



**PRODUCT MANUAL FOR  
SUGAR BOILED CONFECTIONARY ACCORDING TO IS 1008 : 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.	<b>Product</b>	:	IS 1008 : 2004
	<b>Title</b>	:	Sugar Boiled Confectionary
	<b>No. of Amendments</b>	:	01
2.	<b>Sampling Guidelines:</b>		
a)	<b>Raw material</b>	:	Ingredients used shall be as per Clause 3.1 and 3.2 of IS 1008.
b)	<b>Grouping guidelines</b>	:	NA
c)	<b>Sample Size</b>	:	500g
3.	<b>List of Test Equipment</b>	:	Please refer ANNEX – <u>A</u>
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer ANNEX – <u>B</u>
5.	<b>Possible tests in a day :</b>		
	i. Description ii. Ash Sulphated iii. Acid insoluble ash iv. Moisture		
6.	<b>Scope of the Licence :</b>		
	Licence is granted to use Standard Mark as per IS 1008 : 2004 with the following scope:		
	Name of the product	Sugar Boiled Confectionary	
	Type	i. Hard Boiled Sugar Confectionery ii. Pan Goods Confectionery (Dragees) iii. Toffees	

ANNEX A

TO PRODUCT MANUAL FOR  
SUGAR BOILED CONFECTIONARY ACCORDING TO IS 1008 : 2004

LIST OF TEST EQUIPMENT

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

Sr. No.	Tests used in with Clause Reference	List of Equipments
1.	Ash sulphated Cl 5.3 and Table 1 & 2 (cl 6 of IS 6287)	Sulphuric acid, Analytical balance, 9 cm diameter platinum basin, Hot plate, Muffle furnace, Desiccator.
2	Acid insoluble ash Cl 5.3 and Table 1 & 2 (cl 7 of IS 6287)	Dilute Hydrochloric acid-approx. 5 N, Analytical balance, platinum basin, burner, muffle furnace, Desiccator, watch glass, Whatman filter paper No. 42 or its equivalent, Air oven -capable of operating at 105 ±2°C.
3	Sulphur dioxide Cl 5.3 and Table 1 & 2 (cl 12 of IS 6287)	Apparatus as assembled in fig 2 of IS 6287, Sodium hydroxide solution, Bromophenol Blue Indicator solution, Hydrogen Peroxide Solution, Conc. Hydrochloric acid, Carbon dioxide gas, Standard sodium hydroxide solution, Analytical balance (0- 200g, LC-0.01 mg).
4	Arsenic Cl 5.3 and Table 1 (cl 13 of IS 6287)	<p><b>Visual comparison method:</b> Distillation apparatus, Apparatus for the determination of arsenic-Assembled as shown in Fig.4 of IS 6287, Dilute nitric acid, Conc. Sulphuric acid, conc. Hydrazine-bromide mixture, Lead acetate solution, Mercuric chloride paper, conc. Hydrochloric acid, stannous chloride solution, stannated hydrochloric acid, Potassium iodide, Zinc, strong solution of arsenic, Analytical balance (0-200g, LC-0.01 mg).</p> <p><b>Silver Diethyldithiocarbamate method:</b> Evolution and absorption apparatus, Spectrophotometer or photoelectric absorptiometer, Conc. Hydrochloric acid, Potassium iodide solution, Stannous iodide solution, stannous chloride solution, Zinc granules, Silver diethyldithiocarbamate solution, conical flask.</p>
5	Lead Cl 5.3 and Table 1 (cl 14 of IS 6287)	<p><b>Atomic absorption spectrophotometric method:</b> Atomic absorption spectrophotometer, stirring motor, Strontium solution, Ternary acid mixture, Nitric acid, Lead</p>

