IS : 1834 - 1984
(Reaffirmed 1995)

Indian Standard

SPECIFICATION FOR HOT APPLIED SEALING COMPOUNDS FOR JOINTS IN CONCRETE

(*First Revision*)

Third Reprint FEBRUARY 1999

UDC 625·848 : 625·762·1·083·5 [665·637·8]

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

Gr 5

October 1984

Indian Standard

SPECIFICATION FOR HOT APPLIED SEALING COMPOUNDS FOR JOINTS IN CONCRETE

(First Revision)

Building Construction Practices Sectional Committee, BDC 13

Chairman

SHRI C. P. MALIK
G 4/98, Safdarjung Development Area,
New Delhi 110016

Members	*Representing*
SHRI P. D. AGARWAL	Public Works Department, Government of Uttar Pradesh, Lucknow
SHRI R. K. MATHUR (*Alternate*)	
SHRI D. R. BATLIVALA	Bhabha Atomic Research Centre, Bombay
SHRI B. K. CHAKRABORTY	Housing and Urban Development Corporation Ltd, New Delhi
SHRI S. M. GOEL (*Alternate*)	
CHIEF ENGINEER (BLDGS)	Public Works Department, Government of Tamil Nadu, Madras
SUPERINTENDING ENGINEER (SPECIAL BUILDING CIRCLE) (*Alternate*)	
CHIEF ENGINEER-CUM-ADDITIONAL SECRETARY (B and R)	Public Works Department, Government of Rajasthan, Jaipur
EXECUTIVE ENGINEER (*Alternate*)	
CHIEF ENGINEER (TRAINING)	Central Public Works Department, New Delhi
SUPERINTENDING ENGINEER (TRAINING) (*Alternate*)	
SHRI K. DEVARAJAN	Engineer-in-Chief's Branch, Army Headquarters, New Delhi
SHRI A. V. GOPALKRISHNA (*Alternate*)	
DIRECTOR, ARCHITECTURE	Research, Designs and Standards Organization (Ministry of Railways), Lucknow
JOINT DIRECTOR, ARCHITECTURE (*Alternate*)	

(*Continued on page* 2)

(*Continued from page* 1)

Members	*Representing*
SHRI S. S. GILL	Public Works Department, Government of Punjab, Chandigarh
SHRI M. KARTIKAYAN	Builder's Association of India, Bombay
SHRI R. L. KUMAR	Institution of Surveyors, New Delhi
SHRI V. G. PATWARDHAN (*Alternate*)	
SHRI M. Z. KURIAN	Tata Consulting Engineers, Bombay
SHRI G. K. MAJUMDAR	Hindustan Prefeb Ltd, New Delhi
SHRI H. S. PASRICHA (*Alternate*)	
SHRI R. C. MANGAL	Central Building Research Institute, (CSIR), Roorkee
SHRI J. S. SHARMA (*Alternate*)	
SHRI B. V. B. PAI	Concrete Association of India, Bombay
SHRI P. SRINIVASAN (*Alternate*)	
SHRI P. K. PANDARE	State Bank of India, Bombay
SHRI K. S. PRUTHI	Forest Research Institute and College, Dehra Dun
SHRI S. G. RANADIVE	Indian Institute of Architects, Bombay
SHRI RUMMY SHROFF (*Alternate*)	
REPRESENTATIVE	Bureau of Public Enterprises, Ministry of Finance
REPRESENTATIVE	Central Road Research Institute, New Delhi
REPRESENTATIVE	Life Insurance Corporation of India, Bombay
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 and Housing Department, Bombay
SHRI B. T. UNWALLA	The Institution of Engineers (India), Calcutta
SHRI G. VENKATESULU	Ministry of Shipping and Transport (Roads Wing), New Delhi
SHRI M. V. SASTRY (*Alternate*)	
SHRI G. RAMAN, Director (Civ Engg)	Director General, ISI (*Ex-officio Member*)

Secretary

SHRI A. K. SAINI
Assistant Director (Civ Engg), ISI

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*)	

(*Continued on page* 17)

Indian Standard

SPECIFICATION FOR HOT APPLIED SEALING COMPOUNDS FOR JOINTS IN CONCRETE

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 14 March 1984, after the draft finalized by the Building Construction Practices Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Most sealing compounds are bituminous. The important properties required in sealing compounds are that it can be applied without difficulty, are not unduly affected by temperature variation, adhere strongly to the concrete, and resist any tendency to flow out of the joint under hot weather conditions or loss of resiliency during cold weather conditions.

