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IS 11101 (1984): Extended Branch Pipe for Fire Brigade Use [CED 22: Fire Fighting]



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Indian Standard

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SPECIFICATION FOR EXTENDED BRANCH PIPE FOR FIRE BRIGADE USE

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March 1985

Indian Standard

SPECIFICATION FOR EXTENDED BRANCH PIPE FOR FIRE BRIGADE USE

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Indian Standard

SPECIFICATION FOR EXTENDED BRANCH PIPE FOR FIRE BRIGADE USE

$\mathbf{0.} \quad \mathbf{FOREWORD}$

0.1 This Indian Standard was adopted by the Indian Standards Institution on 22 August 1984, after the draft finalized by the Fire Fighting Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 The branch pipe normally used by the fire brigade for producing jet, spray or fog, can be used for fighting surface fires only. Water penetration achieved by these is very little. There may be occasions when the fire is deep seated inside a huge stack of combustible material, like coal, hay, straws, saw dust, etc, when it may be time and labour consuming to break open the stack in order to reach the seat of fire. Opening up of the stack may also cause a sudden flare up. It is, therefore, desirable to employ a method by which water could be sprayed inside the burning stack as close to the seat of fire as possible without breaking it open. The extended branch pipe enables this to be achieved and hence Indian Standard on this subject has been formulated.

0.3 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 lays down the requirements regarding materials, shape and dimensions, construction, workmanship and finish and leakage test for the extended branch pipe used by fire brigades.

2. MATERIALS

2.1 Aluminium Alloy — Aluminium alloy used for casting shall conform to Designation 4450, 4225 and 4600 of IS : 617-1975⁺.

^{*}Rules for rounding off numerical values (revised).

[†]Specification for aluminium and aluminium alloy ingots and castings for general engineering purposes (second revision).

2.2 Leaded-Tin-Bronze — Leaded-tin-bronze used for castings shall conform to LTB 2 of IS : 318-1981*.

2.3 Shaft — Mild steel pipe (galvanized) shall conform to IS: 1239 (Part 1)-1979† and aluminium pipe to IS: 738-1977‡. The threads shall be to suit nozzle (see Fig. 1).

3. CONSTRUCTION

3.1 The extended branch pipe shall consist of nozzle as per details given in Fig. 1 connected by threaded shaft of galvanized mild steel or aluminium pipe of 2 m and male half coupling as per details given in Fig. 2.

4. WORKMANSHIP AND FINISH

4.1 All parts shall be of good workmanship and finish. The forgings and castings shall be sound and free from pits, scales, cracks and other imperfections and shall not be repaired or filled so as to hide casting defects. All burrs and sharp edges shall be removed.

5. LEAKAGE TEST

5.1 The complete branch pipe after sealing the holes shall be subjected to a hydrostatic pressure of 2.1 MN/m^2 (21 kgf/cm^2) for a period of $2\frac{1}{2}$ minutes and there shall be no leakage in the casting or joints.

6. MARKING

6.1 The extended branch pipe shall be marked, permanently and clearly, with the following information:

- a) Manufacturer's name or trade-mark, if any; and
- b) Year of manufacture.

6.1.1 The extended branch pipe 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 the 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.

^{*}Specification for leaded tin bronze ingots and castings (second revision).

^{*}Specification for mild steel tubes, tubulars and other wrought steel fittings: Part 1 Mild steel tubes (*fourth revision*).

[‡]Specification for wrought aluminium and aluminium alloy drawn tube for general engineering purposes (second revision).



Note — All holes equi-spaced and of ϕ 2.4 mm. All dimensions in millimetres. FIG. 1 NOZZLE FOR EXTENDED BRANCH PIPE





FIG. 2 MODIFIED MALE HALF COUPLING

(Continued from page 2) Members FIRE ADVISER SHRI H. S. GOHLEUT New Delhi SHRI T. L. VERMA (Alternate) HYDRAULIC ENGINEER Bombay SHRI V. B. NIKAM (Alternate) SHRI M. R. KAMAT Shri P. Khanna COL S. A. MOHILE SHRI A. K. SURI (Alternate) SHRI H. V. RAO SHRI K. V. BHARDWAJ (Alternate) SHRI P. H. SETHNA SHRI N. T. PANJWANI (Alternate) SHRIJ. V. SHAH SHRI B. J. SHAH (Alternate) SHRIJ. R. SHAH SHRI H. J. NEGANDHI (Alternate)

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INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	Unit	Symbol	
Length	metre	m	
Mass	kilogram	kg	
Time	second	S	
Electric current	ampere	Α	
Thermodynamic temperature	kelvin	К	
Luminous intensity	candela	cd	
Amount of substance	mole	mol	
Supplementary Units			
Quantity	Unit	Symbol	
Plane angle	radian	rad	
Solid angle	steradian	st	
Derived Units			
Quantity	Unit	Symbol	Definition
Force	newton	N	1 N = 1 kg.m/s ²
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	т	$1 T = 1 Wu/m^2$
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 $S = 1 A/V$
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Ра	1 Pa = 1 N/m ²