



उत्पाद मैनुअल
कम विस्तार झाग बनाने शाखा पाइप और पोर्टेबल फोम प्रारंभ इंडक्टर,
आई एस 2097 : 2024 के अनुसार

PRODUCT MANUAL FOR
LOW EXPANSION FOAM MAKING BRANCH PIPE AND
PORTABLE FOAM INDUCTOR ACCORDING TO IS 2097:2024

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना- I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification.

1.	मानक संख्या IS No.	:	IS 2097:2024
	शीर्षक Title	:	Low Expansion Foam Making Branch Pipe and Portable Foam Inductor
	संशोधनों की संख्या No. of amendments	:	Nil
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Firm is required to declare the material of construction and materials of related parts/components of the branch pipe and foam inductor in accordance with Table 3 & 4 of IS 2097:2024. Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/ Factory Surveillance
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer to Annex-A
c)	नमूने का परिमाण Sample Quantity	:	1 no Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of product sample, as far as possible since raw material sample may not be available in market)

d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	-	Same as the scope of licence
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer to Annex-B
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer to Annex-C
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	All tests Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 2097:2024 with the following scope:		
	Name of the product	Low Expansion Foam Making Branch Pipe	
	Variety	- Self-inducting Branch Pipe - Non-Self Inducting Branch Pipe - with portable foam inductor as per clause 3.2 of IS 2097 or other foam induction arrangement as declared	
	Type	FB 5X/ FB 10X/ FB 20X	
	Design	Jet or Jet/Spray design	

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ANNEX A

Grouping Guidelines

1. IS 2097:2024 covers Low Expansion Foam Making Branch Pipe and Portable Foam Inductor, which are classified as given below:
 - a) Variety :
 - Self-inducting Branch Pipe
 - Non-Self Inducting Branch Pipe - with portable foam inductor as per clause 3.2 of IS 2097 or other foam induction arrangement as declared
 - b) Type : FB 5X/ FB 10X/ FB 20X
 - c) Design : Jet or Jet/Spray design

NOTE: For non-self inducting variety of branch pipe, the manufacturer shall declare the foam induction arrangement, i.e. whether the foam induction is done with a portable foam inductor as per clause 3.2 of IS 2097 or through other arrangements. In case the foam induction is done through other arrangements, then firm shall declare the details of other arrangements of foam induction.

2. Considering the above, following grouping guidelines is developed for GoL/CSoL :
 - (i) One sample of each variety, type and design shall be tested for all requirements to cover that variety, type and design in the scope of the licence.
 - (ii) In case of each non-self inducting branch pipes, each foam induction arrangement are to be tested separately.
3. The Firm shall declare the varieties of Foam Making Branch Pipe [i.e. variety of branch pipe, type, design and foam induction arrangement (in case of non-self inducting branch pipe)] they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.
4. During the operation of the Licence, BO shall ensure that all the Varieties covered in the Licence are tested in rotation to the extent possible.

ANNEX-B

List of Test Equipment

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sr. No.	Tests used in with Clause Reference	Test Equipment
1	Performance Requirement (Clause 5, Table 1)	- Plastic or glass collecting vessel with bottom discharge facility as per fig 5 of IS 4989 - Foam collector for expansion and drainage measurement as per fig 6 of IS 4989 - Flow rate measuring arrangement with pressure gauge - Flow solution vessel connected to nozzle - Air conditioner to maintain temperature $27 \pm 5^{\circ} \text{C}$ - Measuring tape/ scale - Weighing balance - Stop watch - Measuring cylinder - Water pump with flow meter - Foam compound as per IS 4989 - protractor

ANNEX C

SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is : All Foam Branch Pipes of same variety, type and design produced in a month from same materials shall constitute a control unit.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2 ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.3 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.4 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.

2.4.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.5 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test

facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.5.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.6 **TEST RECORDS**- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3 **PACKING AND MARKING** - The Standard Mark as given in the Schedule of the licence shall be marked on each branch pipe and foam inductor, provided always that the material so marked conforms to all requirements of the specification.

3.3 Marking shall be done as per Clause 6 of IS 2097:2024.

3.4 **Additional Marking requirements:** Each product/ packaging shall also be marked with the following additional requirement:

a) “For BIS certification details please visit www.bis.gov.in”

4 **REJECTION** - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act,2016.

TABLE 1
(ONLY FOR GUIDANCE PURPOSE)

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
3	General	3.1 to 3.2	IS 2097	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity.		
4	Material of parts/components	Cl 4, Table 3 & Table 4	IS 2097	S	One	Each Consignment	No testing is required, if material received is ISI marked or accompanied with manufacturers test certificate.
5	Performance Requirements						
5.1	Inlet pressure at the branch	5.1, Table 1	IS 2097	R	One	Each Control Unit	-
	Discharge capacity						
	Foam compound induction						
	Minimum range						
	Foam expansion						
	25 percent drainage time for AFFF						
	25 percent drainage time for AR-AFFF						