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IS 12118-1 (1987): Two-part polysulphide- based sealants - Specification, Part 1: General requirements [CED 13: Building Construction Practices including Painting, Varnishing and Allied Finishing]



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*Indian Standard*  
SPECIFICATION FOR  
TWO-PART POLYSULPHIDE-BASED SEALANTS  
PART 1 GENERAL REQUIREMENTS

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*Indian Standard*SPECIFICATION FOR  
TWO-PART POLYSULPHIDE-BASED SEALANTS

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( Continued on page 2 )

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( Continued on page 8 )

*Indian Standard***SPECIFICATION FOR  
TWO-PART POLYSULPHIDE-BASED SEALANTS****PART 1 GENERAL REQUIREMENTS****0. FOREWORD**

**0.1** This Indian Standard (Part 1) was adopted by the Bureau of Indian Standards on 30 June 1987, after the draft finalized by the Building Construction Practices Sectional Committee had been approved by the Civil Engineering Division Council.

**0.2** Two-part polysulphide based sealant consists of two components, essentially a component containing polysulphide polymer and a separate component containing the curing agent, which are mixed together before application and cure at an ambient temperature to form a rubber like solid.

**0.3** This standard is based on BS 4254 : 1983 Specification for two-part polysulphide based sealants. The products are intended for use in normal atmospheric environments in general building application. For use in areas where the variations in temperature and humidity are large and/or the resilience of the joint is required to be lesser than one-quarter of its width as well as for special performance like a basement wall subjected to significant water pressure, the ability of the product to perform in such a situation and in case of potable water storage environment, its effect on the contained liquid, will need to be ascertained before use. For this purpose, it may also necessitate special performance consideration and tests specific to the particular requirement.

**0.4** This standard is being formulated in two parts as follows:

- a) Part 1 General requirements, and
- b) Part 2 Methods of tests.

**0.5** 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\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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\*Rules for rounding off numerical values ( *revised* ).

## **1. SCOPE**

**1.1** This standard ( Part 1 ) covers general requirements of two grades of two-part polysulphide based sealants for use in general building applications, namely, pouring grade and gun grade. Pouring grade sealants are intended for use in horizontal joints. Gun grade sealants are intended for use in vertical and inclined joints ( that is, glazing applications ).

## **2. GRADES OF SEALANTS**

**2.1 Pouring Grade** — A sealant which flows sufficiently to give reasonably smooth level surface when applied in a horizontal upward facing joint at ambient temperature.

**2.2 Gun Grade** — A sealant which permits application in a suitable joint of any aspect or inclination without appreciable slumping at ambient temperature.

## **3. SELECTION OF MATERIAL**

**3.1** This standard takes into account primer system used on certain two-part polysulphide based joint sealants. The sealant shall cure at ambient temperature and humidity when applied according to manufacturers instruction. If it is intended to use the sealant in applications other than general building, it may necessitate special performance tests considering substrate, conditions, etc. Primer systems are recommended for use with certain two-part polysulphide based sealants. The test requirements in this standard take account of such systems. Where a particular primer is recommended by a manufacturer for a specific surface, that test surface shall be treated with the primer following the manufacturers instructions.

## **4. TEST CONDITIONS**

**4.1 General** — All tests shall be carried out on material obtained from previously unopened container.

**4.2** The components shall be capable of being readily mixed to form a sealant complying with the standard at any time up to the expiry date, when stored under the conditions stated on the package.

## **5. TEST REQUIREMENTS**

**5.1** The material shall meet the requirements given in 5.1.1 to 5.1.7. The methods of tests have been given in Part 2 of this standard.

### **5.1.1 Rheological Properties**

**5.1.1.1 Pouring grade sealants** — The sealant shall exhibit a smooth and level surface, when tested in accordance with 2 of Part 2 of this standard.



**5.1.1.2 Gun grade sealant** — The sealant shall not slump in vertical displacement by more than 1.0 mm, when tested in a vertical position and shall not protrude in front of the original profile in a horizontal position, when tested in accordance with 2 of Part 2 of this standard.

**5.1.2 Plastic deformation** — The sealant shall have a plastic deformation not greater than 25 percent, when tested in accordance with 3 of Part 2 of this standard.

