IS 12830 : 1989
(Reaffirmed 1995)

Indian Standard

RUBBER BASED ADHESIVES FOR FIXING PVC TILES TO CEMENT — SPECIFICATION

भारतीय मानक

सीमेंट पर पी वी सी टाइलें जमाने के लिए रबड़ के आसंजक — विशिष्टि

UDC 665·939 : 678·061

BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

May 1990

Price Group 2

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards on 6 November 1989, after the draft finalized by the Adhesives Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

These types of adhesives are used for bonding PVC tiles to cement on the floors and walls of buildings.

This standard contains requirements for colour (**3.1**), consistency (**3.2**) and open assembly time (**3.4**) which call for agreement between the purchaser and the supplier.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

RUBBER BASED ADHESIVES FOR FIXING PVC TILES TO CEMENT — SPECIFICATION

1 SCOPE

1.1 This standard prescribes the requirements and methods of sampling and test for rubber based adhesives used for bonding PVC tiles to cement, floors and walls of buildings.

2 REFERENCES

2.1 The following Indian Standards are necessary adjuncts to this standard:

IS No.	*Title*
IS 715 (Part 2) : 1976	Specification for coated abrasive: Part 2 Special and mechanized application (*third revision*)

3 REQUIREMENTS

3.1 Description

The material shall be manufactured from rubber, compounding ingredients, resins and appropriate solvents. The colour of the material shall be compatible with the application of the material as may be agreed to between the purchaser and the supplier.

3.2 Consistency

The material shall be of a consistency suitable for its mode of application.

3.3 Open Assembly Time

The open assembly time shall be as agreed to between the purchaser and the supplier depending upon the application and shall not vary from batch to batch.

3.4 Adhesion Strength

The adhesion strength shall be as follows.

3.4.1 *Strength of Joint in Shear*

When tested as prescribed in Annex A, the material shall have shear strength not less than 8 kg/cm^2 after conditioning in standard atmospheric condition (**A-4**) and not less than 6 kg/cm^2 after heat ageing (Annex B) and immersion in water (Annex C).

3.5 Keeping Quality

The material shall comply with the requirements specified in **3.1** to **3.4** when it has been stored in the original closed containers according to the manufacturer's instructions for a minimum period of one year from the date of manufacture.

4 PACKING AND MARKING

4.1 Packing

The material shall be securely packed in airtight containers as agreed to between the purchaser and the supplier.

4.2 Marking

The packages shall be marked legibly and indelibly with the following information:

a) Name of the material;

b) Indication of the source of manufacture;

c) Date by which the material becomes unusable;

d) Mass or volume of the material in the package;

e) Direction for storage, if any;

f) Batch number or month and year of manufacture; and

g) Time taken, if any, for attaining the full bond strength.

4.2.1 The manufacturer shall also furnish written instructions on the lines as given below:

a) Preparation of cement surface;

b) Method of application of adhesive; and

c) Maximum and minimum open and closed assembly times.

ANNEX A

(*Clause* 3.4.1)

TEST FOR SHEAR STRENGTH OF JOINT

A-1 APPARATUS

A-1.1 Tensile Testing Machine

Any suitable motor driven, tensile strength testing machine may be used. The capacity of the machine shall be such that any reading taken during or on completion of the test shall fall within the loading range (loading range being the range within which the indicated load shown by calibration is correct within 1·5 percent). The speed of the moving head of the tensometer when running free shall be 250 ± 50 mm per minute.

A-1.2 Roller

A steel roller of 135 ± 2 mm diameter and 90 ± 1 mm width covered with rubber approximately 6 mm thick having a hardness of 80 ± 1 RHD shall be used. The weight of the roller, which applies pressure to the specimen shall be 10 kg. It shall be so constructed that the weight of the handle is not added to the weight of the roller during use (*see* Fig. 1).

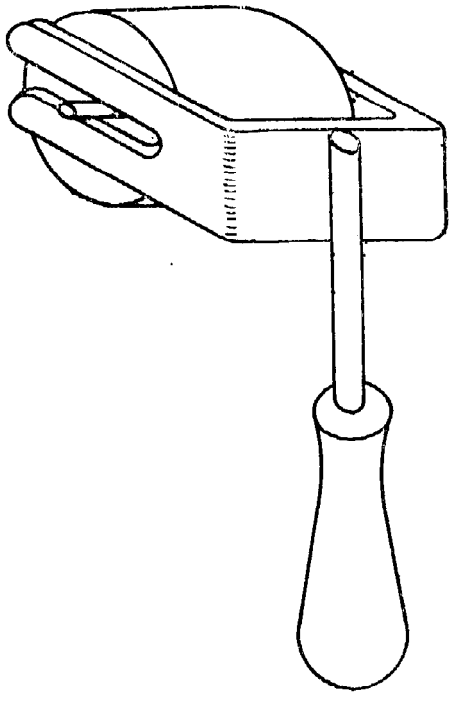

FIG. 1 ROLLER FOR ADHESION STRENGTH TEST

A-2 NUMBER OF TEST SPECIMENS

A-2.1 The test shall be carried out on three test specimens.

A-3 PREPARATION OF TEST SPECIMENS

A-3.1 Take strips of asbestos sheet of 5 mm thickness measuring 150 × 25 mm. Make strips of PVC tiles measuring 150 × 25 mm. Buff the surface of PVC tiles and asbestos sheet with an emery coated abrasive paper No. 50 [*see* IS 715 (Part 2) : 1976] and then dust off with a flat 2·5 cm brush. Over an area measuring 25 × 2·5 mm at one end of surface of asbestos sheet and buffed tile, apply sufficient quantity of adhesive so that a uniform layer of adhesive is formed on both asbestos sheet and tile surfaces. Allow to remain in open air for 10 to 15 minutes. At this time when the adhesive film is dry to a point and there is still an aggressive tackiness but not sticking to the finger when touched, align the coated surfaces of asbestos and tile face to face carefully, without entrapping air, in such a way that the free ends of the strips lie in opposite directions. Press the joint in a suitable press at a pressure of 8 to 10 kg/cm². Allow the bonded specimen to dry under prevailing conditions of temperature and humidity for 24 hours.

A-4 CONDITIONING

A-4.1 Condition the test specimens for 48 hours at a temperature of 27 ± 2°C and 65 ± 5 percent relative humidity.

A-5 PROCEDURE

A-5.1 Fix the two free ends of the test specimen in the two jaws of the testing machine which shall be 125 mm apart. Use shims (*see* Note) in the grips so that the test specimen is properly centred and is held straight in the grips and the applied force is in the plane of the bonded area. Record the load required to separate or break the joint.

NOTE — The shims may be blocks of metal, wood or similar material. The thickness of the shim shall be such that the sum of its thickness and that of the free end of the strip shall be equal to the total thickness at the sandwich area.

A-6 REPORT

A-6.1 Report the shear strength in kg/cm², calculated from the load required to separate or break the joint and the area of the joint, for each test specimen and the mean of the three values.

ANNEX B

(*Clause* 3.4.1)

SHEAR STRENGTH AFTER HEAT AGEING

B-1 The test specimen prepared as prescribed in Annex A shall be kept in an air oven maintained at a temperature of 70 ± 2°C for 100 h and then tested for shear strength as prescribed in Annex A.

ANNEX C

(*Clause* 3.4.1)

SHEAR STRENGH AFTER WATER IMMERSION

C-1 The test specimen prepared as prescribed in Annex A shall be immersed in water at 27 ± 20°C for 24 hours and then tested for shear strength as prescribed in Annex A.

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