



## PRODUCT MANUAL FOR GAS CARTRIDGES FOR USE IN FIRE EXTINGUISHERS ACCORDING TO IS 4947: 2006

*This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence 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 licence/certificate.*

1.	<b>Product</b>	:	IS 4947 : 2006
	<b>Title</b>	:	GAS CARTRIDGES FOR USE IN FIRE EXTINGUISHERS
	<b>No. of Amendments</b>	:	NIL
2.	<b>Sampling Guidelines:</b>		
a)	<b>Raw material</b>	:	Material – Clause 4 of IS 4947:2006
b)	<b>Grouping guidelines</b>	:	Gas Cartridge of each capacity shall be tested for considering GoL/CSoL.
c)	<b>Sample Size</b>	:	4 cartridges for all tests
3.	<b>List of Test Equipment</b>	:	Please refer <a href="#">ANNEX – A</a>
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer <a href="#">ANNEX – B</a>
5.	<b>Possible tests in a day :</b>		
	(i) Construction (Clause 5) (ii) Capacity (Clause 6) (iii) Hydraulic pressure test (Clause 7.1) (iv) Finish (Clause 8)		
6.	<b>Scope of the Licence :</b>		
	“Licence is granted to use Standard Mark as per IS 4947 : 2006 with the following scope:		
	Name of the product	GAS CARTRIDGES FOR USE IN FIRE EXTINGUISHERS	
	Nominal Capacity		

**ANNEX A****List of Test Equipment***Major test equipment required to test as per the Indian Standard*

<b>S. No.</b>	<b>Tests used in with Clause Reference</b>	<b>Test Equipment</b>
1	General requirement (Clause 3.2)	Vernier calliper
		Gauge for pitch measurement
		Gauge for measurement of included angle
2	Capacity and content (Clause 6)	Weighing balance / Measuring jar
		Air conditioner
3	Hydrostatic pressure testing (Clause 7.1)	Hydrostatic pressure testing arrangement
		Pressure gauge
		Stop watch
		Weighing balance
4	Ultimate failure test (Clause 7.2)	Hydrostatic pressure testing arrangement with well protected test rig
		Pressure gauge
5	Leakage test (Clause 7.3 and 7.3.1)	Glass/Transparent jar
		Gas cartridge conditioning chamber for maintaining temperature 75° C
6	Finish (Clause 8)	Coatmeter

*The above list is indicative only and may not be treated as exhaustive.*

**ANNEX B**

**Scheme of Inspection And Testing**

**1. LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

**1.1** The manufacturer shall prepare a calibration plan for the test equipment.

**2. TEST RECORDS** – The manufacturer shall maintain test records for the tests carried out to establish conformity.

**3. LABELLING AND MARKING** – As per the requirements of IS 4947: 2006

**4. CONTROL UNIT** – Gas Cartridge of same type and capacity manufactured from same lot and cast of the material shall constitute a control unit.

**5. LEVELS OF CONTROL** - The tests as indicated in column 1 of [Table 1](#) and the levels of control in column 3 of [Table 1](#), shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

**5.1** All the production which conforms to the Indian Standard and covered by the licence should be marked with Standard Mark.

**6. REJECTIONS** – 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**

<b>(1)</b>				<b>(2)</b>	<b>(3)</b>		
<b>Test Details</b>				<b>Test equipment requirement R: required (or) S: Sub-contracting permitted</b>	<b>Levels of Control</b>		
<b>Cl.</b>	<b>Requirement</b>	<b>Test Methods</b>			<b>No. of Sample</b>	<b>Frequency</b>	<b>Remarks</b>
		<b>Clause</b>	<b>Reference</b>				
3	General requirement	3.1 3.2	IS 4947	R	Each cartridge	-	-
4	Material	4.1 to 4.4	IS 4947	S	1	Each consignment	#
5	Construction	5	IS 4947	-	Each cartridge	-	-
6	Capacity	6	IS 4947	R	Each cartridge	-	-
	Carbon Dioxide	6	IS 4947 IS 15222	S	1	Each consignment	#
7.1	Hydraulic pressure test	7.1	IS 4947	R	Each cartridge	-	-
7.2	Ultimate failure test	7.2	IS 4947	R	1	Each control unit	-
7.3	Leakage test	7.3 7.3.1	IS 4947	R	1	Each control unit	-

# No further testing is required if accompanied with the Test Certificate or ISI marked.

Note-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: The control unit and levels of control as decided by the Bureau are obligatory, to which the licensee shall comply with.