



**PRODUCT MANUAL
FOR SAFETY MATCHES IN BOXES
ACCORDING TO IS 2653:2004**

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 2653:2004
	Title	:	Safety Matches In Boxes
	No. of Amendments	:	1
2.	Sampling Guidelines:		
a)	Raw material	:	No specific requirement. However Clause 4 mentions the materials used to make safety matches in boxes and applicable standards
b)	Grouping guidelines	:	NA
c)	Sample Size	:	20 Boxes of Safety Matches (minimum) (Note: Details of Match sticks made of wooden splints or wax-coated paper splints to be provided)
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 :		
			All tests except clause 6.5 of IS 2653:2004
6.	Scope of the Licence :		
			“Licence is granted to use Standard Mark as per IS 2653:2004 with the following scope:
	Name of the product		Safety Matches in Boxes

Annex-A
TO PRODUCT MANUAL
FOR SAFETY MATCHES IN BOXES
ACCORDING TO IS 2653:2004

LIST OF TEST EQUIPMENTS

Major test equipment required to test as per the Indian Standard.

Sr. No.	Test Equipment	Tests used in with Clause Reference
1.	Load of 100 N (10 kgf approximately)	Load bearing capacity - 5.1.2.2
2.	Vernier calipers/Dial Calipers(Range> 32mm/L.C of 0.1mm), paraffin wax	Dimensions of individual matches - 5.2
3.	A4 sheet of white paper of grammage 80 + 5 g/m ² ,	Striking performance - 6.1.1
4.	Flint sheet of IS Grit 120 (3/0) [see IS715 (Part 1)]	Striking performance - 6.1.2
5.	1)Air circulated thermo-statically controlled electric oven, 2) Thermometer(Range upto 200°C/ Accuracy 1°C) 3) Wooden Block as per C-2.3	Ignition below 70 °C - 6.2
6.	1)Apparatus for impact test as per D-2 2)Hammer(170g)	Ignition under impact - 6.3
7.	Water, tissue paper	Performance of striking surface – 6.4
8.	Desiccator as per F-2.1	Damp proofness - 6.5
9.	Conditioning chamber to maintain samples at 27+/- 2°C temperature and 65 +/- 5 percent relative humidity	Conditioning of samples

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

ANNEX – B
SCHEME OF INSPECTION AND TESTING
FOR SAFETY MATCHES IN BOXES
ACCORDING TO IS 2653:2004

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 equipments.

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

3. PACKING AND MARKING – The Standard Mark as given in the Schedule of the license shall be printed on the label affixed to each matchbox, on each preliminary packing, gross packing (if applicable) and bundle/carton packing, provided always that the product thus marked and packed conforms to all the requirement of the specification.

3.1 Marking and packing shall be done as per the provisions of the Indian Standard. In addition, the following details shall be mentioned on on the labels attached to each container:

- a) BIS Licence No. CM/L _____.
- b) BIS website details i.e.–“For details of BIS certification please visit www.bis.gov.in”.

4. CONTROL UNIT – For the purpose of the scheme the total quantity of the match boxes produced in a day 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 Standards 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 LEVELS OF CONTROL
(Scheme of Inspection and Testing)**

(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	Visual Inspection						
5.1.1	Contents	5.1.1	IS 2653:2004		5 match boxes at Random	One control Unit	Please see Note No.3
5.1.2.1 & 5.1.2.2	Match boxes	5.1.2.1 & 5.1.2.2	-do-	R	-do-	-do-	-do-
5.1.3	Envelopment	5.1.3	-do-	-	-do-	-do-	-do-
5.1.4	Ease of Opening	5.1.4	-do-	-	-do-	-do-	-do-
5.1.5	Retention of Contents	5.1.5	-do-	-	-do-	-do-	-do-
5.1.6.1 & 5.1.6.2	Defective Match Boxes	5.1.6.1 & 5.1.6.2	-do-	-	100 match boxes at Random	Once in 4 hours production	-do-
5.2	Individual Matches	5.2	-do-	-			
5.2.1.1 & 5.2.1.2	(a)Match Splints	5.2.1.1 & 5.2.1.2	-do-	R	5 nos of sticks at random	Once in 4 hours production	-do-
5.2.2.1 to 5.2.2.4	(b)Unserviceable Sticks	5.2.2.1 to 5.2.2.4	-do-	R	6 match boxes at random	-do-	-do-
5.3	Match Boxes	5.3	-do-	-	6 match boxes at random	-do-	-do-

Contd..on pg 5

....Contd from pg 4

**Table 1 LEVELS OF CONTROL
(Scheme of Inspection and Testing)**

(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				
6	Performance requirements						
6.1	Striking Performance	6.1	-do-	-			
6.1.1	(a)General	6.1.1	-do-	R	10 sticks out of 5 boxes at Random	One control Unit	Please See Note 4
6.1.2	(b)Safety Matches	6.1.2	-do-	R	-do-	-do-	-do-
6.2	Ignition Below 170°C	6.2	-do-	R	-do-	-do-	-do-
6.3	Ignition Under Impact	6.3	-do-	R	-do-	-do-	-do-
6.4	Performance of the Striking Surface	6.4	-do-	-			
6.4.1	(a) Durability of the Striking Surface	6.4.1	-do-	R	5 match boxes at Random	-do-	-do-
6.4.2	(b)Ignition of the Striking Surface	6.4.2	-do-	R	-do-	-do-	-do-
6.4.3	(c)Loss of Burning Fragments	6.4.3	-do-	R	-do-	-do-	-do-
6.5	Damp Proofness for Match Boxes	6.5	-do-	R	-do-	-do-	-do-

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled 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 to BO Head

Note-3: At every stage of production, particularly filling of sticks into boxes, making of friction surface, checking of sticks to remove unserviceable sticks, checking of coating of paraffin wax on the splints and to avoid defective boxes, the factory shall maintain appropriate controls and checks to ensure that the matchbox so produced conforms to all requirements of the standard.

Note-4: Whenever a sample from the control unit is found to fail to conform to any of these requirements, marking of the product shall be stopped with immediate effect. The cause of the failure shall be investigated and rectified. Thereafter, the number of samples per control unit shall be doubled. Original frequency of testing shall not be restored till samples from three consecutive control units meet the requirements of the standard.