0.3 Under certain circumstances some of the properties are less important than the others. Where the road or runway is not heavily cambered, a lower value of resistance to flow may be accepted; in situations where loose grit is never present in quantity on the surface, resistance to ingress of water may be of less importance.

0.4 This standard was originally published in 1961. In this revision the physical requirements have been simplified and only important requirements retained. The requirements of softening point, increase in softening point after heating, filler settlement, resistance to grit penetration on impact test and flash point have been dropped.

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.

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

1. SCOPE

1.1 This standard specifies hot applied sealing compounds intended for use in sealing joints in concrete roads, runways, bridges and other struc ures.

1.2 The material covered by this standard is suitable only for longitudinal and transverse joints not more than 12 m apart and where the effect of the breakdowns of the seal is unlikely to be serious and the need to reseal at more frequent intervals is unlikely to cause serious inconvenience to the users and the use of a more expensive high extension type sealant is not justified.

2. MATERIALS

2.1 Joint sealing compounds, composed of suitable mixtures of materials, shall form a resilient and adhesive barrier in concrete joints and shall be capable of resisting the infiltration of water and the ingress of solid particles. They shall not be unduly affected by temperature variation, and shall resist any tendency to flow out of the joint or be picked up by vehicle tyres under hot weather conditions. They shall not become brittle or suffer loss of resiliency during cold weather conditions.

2.2 On heating in suitably designed kettles they shall be capable of acquiring a pouring consistency enabling them to be run molten in a uniform manner into all types of horizontal joints without difficulty.

2.3 Sealing compounds shall be employed for filling contraction and construction joints as well as a sealing medium above expansion joint fillers [*see* IS : 1838 (Part 1)-1983*] to a depth not exceeding 40 mm.

2.4 Suitable primers may be first applied to the vertical faces of the concrete joint before the pouring of sealing compounds in order to improve the adhesive qualities of the latter.

3. GRADES

3.1 This standard covers two grades of sealing compounds:

a) Grade A (Ordinary), and

b) Grade B (Fuel Resistant).

3.1.1 Grade A is suitable for concrete constructions other than those which are subjected to spillage of kerosine or other petroleum oils.

*Specification for preformed fillers for expansion joint in concrete pavement and structures (non-extruding and resilient type): Part 1 Bitumen-impregnated fibre (*first revision*).

3.1.2 Grade B is suitable for use in construction where resistance to kerosine or other petroleum oils is required.

4. TESTS AND PHYSICAL REQUIREMENTS

4.1 The physical requirements of sealing compounds shall conform to those given in Table 1.

4.2 Tests shall be carried out as described in the appropriate appendices specified in Table 1.

TABLE 1 PHYSICAL REQUIREMENTS OF SEALING COMPOUNDS OF GRADES A AND B

(*Clauses* 4.1 *and* 4.2)

Sl No.	Characteristic	Requirement	Method of Test	Remarks
(1)	(2)	(3)	(4)	(5)
i)	Pour point, *Max*	180°C	Appendix A	Grades A and B
ii)	Flow test, percentage, *Max*	5	Appendix B	do
iii)	Extensibility, *Min*	6 mm	Appendix C	do
iv)	Penetration, at 25°C, 100 g, 5s, 1/10	15 *Min* 50 *Max*	IS : 1203-1978*	do
v)	Aviation fuel resistance:			
	a) Increase in penetration as measured in (iv) after 7 days immersion in aviation fuel (*see* IS: 1571-1982†), *Max*	15	Appendix D and IS : 1203 -1978*	Grade B only
	b) Change in mass, after 7 days immersion in aviation fuel, percent, *Max*	1	Appendix E	do

*Methods for testing tar and bituminous materials: Determination of penetration (*first revision*).

†Specification for aviation turbine fuels, kerosine type (*fourth revision*).

