PRODUCT MANUAL FOR DRY CHEMICAL POWDERS FOR FIRE FIGHTING – BC, ABC AND D TYPES ACCORDING TO IS 4308: 2019

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.	**Product**	:	IS 4308 : 2019
	Title	:	DRY CHEMICAL POWDERS FOR FIRE FIGHTING – BC, ABC AND D TYPES
	No. of Amendments	:	NIL
2.	**Sampling Guidelines:**		
a)	**Raw material**	:	Not applcable
b)	**Grouping guidelines**	:	Separate samples of Dry Chemical Powder of each type (BC/ ABC/ D) shall be tested for GoL/CSoL.
c)	**Sample Size**	:	5 kg for all tests
3.	**List of Test Equipment**	:	Please refer ANNEX – A
4.	**Scheme of Inspection and Testing**	:	Please refer ANNEX – B
5.	**Possible tests in a day :** Please refer ANNEX – C		
6.	**Scope of the Licence :**		
	Licence is granted to use Standard Mark as per IS 4308 : 2019 with the following scope:		
	Name of the product		DRY CHEMICAL POWDERS FOR FIRE FIGHTING
	Type		BC type, ABC type , D Type

BUREAU OF INDIAN STANDARDS
Manak Bhawan, 9, Bahadur Shah Zafar Marg,
New Delhi – 110002

ANNEX A

List of Test Equipment

Major test equipment required to test as per the Indian Standard

S. No.	Tests used in with Clause Reference	Test Equipment
1	Determination of Main chemical constituent and Minimum main chemical constituent [Clause 5, Table 1, Sl No (i) & (ii)]	- Analytical balance - Aluminium dishes - Glass desiccator - Oven - Sodium bicarbonate /Potassium bicarbonate - Centrifuge tubes - Centrifuge machine - Steam bath - pH meter - Burette - Absolute /denatured ethanol - Ethanol - Sodium hydroxide - Melting point determination apparatus
2	Apparent density [Clause 5, Table 1, Sl No (iii)]	- Weighing balance - Graduated measuring cylinder - Stop watch
3	Particle size / sieve analysis [Clause 5, Table 1, Sl No (iv)]	- Sieves of 100, 200 and 320 mesh with sieve shaker - Weighing balance - Stop watch
4	Hygroscopicity [Clause 5, Table 1, Sl No (v)]	- Weighing balance - Temperature and humidity control cabinet
5	Water repellency [Clause 5, Table 1, Sl No (vi)]	- Weighing balance - Beaker - Measuring cylinder - Air conditioner - Thermometer - Oven - Desiccator
6	Moisture content [Clause 5, Table 1, Sl No (vii)]	- Weighing balance - Petri dish

		- Desiccator - Sulphuric acid - Air conditioner - Thermometer
7	Rate of flow [Clause 5, Table 1, Sl No (viii)]	- Erlenmeyer glass conical flasks - Weighing balance - SS disc - Rubber tube and collar - Stand
8	Foam compatibility [Clause 5, Table 1, Sl No (ix)]	- Circular fire tray of brass/steel - Burn – back pot of brass/steel - Foam making nozzle as per fig 3 of IS 4308 - Fuel as per clause H-2.4 of IS 4308 - Air conditioner - Stop watch
9	Fire test [Clause 5, Table 1, Sl No (x)]	- To be done in BIS recognized laboratory
10	Temperature resistance test [Clause 5, Table 1, Sl No (xi)]	- Weighing balance - Fire extinguisher conforming to IS 15683 - Oven - Deep freezer - Air conditioner - Stop watch

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 4308: 2019

4. CONTROL UNIT – Dry chemical powder of each type manufactured in a single charge material in the manufacturing process and under the same environmental conditions 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

(1)				(2)	(3)		
Test Details				**Test equipment requirement R: required (or) S: Sub-contracting permitted**	**Levels of Control**		
Cl.	**Requirement**	**Test Methods**			**No. of Sample**	**Frequency**	**Remarks**
		Clause	**Reference**				
5, Table 1	**REQUIREMENTS**						
(i)	Main chemical constituent	5 Annex-A	IS 4308	R	1	Each control unit	-
(ii)	Minimum main chemical constituent	5 Annex-A	IS 4308	R	1	Each control unit	-
(iii)	Apparent density	5 Annex-B	IS 4308	R	1	Each control unit	-
(iv)	Particle size / sieve analysis	5 Annex-C	IS 4308	R	1	Each control unit	-
(v)	Hygroscopicity	5 Annex-D	IS 4308	S	1	Once in two month for each type of dry chemical powder	-
(vi)	Water repellency	5 Annex-E	IS 4308	S	1		
(vii)	Moisture content	5 Annex-F	IS 4308	S	1		
(viii)	Rate of flow	5 Annex-G	IS 4308	R	1	Each control unit	-
(ix)	Foam compatibility	5 Annex-H	IS 4308	S	1	Once in two month for each type of dry chemical powder	Required if declared by the manufacturer
(x)	Fire test	5 Annex-J	IS 4308	S	1	Once in year for each type of dry chemical powder	

(xi)	Temperature resistance test	5 Annex-K	IS 4308	R	1	Once in two month for each type of dry chemical powder	-
(xii)	Colour	5	IS 4308	-	-	Each control unit	-

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

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.

ANNEX – C

Possible tests in a day

(i) Main chemical constituent [Clause 5, Table 1 (i)]
(ii) Minimum main chemical constituent [Clause 5, Table 1 (ii)]
(iii) Apparent density [Clause 5, Table 1 (iii)]
(iv) Particle size/sieve analysis [Clause 5, Table 1 (iv)]
(v) Water repellency [Clause 5, Table 1 (vi)]
(vi) Rate of flow [Clause 5, Table 1 (viii)]
(vii) Colour [Clause 5, Table 1 (xii)]