

इंटरनेट

मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

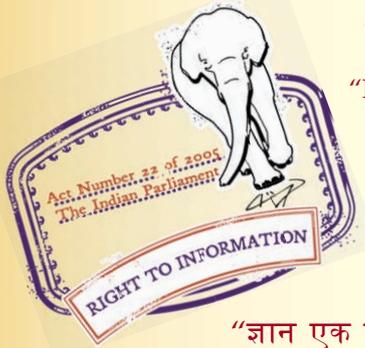
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 11433-1 (1985): Specification for one part gun-grade polysulphide- based joints sealants, Part 1: General requirements [CED 13: Building Construction Practices including Painting, Varnishing and Allied Finishing]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartḥari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE



IS : 11433 (Part 1) : 1985
(Reaffirmed 1995)

Indian Standard

**SPECIFICATION FOR
ONE-PART GUN-GRADE POLYSULPHIDE-BASED
JOINT SEALANTS**

PART 1 GENERAL REQUIREMENTS

(First Reprint SEPTEMBER 1997)

UDC 691.587 : 678.046.73

© *Copyright* 1986

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

*Indian Standard*SPECIFICATION FOR
ONE-PART GUN-GRADE POLYSULPHIDE-BASED
JOINT SEALANTS**PART 1 GENERAL REQUIREMENTS**

Building Construction Practices Sectional Committee, BDC 13

*Chairman*SHRI C. P. MALIK
C-4/3B Safdarjung Development Area,
New Delhi 110016*Members**Representing*

ADDITIONAL DIRECTOR, ARCHITECTURE	Research, Designs & Standards Organization (Ministry of Railways), Lucknow
JOINT DIRECTOR, ARCHITECTURE (<i>Alternate</i>)	
SHRI P. D. AGARWAL	Public Works Department, Government of Uttar Pradesh, Lucknow
SUPERINTENDING ENGINEER (<i>Alternate</i>)	
SHRI D. R. BATLIVALA	Bhabha Atomic Research Centre, Bombay
SHRI B. K. CHAKRABORTY	Housing & Urban Development Corporation Ltd, New Delhi
SHRI V. K. GROVER (<i>Alternate</i>)	
CHIEF ENGINEER (BLDGS)	Public Works Department, Government of Tamil Nadu, Madras
SUPERINTENDING ENGINEER (SPECIAL BUILDING CIRCLE) (<i>Alternate</i>)	
CHIEF ENGINEER	Public Works Department, Government of Rajasthan, Jaipur
SUPERINTENDING ENGINEER (S & S) (<i>Alternate</i>)	
CHIEF ENGINEER (TRAINING)	Central Public Works Department, New Delhi
SUPERINTENDING ENGINEER (TRAINING) (<i>Alternate</i>)	
CHIEF ENGINEER	Engineer-in-Chief's Branch, Army Headquarters
SHRI A. V. GOPALKRISHNA (<i>Alternate</i>)	
DR M. P. DHIR	Central Road Research Institute, New Delh
SHRI S. S. GILL	Public Works Department, Government of Punjab, Chandigarh

(Continued on page 2)

© Copyright 1986

BUREAU OF INDIAN STANDARDS

This publication is protected under the *Indian Copyright Act (XIV of 1957)* and reproduction in whole or in part by any means except with written permission of the publisher shall be deemed to be an infringement of copyright under the said Act.

(Continued from page 1)

<i>Members</i>	<i>Representing</i>
SHRI K. M. JHA	National Industrial Development Corporation Ltd, New Delhi
SHRI G. B. JAHAGIRDAR (Alternate)	
SHRI M. KARTIKAYAN	Builders' Association of India, Bombay
SHRI R. L. KUMAR	Institution of Surveyors, New Delhi
SHRI V. G. PATWARDHAN (Alternate)	
SHRI G. K. MAJUMDAR	Hindustan Prefab Ltd, New Delhi
SHRI H. S. PASRICHA (Alternate)	
SHRI R. C. MANGAL	Central Building Research Institute (CSIR), Roorkee
SHRI J. S. SHARMA (Alternate)	
SHRI H. N. MISHRA	Forest Research Institute & College, Dehra Dun
SHRI K. S. PRUTHI (Alternate)	
SHRI M. N. RAJABAMAN	Raman Brothers, Madras
SHRI A. S. VASAN (Alternate)	
SHRI S. G. RANADIVE	Indian Institute of Architects, Bombay
SHRI RUMMY SHROFF (Alternate)	
SHRI T. S. RATNAM	Bureau of Public Enterprises, Ministry of Finance
SHRI P. R. KALRA (Alternate)	
SHRI P. K. SINGHA ROY	State Bank of India, Bombay
SHRI K. BALBIR SINGH	Life Insurance Corporation of India, Bombay
SHRI M. V. BHIDE (Alternate)	
SHRI K. S. SRINIVASAN	National Buildings Organization, New Delhi
DEPUTY DIRECTOR (Alternate)	
SHRI SUSHIL KUMAR	National Buildings Construction Corporation Ltd, New Delhi
SHRI S. R. TAMBE	Public Works & Housing Department, Bombay
SHRI B. T. UNWALLA	The Institution of Engineers (India), Calcutta
SHRI G. RAMAN, Director (Civ Engg)	Director General, BIS (<i>Ex-officio Member</i>)