5. SAMPLING

5.1 Representative samples of the joint sealing compound shall be taken and conformity to the requirements of this specification shall be determined according to the procedure given in Appendix F.

6. MARKING

6.1 Each container of sealing compound may be marked with the grade and the manufacturer's name or trade-mark, if any.

6.2 Each container of sealing compound may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and Rules and Regulations made thereunder. The ISI 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 ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

APPENDIX A

(*Table* 1)

POUR POINT TEST

A-1. GENERAL

A-1.1 Pour Point — The pour point of a joint sealing compound is the lowest temperature at which it can readily be poured.

A-2. PROCEDURE

A-2.1 Select a sample of the fresh material, weighing approximately 600 g, in such a manner as to avoid inclusion of the surface layer.

A-2.2 Heat 200 g of the sample, with gentle stirring, to a pouring consistency in a clean container placed in an oil-bath or similar heating unit. The temperature of the bath shall not exceed the pour point by more than 70°C, and in no case shall be more than 250°C. Add the remaining 400 g in quantities of approximately 50 g at a time, to the melted material, continuing the gentle stirring. Continue the heating and stirring until the entire sample is off sufficient fluid consistency to be poured readily. Specimens for all other tests shall be poured from this sample.

A-3. REPORT

A-3.1 Report as the pour point the minimum temperature at which the material will pour readily and uniformly when subjected to the procedure described in **A-2.2** and record the time required to reach such consistency.

APPENDIX B

(*Table* 1)

FLOW TEST

B-0. GENERAL

B-0.1 This test assesses the resistance of sealing compounds to flow in hot weather.

B-1. APPARATUS

B-1.0 The apparatus shall consist of the following.

B-1.1 Moulds — Three, made from 1 mm mild steel sheet. The internal dimensions of each mould shall be 50 mm in length, 12 mm in width and 25 mm in depth, with a tolerance of 0·25 mm on each dimensions. The top of the mould shall be open and shall be provided with a flange on either side as shown in Fig. 1. A slot 6 mm wide, with a tolerance of $\pm$0·05 mm, shall be cut along the centre of the base from end to end. The edges of the slot shall be machined truly vertical and all burns shall be removed. The corners shall not be rounded. Each mould shall be stamped with an identification mark on the flange.

B-1.2 Frame — It shall be of such design that three moulds can be hung by their flanges with the slot downwards and 250 mm above a sand tray.

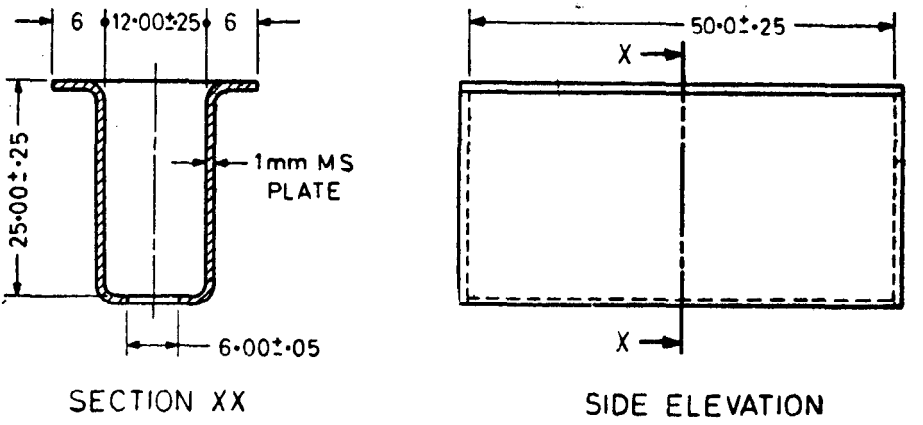
B-1.3 Oven — Capable of maintaining the whole apparatus at a temperature of 45 $\pm$ 1°C.

B-1.4 Balance — Capable of weighing to the nearest 0·01 g.

B-1.5 Spatula — Stiff.

B-2. PREPARATION OF SPECIMEN

B-2.1 The three moulds shall be weighed and their mass (W_1) recorded to the nearest 0·01 g.



All dimensions in millimetres.

