भारतीय मानक

एसबेस्टॉस सीमेंट के भवन निर्माण पाइप तथा पाइप फिटिंग, गटर तथा गटर फिटिंग तथा छत निर्माण फिटिंग — विशिष्टि

भाग 2 गटर तथा गटर फिटिंग

(दूसरा पुनरीक्षण)

Indian Standard

ASBESTOS CEMENT BUILDING PIPES AND PIPE FITTINGS, GUTTERS AND GUTTER FITTINGS AND ROOFING FITTINGS — SPECIFICATION

PART 2 GUTTERS AND GUTTER FITTINGS

(Second Revision)

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

December 1994

Price Group 4

FOREWORD

This Indian Standard (Part 2) (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Cement and Concrete Sectional Committee had been approved by the Civil Engineering Division Council.

Asbestos cement gutters and gutter fittings are extensively used for disposal of rain water from roof of buildings. The lightness of asbestos cement products and their durability make them suitable for all normal building purposes.

This standard was first published in 1960 to cover requirements of asbestos cement building pipes, sanitary pipes, pipe fittings, gutters and gutter fittings. The standard was first revised in 1980 by splitting into three parts based on the types of fittings for ease in the use of this standard. Part 1 of this standard covers building pipes and pipe fittings: Part 2 covers gutters and gutter fittings and Part 3 covers roofing fittings.

This revision has been taken up on the basis of experience gained in the use of this standard and also with a view to bringing it in line with current practices in the manufacture of asbestos cement gutter and gutter fittings. In this revision, impermeability test has been included and water absorption test and acid resistance test have been deleted. Reference to IS 5913 : 1989 'Asbestos cement products – Methods of test (*first revision*)' has been made to align the test methods with the latest practice.

The composition of the committee responsible for the formulation of this standard is given in Annex B.

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

ASBESTOS CEMENT BUILDING PIPES AND PIPE FITTINGS, GUTTERS AND GUTTER FITTINGS AND ROOFING FITTINGS — SPECIFICATION

PART 2 GUTTERS AND GUTTER FITTINGS

(Second Revision)

1 SCOPE

This standard (Part 2) covers the requirements of asbestos cement gutters and gutter fittings used in buildings.

2 REFERENCES

The Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 COMPOSITION

The material used in the manufacture of asbestos cement gutters and gutter fittings shall be composed of an inert aggregate consisting of clean asbestos fibre including suitable other fibres cemented together by ordinary Portland cement conforming to IS 269 : 1989 or IS 8112 : 1989 or IS 12269 : 1987 or Portland slag cement conforming to IS 455 : 1989 or Portland pozzolana cement conforming to IS 1489 (Part 1) or IS 1489 (Part 2) : 1991 or rapid hardening Portland cement conforming to IS 8041 : 1990. Pozzolanic material, fillers and pigments which are compatible with asbestos cement may be added.

NOTE — In case of Portland pozzolana cement and Portland slag cement, addition of pozzolanic materials shall not be permitted.

4 GENERAL QUALITY AND WORKMANSHIP

The material used in the manufacture of asbestos cement gutters and gutter fittings shall be intimately mixed. The interior surface of the gutters and their fittings shall be regular and uniform.

The manufacturer shall ensure that the gutter fittings reasonably match with the gutters of respective sizes.