Secretary

SHRI A. K. SAINI
Deputy Director (Civ Engg), BIS

Joints in Structure Subcommittee, BDC 13 : 14

Convener

SHRI HARISH CHANDRA Central Public Works Department, New Delhi

Members

SHRI J. P. BAJAJ Institution of Surveyors, New Delhi
LT-COL C. T. CHARI Engineer-in-Chief's Branch, Army Headquarters, New Delhi

SHRI S. K. GUPTA (Alternate)

SHRI R. C. P. CHOUDHARY Engineers India Ltd, New Delhi

SHRI K. C. KARAMCHANDANI (Alternate)

SHRI P. S. GOKHALE Gammon India Ltd, Bombay

SHRI N. PRABHAKAR (Alternate)

(Continued on page 8)

Indian Standard

SPECIFICATION FOR ONE-PART GUN-GRADE POLYSULPHIDE-BASED JOINT SEALANTS

PART 1 GENERAL REQUIREMENTS

0. FOREWORD

0.1 This Indian Standard (Part 1) was adopted by the Indian Standards Institution on 23 December 1985, after the draft finalized by the Building Construction Practices Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 One-part gun-grade polysulphide-based sealant contains a polysulphide polymer and a curing system which is activated by exposure to moisture and cures to a rubber like solid.

0.3 This standard is based on BS 5215 : 1975 'Specification for one-part gun-grade polysulphide-based sealants', issued by the British Standards Institution.

0.4 The standard for one-part gun-grade polysulphide-based joint sealants is being formulated in two parts as follows:

Part 1 General requirements, and

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.

1. SCOPE

1.1 This standard (Part 1) covers general requirements of one-part gun-grade polysulphide-based sealants used in some sealing or glazing applications in buildings and structures.

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

2. SELECTION OF MATERIAL

2.1 The selection of base polymer fillers and other ingredients shall be as suggested by the manufacturer. The sealant shall cure at ambient temperature and humidity when applied as per manufacturer's instructions. Where a particular primer is recommended by the manufacturer for a specific surface, that surface shall be treated with that primer as per the manufacturer's instructions. The report of result shall indicate whether or not primer was used.

3. TEST CONDITIONS

3.1 General — All tests shall be carried out on material obtained from previously unopened containers.

3.2 Curing Conditions — Standard cure conditions shall be $40 \pm 2^\circ\text{C}$ temperature and 95 ± 5 percent relative humidity.

3.3 Storage Life — The sealant shall be capable of meeting the requirements of this standard at any time up to the expiry date as declared by the manufacturer. The sealant shall be stored under the conditions stated on the package by the manufacturer.

4. TEST REQUIREMENTS

4.1 The material shall meet the requirements as given in 4.1.1 to 4.1.7. The methods of tests have been given in Part 2 of this standard.

4.1.1 Rheological Properties — The flow of the sealant shall be such that it shall not slump or sag in vertical or horizontal displacement or slip from the channel when tested in accordance with 2 of Part 2 of this standard.

4.1.2 Recovery—The cure of the sealant shall be considered satisfactory if it exhibits recovery of not less than 75 percent, and if the tensile force required to extend the specimen is not less than 25 N or greater than 300 N when tested in accordance with 3 of Part 2 of this standard.

After the test the sealant shall be cut open with a clean sharp knife; there shall be no substantial transfer of the sealant onto the knife blade.

4.1.3 Mass Loss After Heat Ageing — The mass loss, which includes volatile content, shall not exceed 10 percent. The sealant shall exhibit no cracks, bubbles or chalking, when tested in accordance with 4 of Part 2 of this standard.

4.1.4 Staining—There shall be no staining on the test mortar when tested in accordance with 5 of Part 2 of this standard.

4.1.5 Test for Cyclic Adhesion — Adhesion and cohesion shall be considered satisfactory if after three cycles the total area (length \times depth) of failure does not exceed 100 mm² per specimen when tested in accordance with 6 of Part 2 of this standard.

4.1.6 Test for Adhesion in Peel

4.1.6.1 Adhesion to aluminium, stainless steel and cement mortar — For each of the test surfaces, that is aluminium, stainless steel and cement mortar, the average peel strength shall be not less than 25 N and the material shall not fail in adhesion over more than 25 percent of the area of the test surface when tested in accordance with 7 of Part 2 of this standard. For each test surface four strips shall be tested and the average peel strength recorded. If all strips meet the requirements stated in the preceding paragraph, the sealant shall be deemed to comply the test.

4.1.6.2 Adhesion to glass after sunlamp exposure through glass — For each of the test strips the average peel strength shall be not less than 25 N and the material shall not fail in adhesion over more than 25 percent of the area of the test surface when tested in accordance with 8 of Part 2 of this standard.

4.1.7 Adhesion After Heat Ageing — The sealant shall be considered satisfactory if the force required to extend the specimen is not less than that required to extend the specimen in 4.1.2 and not greater than 300 N when tested in accordance with 9 of Part 2 of this standard. Adhesion and cohesion shall be considered satisfactory if the total area of failure does not exceed 100 mm² per specimen.