FIG. 1 TEST ON JOINT SEALING COMPOUNDS — MOULD FOR FLOW TEST

B-2.2 The sample of joint sealing compound shall be heated and poured as described in **A-2.2.**

B-2.3 The moulds previously heated to a temperature close to that of the molten compound shall be placed on a metal plate which has been coated with suitable medium to prevent adhesion to the plate, and shall be filled with sufficient molten compound to give an excess above the level of the mould when cool.

B-2.4 After cooling for one hour in the air at a temperature between 15°C and 20°C the compound in the mould shall be levelled by removing the excess with a warmed stiff spatula. The filled moulds shall then be weighed and their masses (W_2) recorded to the nearest 0·01 g.

B-3. PROCEDURE

B-3.1 The frame shall be placed in the oven at 45°C for 30 minutes before commencing the test.

B-3.2 The three moulds shall then be placed in the frame in the oven and the temperature of the oven maintained constant at 45 ± 1°C for 5 hours.

B-3.3 At the conclusion of 5 hours the assembly shall be removed from the oven. The amount of compound which has flowed out of the slot in the base of the mould shall be immediately cut away level with the lowest face of the mould, with a warmed stiff spatula and the moulds shall then be weighed and the mass (W_3) recorded to the nearest 0·01 g.

B-4. REPORT

B-4.1 The proportion of compound which flows out of the mould during the test shall be reported as a percentage calculated as follows:

$$\text{Compound flowed out, percent} = \frac{W_2 - W_3}{W_2 - W_1} \times 100$$

This figure shall be recorded as the flow of compound at 45°C, the mean figure of the three determinations should be reported. If any one of the three determinations deviates from the mean by more than 10 percent of the mean, the test shall be repeated.

APPENDIX C

(*Table* 1)

EXTENSION TEST

C-0. GENERAL

C-0.1 The purpose of this test is to establish whether the sealent will remain cohesive and will continue to adhere to concrete when subjected to cycles of extension and recompression.

C-1. APPARATUS

C-1.0 The apparatus shall consist of the following.

C-1.1 Cement Mortar Test Blocks — Two blocks shall be prepared using one part of cement to one and a half parts by mass of sand. Sufficient water shall be used to obtain a workable mortar; care shall be taken to avoid the use of a mortar which is too wet, in order to prevent segregation during compaction.

Each block shall have one flat rectangular test face measuring 50×25 mm. In other respects the dimensions of the blocks may be varied to suit the design of the jig and of the clamps in the extension machine.

C-1.2 Metal Jig — One, in two separate halves which can be rigidly held together on a suitable base plate with a removable clamp. Each half shall rigidly hold one test block so that when the clamp is in position the test faces are opposite and exactly 12 mm apart and cannot move relative to each other. The jig shall be so designed that the sealing compound may be poured into the space between the blocks, so as to fill it completely and to leave an excess of 1·5 mm of sealing compound on all

the four exposed faces of the sealing compound after pouring (*see* Fig. 2 and 3). Those parts of the jig and base plate which come into contact with the sealing compound shall be amalgamated with mercury to prevent the sealing compound from adhering to the jig.

