>- Wide Mouth Jars of sufficient capacity, fitted with plastic or plastic-lined metal screw caps<br>- Erlenmeyer Flasks, of sufficient capacity, fitted with standard taper joints and a reflux condenser attachment<br>- Compression Testing Machine<br>- Chemical Agents<br>- Ball Point Micrometer<br>- Try Square<br>- Weighing balance of accuracy of at least 0.1g |
| 7 | Transverse Deformability (S1)<br>(Clause 5, Table 1, Annex G) | - As per clauses of Annex G-2 of IS 17190: 2020<br>- Substrate — Polyethylene film with minimum<br>- Plastic Container<br>- Support — Rigid, smooth and flat support for the polyethylene film<br>- Anvil — A metallic construction with dimensions as shown in Fig. 5.<br>- Test Jig<br>- Template A as per Fig 7 of IS 15477<br>- Template B as per Fig 7 of IS 15477<br>- UTM Machine<br>- Flow Table as fig 9 |

# ANNEX C
# SCHEME OF INSPECTION AND TESTING

## 1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

### 1.3 **RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT**:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is : Entire quantity of grouts of the same Type of grouts manufactured in a single mix from same consignment of raw material shall constitute a control unit.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

**2. ENSURING COMPLIANCE THROUGH TESTING-** It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

**2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testingfacility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.**

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the

utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 **Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as "R" in Column 2 of Table 1)**, where different tests given in the specification shall be carried out in accordance with the method given in the specification**.** They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 **TEST RECORDS**- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratoryor any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

**3. PACKING AND MARKING -** The Standard Mark as given in the Schedule of the licence shall be indelibly marked on each bag/container provided always that the product so marked conforms to all requirements of the specification.

3.1 Packing and Marking shall be done as per the Indian Standard.

3.2 **Additional Marking requirements**: The material shall also be marked with the following additional requirement on the labels attached to each bag:

a) "For BIS certification details please visit www.bis.gov.in"

**4. REJECTION -** All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. 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

*(ONLY FOR GUIDANCE PURPOSE)*

| (1) | | | | (2) | (3) | | |
|---|---|---|---|---|---|---|---|
| **Test Details** | | | | **Test equipment requirement** R: required (or) S: Sub-contracting permitted | **Levels of Control** | | |
| **Cl.** | **Requirement** | **Test Methods** | | | **No. of Sample** | **Frequency** | **Remarks** |
| | | **Clause** | **Reference** | | | | |
| 5 | Linear shrinkage | 5 Table 1, Annex B | IS 17190 | R | One | Each Control Unit | - |
| | Water absorption after 30 min | 5 Table 1, Annex C | IS 17190 | R | One | Each Control Unit | - |
| | Water absorption after 240 min (optional) | 5 Table 1, Annex C | IS 17190 | R | One | Each Control Unit | - |
| | Compressive Strength | 5 Table 1, Annex D | IS 17190 | R | One | Each Control Unit | - |
| | Flexural Strength | 5 Table 1, Annex D | IS 17190 | R | One | Each Control Unit | - |
| | Abrasion resistance | 5 Table 1, Annex E | IS 17190 | R | One | Each Control Unit | - |
| | Chemical Resistance (Optional) | 5 Table 1, Annex F | IS 17190 | S | One | Once in a month | All types produced during the period shall be tested |
| | Transverse Deformation | 5 Table 1, Annex G | IS 17190 | S | One | Once in a month | All types produced during the period shall be tested |