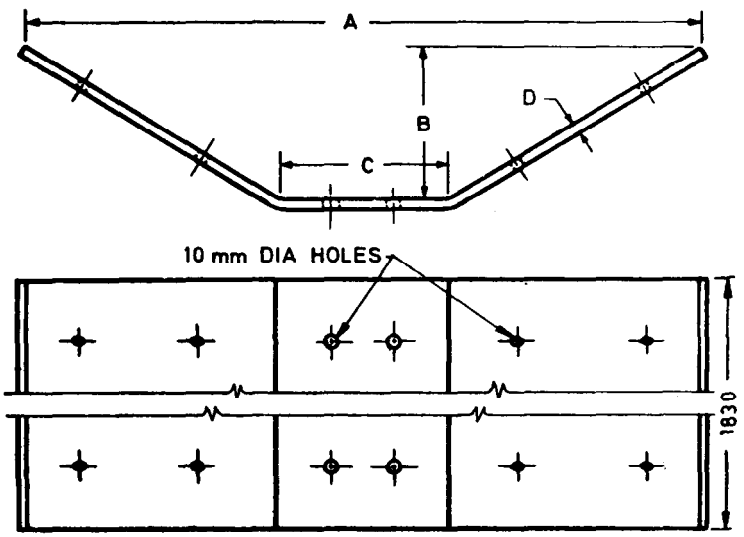
5 DIMENSIONAL AND PHYSICAL REQUIREMENTS

5.1 Dimensional Requirements

The dimensions for the various gutters shall be in accordance with Fig. 1 to 3 and Tables 1 to 4.

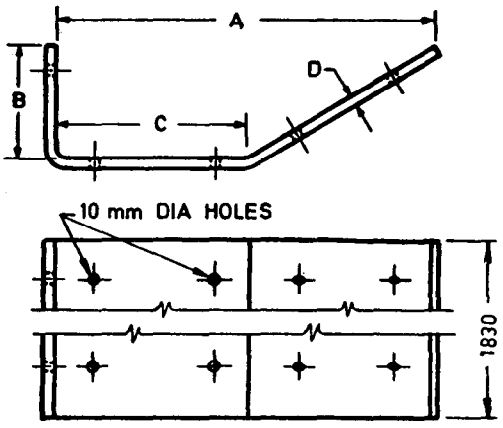
5.1.1 *Tolerances*

5.1.1.1 The tolerance on length of gutters and gutter fittings shall be ± 10 mm.



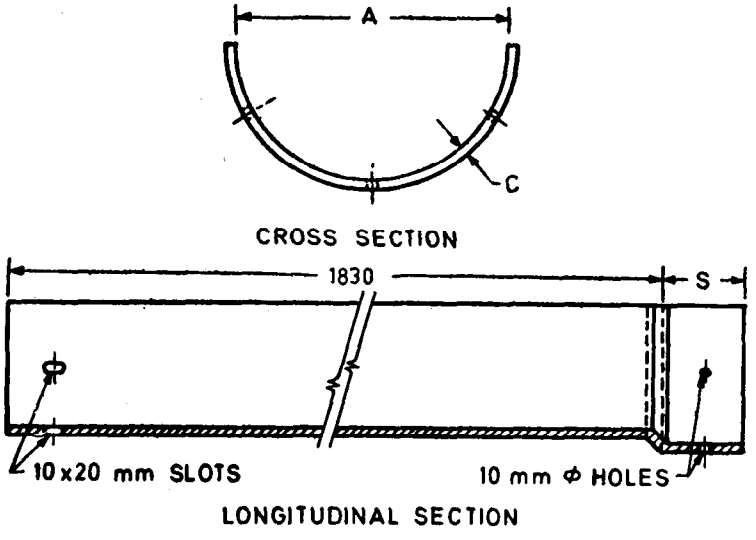
All dimensions in millimetres.

FIG. 1 VALLEY GUTTER



All dimensions in millimetres.

FIG. 2 BOUNDARY WALL GUTTER



All dimensions in millimetres.

FIG. 3 HALF ROUND GUTTER

Table 1 Details of Figures and Tables for Various Asbestos Cement Gutters and Gutter Fittings

(*Clause* 5.1)

Sl No.	Description of Item	Code No.	Figure No.	Table No.
(1)	(2)	(3)	(4)	(5)
i)	Valley gutter	V	1	2
ii)	Boundary wall gutter	BW	2	3
iii)	Half round gutter	H	3	4

Table 2 Dimensions of Valley Gutter
(*Clause* 5.1, *Table* 1 and *Fig.* 1)

All dimensions in millimetres.