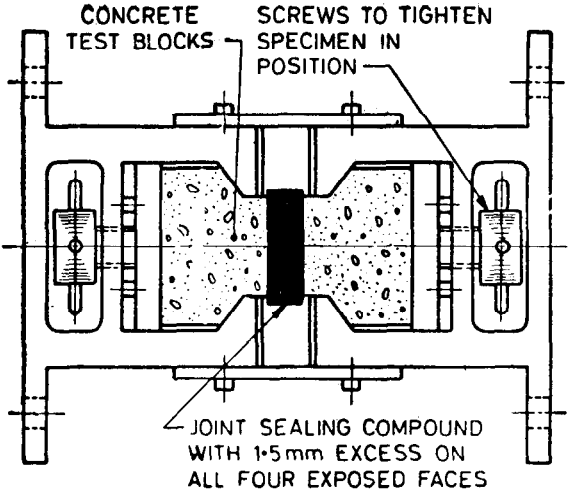


FIG. 2 SPECIMEN AS POURED, BEFORE TRIMMING, FOR EXTENSION TEST

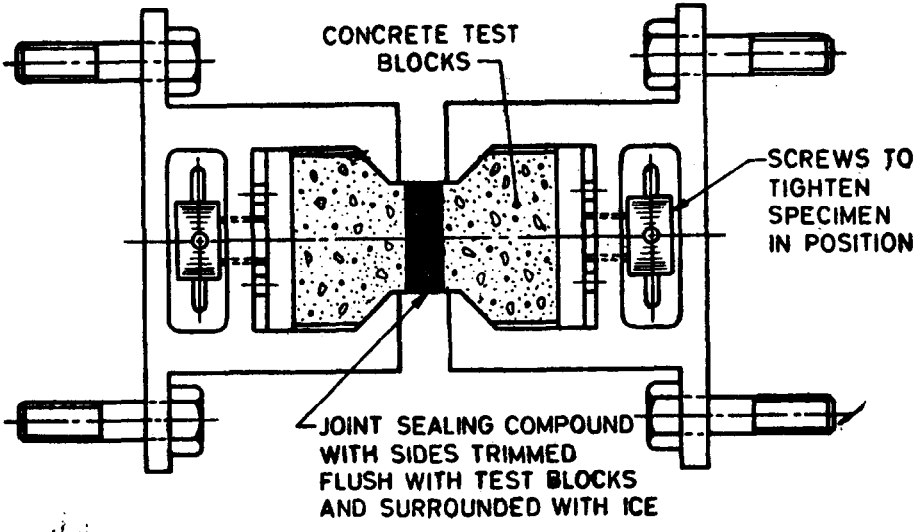


FIG. 3 SPECIMEN READY FOR EXTENSION TEST

C-1.3 Extension Machine — The design of the extension machine shall be such that the assembled jig may be clamped in the machine holding the test blocks 12 mm apart, and that from this position the two halves of the jig holding the blocks may be pulled apart at a rate of 3·00 ± 0·01 mm per hour for at least 4 hours. Means shall be provided for surrounding the test specimen between the blocks with chopped ice during the test.

C-2. PREPARATION OF TEST SPECIMENS

C-2.1 Preparation of Mortar Blocks — The mortar shall be thoroughly compacted in the mould in about four layers with a suitable hand-operated tamper. The blocks shall be cured in the mould for 24 hours in moist air (that is, under a damp cloth), then removed from the mould and cured for a further 6 days in water. After curing, the 50 × 25 mm test faces shall be ground with 80 grade carborundum powder and water on a level glass surface until the laitance is completely removed. Fresh carborundum powder shall be used for each block. Any blocks damaged during curing or grinding or which are found after grinding to contain any cavity more than 1·5 mm in diameter in the test face, shall be rejected. After grinding the blocks shall be washed in benzene to remove all traces of any shutter oil used in the moulds. They shall then be washed in methylated spirit and finally in water. The blocks shall then be dried at a temperature of 110°C for at least 12 hours and stored in a desiccator until required.

C-2.2 Pouring of the Sealing Compound — The test blocks shall be placed in the assembled metal jig at room temperature, care being taken not to handle the test faces. The sample of joint sealing compound shall be heated and poured in accordance with the procedure described in **A-2.2**. Sufficient sealing compound shall be poured at one time into the space between the test blocks to provide the excess sealing compound referred to in **C-1.2**. After cooling for 1 hour at room temperature this excess sealing compound shall be removed with a hot knife to give a test specimen of 50 × 25 × 12 mm. After the sealing compound is poured, the test blocks with the specimen between, shall remain rigidly clamped in the jig until after the ends of the jig have been rigidly clamped to the extension machine.

If the suppliers of the sealing compound under test recommend the use of the primer to increase adhesion to the concrete, the test faces of the prepared test mortar blocks shall be painted with the recommended primer. This shall be well brushed in the test surfaces, carrying the primer up to and slightly over the edge of the blocks, care being taken to avoid leaving a thick film of primer on the blocks. The blocks shall then be stored for 16 to 24 hours in a dust-free atmosphere to allow the primer to dry before they are placed in the jig.