**5.1.3 Adhesion and Tensile Modulus** — Adhesion and tensile modulus shall be considered satisfactory, if the total area ( length  $\times$  depth ) of failure does not exceed 100 mm<sup>2</sup> and the force required to produce the extension shall not be less than 25 N and not more than 270 N. In case of test after cycles of extension, the total area of failure shall not exceed 100 mm<sup>2</sup>. The procedure for test is given in 4 of Part 2 of this standard.

**5.1.4 Application Life** — The sealant shall have an application life of not less than 2 h, when tested in accordance with 5 of Part 2 of this standard.

**5.1.5 Adhesion in Peel** — The average peel strength of four strips of backing material for each of the test surfaces shall be not less than 25 N and the material shall not fail in adhesion over more than 25 percent of the test area, when tested in accordance with 6 of Part 2 of this standard.

**5.1.6 Loss of Mass After Heat Ageing** — The loss of mass shall not exceed 12 percent for pouring grade and 6 percent for gun grade when tested according to 7 of Part 2 of this standard.

**5.1.7 Staining** — The sealant shall produce no staining on the primed or unprimed surface of the test mortar, when tested in accordance with 8 of Part 2 of this standard.

## 6. MARKING

**6.1** The sealant shall bear the manufacturer's name or his trade-mark, if any.

**6.1.1** The sealants may also be marked with the Standard Mark.

**NOTE** — The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers, may be obtained from the Bureau of Indian Standards.

## **7. PACKING**

**7.1** The sealant shall be suitably packed. Each package shall indicate the followings:

- a) Manufacturer's name or trade-mark,
- b) Weight of the components,
- c) Instructions for use and storage including primer system,
- d) Type and grade of sealant,
- e) Date of manufacture, and
- f) Date of expiry.

## **8. SAMPLING**

**8.1** Representative samples of the material shall be taken and conformity of the material to the requirements of this standard shall be determined according to the procedure given in Appendix A.

# **A P P E N D I X   A**

( Clause 8.1 )

## **SAMPLING OF TWO-PART POLYSULPHIDE BASED JOINT SEALANTS**

### **A-1. SCALE OF SAMPLING**

**A-1.1 Lot** — All the packages of the same type, same grade and belonging to the same batch of manufacture shall be grouped together to constitute a lot.

**A-1.2** For ascertaining the conformity of the material in the lot to the requirements of this standard, samples shall be tested from each lot separately.

**A-1.3** The number of packages to be selected from the lot shall depend on the size of the lot and shall be according to Table 1.

**A-1.3.1** These packages shall be selected at random from the lot. In order to ensure the randomness of selection, procedures given in IS : 4905-1968\* may be followed.

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\*Methods for random sampling.

**TABLE 1 SCALE OF SAMPLING**  
( Clause A-1.3 )

NO. OF PACKAGES IN THE LOT	SAMPLE SIZE
(1)	(2)
Up to 25	2
26 to 50	3
51 to 150	5
151 and above	8

## **A-2. TEST SAMPLES AND REFEREE SAMPLES**

**A-2.1** From each of the packages selected according to **A-1.3** approximately equal quantity of material shall be taken by the suitable sampling instrument and shall be mixed thoroughly so as to constitute the composite sample. The quantity of material in the composite sample shall be sufficient for making triplicate determinations for all the requirements given in this standard.

**A-2.2** The composite sample shall be divided into three equal parts, one for the purchaser, another for the supplier and the third for the referee. Each of these parts shall be transferred to thoroughly dried sample containers which are then sealed air-tight and labelled with all the particulars of sampling.

**A-2.3 Referee Sample** — Referee sample shall bear the seals of the purchaser and the vendor. This shall be kept in a cool and dry place as agreed to between the purchaser and the vendor so as to be used in case of dispute between the two.

## **A-3. NUMBER OF TESTS AND CRITERIA FOR CONFORMITY**

**A-3.1** All the characteristics given in the specification shall be tested on the composite sample.

**A-3.2** The lot shall be declared as conforming to the requirements of this standard if all the test results on the composite sample meet the relevant specification requirements.

## IS : 12118 ( Part 1 ) - 1987

( Continued from page 2 )

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