Nominal Size	A	B	C	D
915 × 205 × 230	915	205	230	12·5
610 × 150 × 230	610	150	230	12·5
455 × 125 × 150	455	125	150	12·5
405 × 125 × 255	405	125	255	12·5

NOTE — Manufactured in 1 830 mm lengths.

Table 3 Dimensions of Boundary Wall Gutter
(*Clause* 5.1, *Table* 1 and *Fig.* 2)

All dimensions in millimetres.

Nominal Size	A	B	C	D
510 × 150 × 255	510	150	255	12·5
455 × 150 × 305	455	150	305	12·5
305 × 150 × 230	305	150	230	12·5
280 × 125 × 180	280	125	180	12·5

NOTE — Manufactured in 1 830 mm lengths.

Table 4 Dimensions of Half Round Gutter
(*Clause* 5.1, *Table* 1 and *Fig.* 3)

All dimensions in millimetres.

Nominal Size	A	C	S
305	305	9 5	100
230	230	9·5	100
150	150	9·5	70

5.1.1.2 The tolorance on profile of gutters and and gutter fittings shall be ±10 mm.

5.1.1.3 The tolerance on thickness of gutters and gutter fittings shall be ±1·5 mm.

5.2 Shape

The shape of gutter fittings shall be as per Fig. 4 to 7. Dimensions of gutter fittings shall be declared by the manufacturer.

5.3 Impermeability Test

When tested for impermeability according to the Method 1 described in IS 5913 : 1989, the specimens shall not show during 24 h of test any formation of drops of water, except traces of moisture on the lower surface. This test on gutters may be done at any suitable place on the gutter without cutting any separate test piece.

6 SAMPLING AND NUMBER OF TESTS

6.1 Scale of Sampling

6.1.1 *Lot*

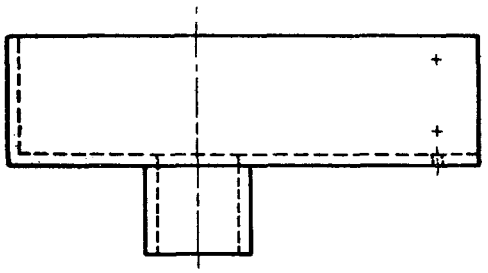
In any consignment, all the gutters of the same type and of the same thickness and manufactured under similar conditions of production shall be grouped together to constitute a lot.

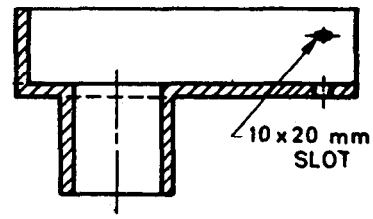
6.1.1.1 The conformity of a lot to the requirements of this specification shall be ascertained on the basis of tests on the gutters selected from it.

6.1.2 The number of gutters to be selected at random from the lot shall be in accordance with Table 5.

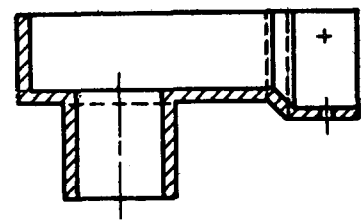
Table 5 Sampling Size

Lot Size	Sample Size
Up to 500	3
501 to 1 000	5
1 001 to 1 500	7
1 501 and above	10