C-3. PROCEDURE

C-3.1 The prepared specimen in the jig shall be stored for 16 to 24 hours at a temperature of 0°C. It shall then be transferred to the extension machine, and the two halves of the jig shall be rigidly clamped to the two faces of the extension machine. The clamp holding the two halves of the jig together shall then be removed. At this stage the test faces of the concrete blocks shall be 12 mm apart, parallel to each other, and perpendicular to the direction of pull, and the blocks shall be incapable of any movement other than that imparted by controlled movement of the extension machine. The test specimen shall immediately be surrounded with chopped ice and allowed to stand for 15 minutes. The test specimen shall then be extended at a rate of $3{\cdot}00 \pm 0{\cdot}01$ mm per hour for a distance of 6 mm, the ice being replenished as often as required during the test.

At the conclusion of extension the specimen, complete with blocks, shall be removed from the machine and the four exposed faces of the sealing compound shall be examined. The specimen shall be deemed to have passed the test if,

a) it remains adhering to both test blocks; and

b) no cavity has formed in any of the four exposed surfaces of the test specimen with an opening more than 40 mm^2 in areas. If more than one cavity has formed, their areas shall be added together and the total shall not exceed 40 mm^2. The cavities may be found to occur either in the body of the sealing compound, or where the sealing compound joints the test block.

C-4. REPORT

C-4.1 The result of each test shall be reported either as:

a) The specimen extended for 6 mm at 0°C without failure; or

b) The specimen failed during extension at 0°C, failure, occurring in adhesion between the sealing compound and the concrete block or by rupture within the sealing compound, as the case may be.

APPENDIX D

(*Table* 1)

RESISTANCE TO AVIATION FUELS TEST FOR CHANGE OF PENETRATION

D-1. APPARATUS

D-1.1 Apparatus shall be as described in IS : 1203-1978*, except as under:

Four containers of 55 mm internal diameter and 35 mm depth shall

*Methods for testing tar and bituminous materials: Determination of penetration (*first revision*).

be used. The containers shall have a level mark on the inside, at a height of 25 mm from the bottom.

D-2. PROCEDURE

D-2.1 Preparation of Test Samples

D-2.1.1 Number the four containers as 1, 2, 3 and 4.

D-2.1.2 Soften the material to a pouring consistency between 75°C and 100°C above the approximate softening point and stir it thoroughly until it is homogeneous and is free from air bubbles and water. Pour the melt into each container up to the 25 mm mark. Cover the samples, and allow them to cool at a temperature not lower than 18°C for 1 hour.

D-2.1.3 Place samples 1 and 2 along with their transfer dishes in the water-bath at 25·0±0·1°C, and allow them to remain for 1 hour.

D-2.1.4 Flood samples 3 and 4 with approximately 25 ml of the aviation fuel (*see* Table 1) to the top of the containers. Carefully seal the containers and keep them at a temperature of not lower than 18°C for 7 days.

D-2.2 Testing

D-2.2.1 Determine the penetration in samples 1 and 2 at the end of the 1 hour period according to the procedure given in IS : 1203-1978*.

D-2.2.2 Drain off the fuel from samples 3 and 4 at the end of the 7 days period. Wash the surfaces thoroughly with water at a temperature (between 18°C and 25°C), wipe dry and invert the containers on a clean, hard surface for 1 hour. Then stand the containers upright for a further 1 hour.

Place the samples along with their transfer dishes in the water-bath at 25·0 ± 0·1°C and allow them to remain for 1 hour.

D-2.2.3 Determine the penetration in samples 3 and 4 according to the procedure described in IS : 1203-1978*.

D-3. REPORT

D-3.1 Express the depth of penetration to tenth of a millimetre.

D-3.2 The value of penetration reported for each specimen shall be the mean of not less than three determinations.

*Methods for testing tar and bituminous materials: Determination of penetration (*first revision*).

D-3.3 Let the value of penetration for samples 1, 2, 3 and 4 be x_1, x_2, x_3 and x_4, respectively. Then the change in penetration shall be

$$\frac{x_3 + x_4}{2} - \frac{x_1 + x_2}{2}$$

D-4. PRECAUTIONS

D-4.1 If the sample contains extraneous matter, it should be sieved through 300-μm IS Sieve [*see* IS : 460 (Part 1)-1978*].