		<p>standard solution, Analytical balance, Kjeldahl flask, glass beads, Centrifuge.</p> <p><b>Visual comparison method:</b> Nessler cylinder, Acetic acid, Dilute ammonium hydroxide, Potassium cyanide solution, Sodium sulphide solution, Standard lead solution, Analytical balance.</p>
6	<p>Copper Cl 5.3 and Table 1 (cl 15 of IS 6287)</p>	<p><b>Spectrophotometric method:</b> Spectrophotometer, Concentrated sulphur acid, Sodium carbonate-solid, concentrated hydrochloric acid, Citric acid-solid, Ammonium hydroxide solution, Sodium diethyldithiocarbamate solution, Carbon tetrachloride-re-distilled, Sodium sulphate-anhydrous, concentrated nitric acid, Standard copper solution, Analytical balance, volumetric flask, Separating funnel, pipette.</p>
7	<p>Zinc Cl 5.3 and Table 1 (cl 16 of IS 6287)</p>	<p><b>Spectrophotometric/Colorimetric Method:</b> Spectrophotometer, Concentrated nitric acid-re-distilled, Concentrated sulphuric acid Perchloric acid, Methyl red indicator solution, Copper sulphate solution, Ammonium hydroxide solution, Conc. Hydrochloric acid, Hydrogen sulphide gas, dil. Hydrochloric acid, Bromine water, Phenol red indicator solution, hydrochloric acid, dithizone, carbon tetrachloride, chloroform, Ammonium citrate solution, Dimethyl glyoxime solution, <math>\alpha</math>-Nitroso -<math>\beta</math>-naphthol solution, Hydrochloric acid, stock solution of zinc, standard solution of zinc, Erlenmeyer flask, Analytical balance, Kjeldahl flask, litmus paper, Whatman filter no. 42, pipettes.</p>
8	<p>Tin Cl 5.3 and Table 1 (cl 17 of IS 6287)</p>	<p><b>Gravimetric method:</b> Concentrated nitric acid, concentrated sulphuric acid, Hydrogen peroxide solution, Ammonium oxalate solution, Ammonium hydroxide solution, Concentrated hydrochloric acid, Dilute sulphuric acid, Hydrogen sulphide gas, Wash solution, Ammonium polysulphide solution, Dilute acetic acid, Analytical balance, Kjeldahl flask, asbestos mat.</p> <p><b>Volumetric method:</b> Air-free wash solution, Iodine standard solution, Tin standard solution, Sheet aluminium, Starch indicator, Kjeldahl flask, heating plate, Burette.</p>
9	<p>Moisture Cl 5.3 and Table 2 (cl 5 of IS 6287)</p>	<p>Analytical balance, Aluminium flat dish with tight-fit cover having a diameter of about 75 mm and a height of about 25 mm, Vacuum oven (capable of operating at <math>65 \pm 1^\circ\text{C}</math> and pressure of 50 mm Hg), Desiccator.</p>
10	<p>Reducing sugar Cl 5.3 and Table 2</p>	<p>Stock solution of Dextrose, Analytical balance, Standard Dextrose Solution, Methylene blue indicator solution,</p>