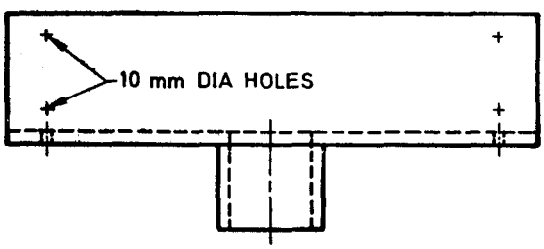




DROP END WITH SPIGOT

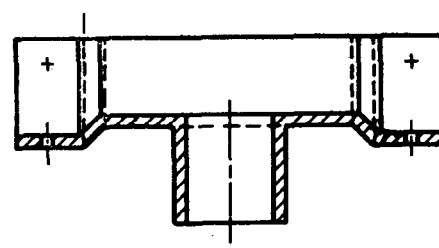


DROP END WITH SOCKET



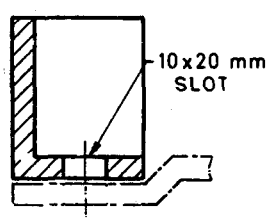
NOZZLE

FIG. 4 DROP END AND NOZZLE FOR BOUNDARY WALL AND VALLEY GUTTERS

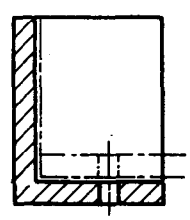


NOZZLE

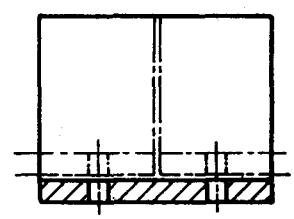
FIG. 5 DROP END AND NOZZLE FOR HALF ROUND GUTTER