D-4.2 To avoid overheating at the bottom of the container, use of an air-oven or sand-bath is recommended.

D-4.3 If there be any movement of the container while the needle is penetrating into the sample, that determination shall be discarded.

APPENDIX E

(*Table* 1)

RESISTANCE TO AVIATION FUELS TEST FOR CHANGE IN MASS

E-1. APPARATUS

E-1.1 Two flat-bottomed cylindrical metallic containers, 55 mm internal diameter and 35 mm depth, shall be used. The containers shall have a level mark on the inside at a height of 25 mm from the bottom.

E-2. PROCEDURE

E-2.1 Preparation of Test Samples

E-2.1.1 Number the containers 1 and 2 and weigh each empty to the nearest 0·1 g (w_1).

E-2.1.2 Soften the material to a pouring consistency between 75°C and 100°C above the approximate softening point and stir it thoroughly until it is homogeneous and is free from air bubbles and water. Pour the melt into each container up to the 25 mm mark. Cover the samples and allow them to cool at a temperature not lower than 18°C for 1 hour.

E-2.1.3 Weigh each container to the nearest 0·01 g (w_2).

*Specification for test sieves: Part 1 Wire cloth test sieve (*second revision*).

E-2.1.4 Flood the containers with approximately 25 ml of the aviation fuel (*see* Table 1) to the top of the containers. Carefully seal the containers and keep them at a temperature not less than 18°C for 7 days.

E-2.2 Testing

E-2.2.1 Drain off the fuel from the samples at the end of the 7 days period. Wash the surfaces thoroughly with water at a temperature between 18°C and 25°C, wipe dry, and invert the containers on a clean, hard surface for 1 hour. Then stand the containers upright for a further 1 hour. Weigh the containers to the nearest 0·01 g (w_3).

E-3. REPORT

E-3.1 The percentage change in mass of the sample shall be as follows:

$$\frac{w_2 - w_3}{w_2 - w_1} \times 100$$

Similarly, obtain the percentage change in mass of the second sample.

The average of the two percentages thus obtained shall be reported as the percentage change in mass.

E-4. PRECAUTIONS

E-4.1 If the sample contains extraneous matter, it should be sieved through 300-μm IS Sieve [*see* IS : 460 (Part 1)-1978*].

E-4.2 To avoid overheating at the bottom of the container, use of an air-oven or sand-bath is recommended.

E-4.3 If there be any movement of the container while the needle is penetrating into the sample, that determination shall be discarded.

NOTE — This test may be conveniently combined with the test to determine the change in penetration (*see* Appendix D).

APPENDIX F

(*Clause* 5.1)

SAMPLING PLAN FOR HOT APPLIED SEALING COMPOUNDS

F-1. SCALE OF SAMPLING

F-1.1 Lot — All the packages of the same grade and manufactured

*Specification for test sieves: Part 1 Wire cloth test sieve (*second revision*).

under similar conditions of manufacture, shall be grouped together to constitute a lot.

F-1.2 For ascertaining the conformity of the material to the requirements of this specification, samples shall be tested from each lot separately.

F-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 2.

TABLE 2 NUMBER OF PACKAGES TO BE CHOSEN

Lot Size	Sample Size
(1)	(2)
Up to 8	2
9 to 25	3
26 to 50	5
51 to 100	7
101 and above	10

F-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* shall be followed.

F-2. NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

F-2.1 From each of the packages selected according to **F-1.3**, a representative sample of approximately 3 kg shall be removed. Care shall be taken during removal that the sample is not contaminated in any way by oil, water, etc, and it shall be placed in a clean, closed metal container.

F-2.2 During the melting of the sample for preparing the test specimens, the compound shall be continuously agitated and shall not be heated to a temperature 20°C above its pour point as prescribed by the procedure described in Appendix A. The test specimens shall be poured in succession from the same sample, which shall not be re-heated. Heating and pouring shall be carried out as expeditiously as possible in order to avoid alteration due to prolonged heating.

F-2.3 The lot shall be considered to have met the requirements of the specification if various test specimens for all the characteristics meet the corresponding specification requirement, otherwise not.

*Methods for random sampling.

