



उत्पाद मैनुअल
सिरेमिक, पच्चीकारी और पत्थर की टाइलों में प्रयुक्त आसंजक के लिए
आई एस 15477:2019 के अनुसार

PRODUCT MANUAL
ADHESIVES FOR USE WITH CERAMIC, MOSAIC AND STONE TILES
ACCORDING TO IS 15477:2019

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.

1.	मानक संख्या IS No.	:	IS 15477:2019
	शीर्षक Title	:	Adhesives for use with Ceramic, Mosaic and Stone Tiles
	संशोधनों की संख्या No. of amendments	:	2
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Nil Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/ Factory Surveillance
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer to Annex-A
c)	नमूने का परिमाण Sample Quantity	:	25 kg for all tests 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)

d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request		- Same as the scope of licence - Mixing instructions of adhesive (Clause 7 of IS 15477)
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer to Annex-B
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer to Annex-C
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	(i) Open time (Clause 5.3) (ii) Adjustment time (Clause 5.4) (iii) Slip (Clause 5.5) 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 readyreference 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 15477:2019 with the following scope:		
	Name of the product	Adhesives for use with Ceramic, Mosaic and Stone Tiles	
	Type	Type 1 / Type 2/Type 3/ Type 4 / Type 5	
	Application	(i)Intended for vertical application (ii) Other than Vertical application	
	Slip resistance (If applicable)	T	
	Deformability classification (As applicable)	S1/S2	

भारतीय मानक ब्यूरो
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ANNEX A

Grouping Guidelines

1. IS 15477 : 2019 covers adhesives for use with Ceramic, Mosaic and Stone Tiles, which are classified as given below:

- a) Type - Type 1 / Type 2/Type 3/ Type 4 / Type 5
- b) Based on method of application – Intended for vertical application /
Other than vertical application
 - i) Slip Resistance – T
 - ii) Deformability – Deformable adhesive –S1
High deformable adhesive – S2

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

- a) Sample of each type of adhesive for each method of application shall be tested for all requirements to cover that variety of adhesive in the scope of the licence.
- b) Separate sample of Deformable adhesive (S1) and High deformable adhesive (S2) shall be tested to cover that particular variety in the scope of the licence.
- c) If sample tested is intended for vertical application, variety other than vertical application may also be covered in the scope of the licence.

3. The Firm shall declare the various varieties of adhesives 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	Tensile adhesion strength (Clause 5.1)	- As per clause A-1, Annex A of IS 15477 : 2019 - Tile cutter - Steel scale/Vernier caliper - Micrometre - Weighing balance - Stop watch - Straight edge trowel - Water bath with temperature controller to maintain temperature of 27 ± 2 °C - Jig levelling tiles and test unit holder - Suitable arrangement for holding substrate during testing - Thermometer - Hygrometer - Air conditioner and humidifier to maintain temperature of 27 ± 2 °C and humidity 65 ± 5 %
2	Shear adhesion strength (Clause 5.2)	- As per clause B-1, Annex B of IS 15477 : 2019 - Tile cutter - Steel scale/Vernier caliper - Micrometre - Weighing balance - Stop watch - Straight edge trowel - Water bath with temperature controller to maintain temperature of 27 ± 2 °C - Thermometer - Hygrometer - Air conditioner and humidifier to maintain temperature of 27 ± 2 °C and humidity 65 ± 5 %
3	Open time (Clause 5.3)	- Square notched trowel - Tile cutter - Micrometre

4	Adjustment Time (Clause 5.4)	- Steel scale / Vernier caliper - Weight of 2 kg - Stop watch - Chipboard - Gypsum board - Protractor
5	Slip (Required for Vertical Application only) (Clause 5.5)	- As per clause E-1, Annex E of IS 15477 : 2019 - Tile cutter - Micrometre - Steel straight edge - Stop watch - Protractor
6	Deformability (Required for Vertical Application only) (Clause 5.6)	- As per clause F-1, Annex F of IS 15477 : 2019
7	Conditioning (Clause 6)	- Air conditioner and humidifier to maintain temperature of 27 ± 2 °C and humidity 65 ± 5 %

ANNEX C

SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that during operation of BIS licence, manufacturers will implement a Quality Assurance Plan (QAP) 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 (QAP) defining the control unit (i.e. lot/batch etc.), the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and declare the arrangement for testing i.e. whether in-house or subcontracting/sharing for each applicable test and submit the same to BIS Branch Office for information. The manufacturer shall comply with the QAP and maintain test records in accordance with para 2.1.

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 adhesive of the same Type manufactured at a time in one ball mill 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**. Manufacturer has the discretion of declaring their own levels of control or accept the levels of control given in this document.

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.

2. ENSURING COMPLIANCE THROUGH TESTING- manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard for which they may have in-house test facilities. However, there is no obligation to maintain in-house laboratory. Licensee may use alternative arrangements for tests of the production as per the declared QAP. Various alternatives are available for operation of BIS certification as given below and the relevant guidelines for availing such relaxations by the manufacturers, as amended from time to time, are to be referred :

- i) Shared testing resources like common facility,
- ii) Cluster based testing facility,
- iii) Sub-contracting to outside laboratories which may either be:
 - a) BIS recognised/empanelled laboratories, or
 - b) Any accredited laboratory as per ISO/IEC 17025

2.1 TEST RECORDS- The manufacturers shall maintain test records for the tests carried out (either in-house or at a sub-contracted or at shared test facility) to establish conformity of the product to the Standard for operation of licence. For the tests being subcontracted or conducted at a shared test facility, test results issued by the laboratories or test facilities, shall be made available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark as given in the Schedule of the licence shall be indelibly and legibly marked on each bag or liquid container of adhesive, provided always that the material so marked conforms to each requirement of the specification.

3.1 Marking shall be done as per Clause 8.2 of IS 15477:2019.

3.2 Packing of the adhesives shall be done as per Clause 8.1 of IS 15477:2019.

3.3 Additional Marking requirements: Additionally, the following shall also be marked on product or package :

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

4. REJECTION - 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*(Recommended Levels of Control by BIS- for Guidance Only)*

(1)				(3)		
Test Details				Levels of Control		
Cl.	Requirement	Test Methods		No. of Sample	Frequency	Remarks
		Clause	Reference			
5.1	Tensile adhesion strength	5.1 Annex A	IS 15477	One	Once in two months for each type of adhesive	Additional sample shall be tested whenever source of raw material or composition changes
5.2	Shear adhesion strength	5.2 Annex B	IS 15477	One	Once in two months for each type of adhesive	
5.3	Open time	5.3 Annex C	IS 15477	One	Each control unit	-
5.4	Adjustment time	5.4 Annex D	IS 15477	One	Each control unit	-
5.5	Slip	5.5 Annex E	IS 15477	One	Each control unit	-
5.6	Deformability	5.6 Annex F	IS 15477	One	Once in a month for each type of adhesive and for each deformability classification	