STOP END FOR SOCKET

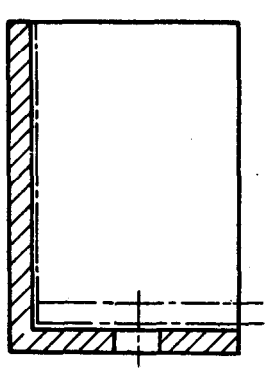


STOP END FOR SPIGOT

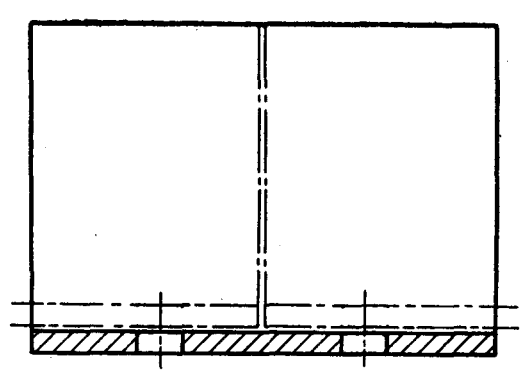


UNION CLIP

FOR HALF ROUND GUTTERS



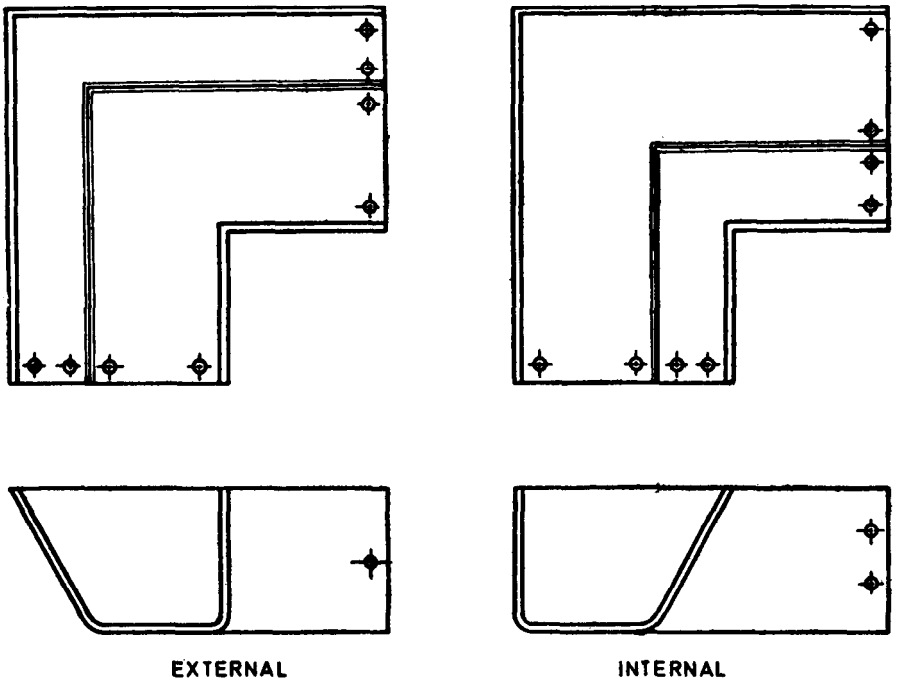
STOP END



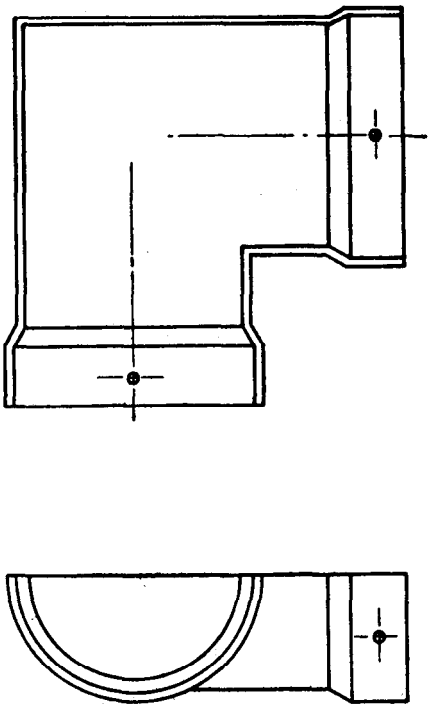
UNION CLIP

FOR BOUNDARY AND VALLEY GUTTERS

FIG. 6 STOP END AND UNION CLIP FOR GUTTERS



7A Angle for Boundary Wall Gutters



7B Angle for Half Round Gutters

FIG. 7 ANGLE FOR GUTTER

6.2 Number of Tests

6.2.1 All the gutters selected as in **6.1.2** shall be examined for visual defects and impermeability test.

7 MANUFACTURER'S CERTIFICATE

The manufacturer shall satisfy himself that his asbestos cement gutters conform to the requirements of this standard, and if required shall furnish a certificate to this effect to the purchaser or his representative.

8 MARKING

8.1 All gutters and gutter fittings shall be clearly and indelibly marked with the following information:

a) Indication of the source of manufacture,

b) Code No. of the gutter or gutters,

c) Date of manufacture, and

d) Pictorial warning signs as given in IS 12081 (Part 2) : 1987.

8.2 BIS Certification Marking

Each pipe or pipe fittings may also be marked with the Standard Mark.

8.2.1 The use of Standard Mark is governed by the provisions 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.

9 SAFETY RULES SHEET

All delivery of asbestos cement gutters and gutter fittings shall be accompanied by a safety rules sheets as given in IS 11769 (Part 1) : 1987.

ANNEX A

(*Clause* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*	*IS No.*	*Title*
269 : 1989	33 Grade ordinary Portland cement (*fourth revision*)	8041 : 1989	Rapid hardening Portland cement (*second revision*)
455 : 1989	Portland slag cement (*fourth revision*)	8112 : 1989	Specification for 43 grade ordinary Portland cement
1489 (Part 1) : 1991	Portland pozzolana cement: Part 1 Flyash based (*third revision*)	11769 (Part 1) : 1987	Guidelines for safe use of products containing asbestos: Part 1 Asbestos cement products
1489 (Part 2) : 1991	Portland pozzolana cement: Part 2 Calcined clay based (*third revision*)	12081 (Part 2) : 1987	Recommendations for pictorial warning signs and precautionary notices for asbestos and products containing asbestos: Part 2 Asbestos and its products
5913 : 1989	Methods of test for asbestos cement product (*first revision*)		
7639 : 1975	Methods of sampling of asbestos cement products	12269 : 1987	Specification for 53 grade ordinary Portland cement

ANNEX B
(*Foreword*)

COMMITTEE COMPOSITION

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(*Continued on page* 8)

(*Continued from page 7*)

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Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Handbook' and 'Standards Monthly Additions'.

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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