5. MARKING

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

5.2 The sealant may also be marked with the Standard Mark.

5.2.1 The use of the Standard Mark is governed by the provision of Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

6. PACKING

6.1 The sealant shall be suitably packed. Each package shall indicate the following:

- a) Manufacturer's name or trade-mark, if any;
- b) Quantity; and
- c) Instructions for use and storage.

7. SAMPLING

7.1 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 7.1)

SAMPLING OF ONE-PART GUN-GRADE 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.

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

*Methods for random sampling.

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.

TABLE 1 SCALE OF SAMPLING

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-2.2 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.

(Continued from page 2)

Members

SHRI G. B. JAHAGIRDAR

SHRI M. P. JAISINGH

SHRI R. K. JAIN (Alternate)

SHRI S. R. KULKARNI

SHRI D. B. GHOSH (Alternate)

SHRI DATTA S. MALIK

DR M. NAYAK

SHRI P. SRINIVASAN (Alternate)

SHRI Y. R. PHULL

SHRI K. L. SETHI (Alternate)

SHRI R. V. RAMAMURTHY

SHRI R. P. SETH (Alternate)

REPRESENTATIVE

SHRI T. M. SHAH

SHRI J. P. GUPTA (Alternate)

SHRI K. S. SRINIVASAN

SHRI A. K. LAL (Alternate)

**SUPERINTENDING SURVEYOR OF
WORKS (CZ)**

SURVEYOR OF WORKS (CZ) (Alternate)

SHRI SUSHIL KUMAR

SHRI DALJIT SINGH (Alternate)

Representing

**National Industrial Development Corporation
Ltd, New Delhi**

**Central Building Research Institute (CSIR);
Roorkee**

M. N. Dastur & Company (P) Ltd, Calcutta

**Indian Institute of Architects, Bombay
Concrete Association of India, Bombay**

Central Road Research Institute, New Delhi

Directorate General, Border Roads, New Delhi

**Builders' Association of India, Bombay
Tirath Ram Ahuja Pvt Ltd, New Delhi**

National Buildings Organization, New Delhi

Central Public Works Department, New Delhi

**National Buildings Construction Corporation
Ltd, New Delhi**

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones: 323 0131, 323 3375, 323 9402

Fax : 91 11 3234062, 91 11 3239399, 91 11 3239382

Telegrams : Manaksanstha
(Common to all Offices)

Central Laboratory:

Plot No. 20/9, Site IV, Sahibabad Industrial Area, SAHIBABAD 201010

Telephone

8-77 00 32

Regional Offices:

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002 323 76 17

*Eastern : 1/14 CIT Scheme VII M, V.I.P. Road, Maniktola, CALCUTTA 700054 337 86 62

Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160022 60 38 43

Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600113 235 23 15

†Western : Manakalaya, E9 Behind Marol Telephone Exchange, Andheri (East),
MUMBAI 400093 832 92 95

Branch Offices:

'Pushpak', Nurmohamed Shaikh Marg, Khanpur, AHMEDABAD 380001 550 13 48

‡Peenya Industrial Area, 1st Stage, Bangalore - Tumkur Road,
BANGALORE 560058 839 49 55

Gangotri Complex, 5th Floor, Bhadbhada Road, T. T. Nagar, BHOPAL 462003 55 40 21

Plot No. 62-63, Unit VI, Ganga Nagar, BHUBANESHWAR 751001 40 36 27

Kalaikathir Buildings, 670 Avinashi Road, COIMBATORE 641037 21 01 41

Plot No. 43, Sector 16 A, Mathura Road, FARIDABAD 121001 8-28 88 01

Savitri Complex, 116 G. T. Road, GHAZIABAD 201001 8-71 19 96

53/5 Ward No. 29, R. G. Barua Road, 5th By-lane, GUWAHATI 781003 54 11 37

5-8-58C, L. N. Gupta Marg, Nampally Station Road, HYDERABAD 500001 20 10 83

E-52, Chitaranjan Marg, C-Scheme, JAIPUR 302001 37 29 25

117/418 B, Sarvodaya Nagar, KANPUR 208005 21 68 76

Seth Bhawan, 2nd Floor, Behind Leela Cinema, Naval Kishore Road,
LUCKNOW 226001 23 89 23

Patliputra Industrial Estate, PATNA 800013 26 23 05

T. C. No. 14/1421, University P. O. Palayam,
THIRUVANANTHAPURAM 695034 6 21 17

NIT Building, Second Floor, Gokulpat Market, NAGPUR 440010 52 51 71

Institution of Engineers (India) Building, 1332 Shivaji Nagar, PUNE 411005 32 36 35

*Sales Office is at 5 Chowringhee Approach, P. O. Princep Street,
CALCUTTA 700072 27 10 85

†Sales Office is at Novelty Chambers, Grant Road, MUMBAI 400007 309 65 28

‡Sales Office is at 'F' Block, Unity Building, Narashimaraja Square,
BANGALORE 560002 222 39 71