(*Continued from page* 2)

Members	*Representing*
SHRI R. C. P. CHOUDHARY	Engineers India Ltd, New Delhi
SHRI K. N. SINHA (*Alternate*)	
SHRI P. S. GOKHALE	Gammon India Ltd, Bombay
SHRI K. RAJAGOPALAN (*Alternate*)	
SHRI G. B. JAHAGIRDAR	National Industrial Development Corporation Ltd, New Delhi
SHRI M. P. JAISINGH	Central Building Research Institute (CSIR), Roorkee
SHRI R. K. JAIN (*Alternate*)	
SHRI S. R. KULKARNI	M. N. Dastur and Company (P) Ltd, Calcutta
SHRI D. B. GHOSH (*Alternate*)	
SHRI DATTA MALIK	Indian Institute of Architects, Bombay
DR M. NAYAK	Concrete Association of India, Bombay
SHRI P. SRINIVASAN (*Alternate*)	
SHRI Y. R. PHULL	Central Road Research Institute (CSIR), New Delhi
SHRI K. L. SETHI (*Alternate*)	
SHRI R. V. RAMAMURTHY	Directorate General, Border Roads, New Delhi
SHRI R. P. SETH (*Alternate*)	
SHRI S. SEETHARAMAN	Ministry of Shipping & Transport (Roads Wing), New Delhi
SHRI PRAFULLA KUMAR (*Alternate*)	
SHRI T. M. SHAH	Tirath Ram Ahuja Pvt Ltd, New Delhi
SHRI J. P. GUPTA (*Alternate*)	
SHRI K. S. SRINIVASAN	National Buildings Organization, New Delhi
SHRI A. K. LAL (*Alternate*)	
SHRI SUSHIL KUMAR	National Building Construction Corporation Ltd, New Delhi
SHRI DALJIT SINGH (*Alternate*)	
SUPERINTENDING SURVEYOR OF WORKS (CZ)	Central Public Works Department, New Delhi
SURVEYOR OF WORKS (CZ) (*Alternate*)	

BUREAU OF INDIAN STANDARDS

Headquarters:
Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002
Telephones: 323 0131, 323 3375, 323 9402 Fax :+ 91 011 3234062, 3239399, 3239382
E - mail : bis@vsnl.com. **Internet** : http://wwwdel.vsnl.net.in/bis.org

Central Laboratory:	***Telephone***
Plot No. 20/9, Site IV, Sahibabad Industrial Area, Sahibabad 201010	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, V.I.P. Road, Kankurgachi, 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, MIDC, 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
Commercial-cum-Office Complex, Opp. Dushera Maidan, E=5 Arera Colony, Bittan Market, BHOPAL 462016	72 34 52
62/63, Ganga Nagar, Unit VI, BHUBANESWAR 751001	40 36 27
Kalai Kathir Building, 670 Avinashi Road, COIMBATORE 641037	21 01 41
Plot No. 43, Sector 16 A, Mathura Road, FARIDABAD 121001	28 88 01
Savitri Complex, 116 G.T. Road, GHAZIABAD 201001	71 19 98
53/5 Ward No.29, R.G. Barua Road, 5th By-lane, GUWAHATI 781003	54 11 37
5-8-56C, L.N. Gupta Marg, Nampally Station Road, HYDERABAD 500001	320 10 84
E-52, Chitranjan Marg, C- Scheme, JAIPUR 302001	37 38 79
117/418 B, Sarvodaya Nagar, KANPUR 208005	21 68 76
Seth Bhawan, 2nd Floor, Behind Leela Cinema, Naval Kishore Road, LUCKNOW 226001	21 89 23
NIT Building, Second Floor, Gokulpat Market, NAGPUR 440010	52 51 71
Patliputra Industrial Estate, PATNA 800013	26 28 08
Institution of Engineers (India) Building, 1332 Shivaji Nagar, PUNE 411005	32 36 35
'Sahajanand House' 3rd Floor, Bhaktinagar Circle, 80 Feet Road, RAJKOT 360002	36 85 86
T.C. No. 14/1421, University P. O. Palayam, THIRUVANANTHAPURAM 695034	32 21 04
*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

Dee Kay Printers, New Delhi, India