	(cl 8 of IS 6287)	Petroleum ether-redistilled below 60°C, Fehling's solution, Copper sulphate, conc. Sulphuric acid, asbestos or filter paper, Potassium sodium tartrate, sodium hydroxide, Zinc acetate solution, Potassium Ferrocyanide solution, Beaker, volumetric flask, Whatman filter paper No. 40 or its equivalent, Burette.
11	Sucrose Cl 5.3 and Table 2 (cl 9 of IS 6287)	Conc. Hydrochloric acid, Fehling's solution, copper sulphate, conc. Sulphuric acid, asbestos, potassium sodium tartrate, Rochelle salt Sodium hydroxide, graduated flask, conical flask, water bath.
12	Fat Cl 5.3 and Table 2 (cl 10 of IS 6287)	<b>Simple extraction method:</b> Mojonnier fat extraction tube or nay other similar apparatus, Flasks, Diethyl ether-peroxide free, Petroleum ether-boiling range 40 to 60°C, Analytical balance.  <b>Roese-Gottlieb method:</b> Mojonnier fat extraction tube or nay other similar apparatus, Concentrated ammonia solution, Ethyl alcohol, Diethyl ether, Petroleum ether- boiling range 40 to 60°C.
13	Protein Cl 5.3 and Table 2 (cl 11 of IS 6287)	Recommended apparatus as per fig 1 of IS 6287, Kjeldahl flask, Anhydrous sodium sulphate, Copper Sulphate, Concentrated sulphuric acid, Sodium hydroxide solution, standard sulphuric acid, methyl red indicator solution, standard sodium hydroxide solution, Analytical balance (0-200 g, LC-0.01 mg).
14	Lactose Cl 5.3 and Table 2 (cl 13 of IS 1479 Part 2)	<b>Polarimetric method:</b> polarimeter,with 400-mm and 200-mm tubes and sodium lamp, Acid mercuric nitrate solution, Mercuric iodide solution, Phosphotungstic acid solution, graduated flasks, Analytical balance, filter paper.  <b>Munson and Walker Gravimetric Method:</b> Fehling solution, Standard sodium hydroxide solution, Asbestos, Ethyl alcohol, Ethyl ether, Gooch crucible, oven, Desiccator, Bunsen burner.  <b>Munson and Walker Volumetric Method:</b> Ferric sulphate solution in 20 percent sulphuric acid-saturated, Standard potassium permanganate solution.

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

**PM/ 1008/ 1  
August 2020**

## ANNEX B

### SCHEME OF INSPECTION AND TESTING FOR SUGAR BOILED CONFECTIONARY ACCORDING TO IS 1008 : 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 2) 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(s) as given in the Schedule of the licence shall be printed/stenciled on each package of Sugar Boiled Confectionery or printed on the label applied to the container as the case may be provided always that the material in each container to which this mark is applied conforms to every requirement of the specification.

**3.1 Marking-** Each container of Sugar boiled confectionery shall be marked or labelled legibly and indelibly with the information provided under clause 6.2 of IS 1008. In addition, the following information shall be clearly and indelibly marked on 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](http://www.bis.gov.in)”

**3.1 Packing** – In the case of printed packaging material, the printing ink shall be non-toxic and shall not come in direct contact with the product. The wrapped or unwrapped material shall be bulk packed or further packed in clean, reasonably air-tight and sound containers. Such containers shall be made of tin-plate, glass, plastics, thermoplastic material, moisture-proof paper, cellulose or any other suitable flexible packaging material. PCRC sheets may be used for bulk pack of wrapped product.

**4. CONTROL UNIT** – For the purpose of this scheme, the total quantity of material of particular type of sugar boiled confectionery manufactured during the day shall constitute a control unit.

**4.1** Sensory tests such as appearance, taste and flavour shall be performed in accordance with the existing practice in the factory.

**5. LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and 2 and the levels of control in column 3 of Table 1 and 2, 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 HYGIENIC CONDITIONS** – The material shall be manufactured, packed stored, and distributed under hygienic conditions (See IS 2491). All the processing equipments should be properly cleaned and care should be taken to prevent infestation.

**7. RAW MATERIAL** - It is recommended that the routine analysis of each consignment of raw materials received in the factory shall be carried out and appropriate records maintained. Alternatively, a certificate of conformity shall be obtained from the suppliers of the material. Such certificates have to be made available to the Bureau on request.

7.1 All the raw materials shall be stored in suitable places taking care to see that adventitious impurities do not find an entrance

**8. 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 FOR HARD BOILED AND PAN GOODS SUGAR CONFECTIONERY**

(1)				2	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Clause	Requirement	Test Method Cl. Ref.	Test Method IS		No. of Sample	Frequency	Remarks
5.1 & 5.1.1	Description	5.1 & 5.1.1	IS 1008	R	One	Each Control Unit	Records may be maintained as per proforma I attached. In case of failure of the sample for any one of the characteristics, the particular control unit shall not be marked. If the material can be reconditioned, a fresh sample shall be taken after reconditioning and tested for that characteristics. The control unit shall be rejected if the sample taken again fails.
5.3 Table 1, i)	Ash Sulphated	6	IS 6287	R	One	-do-	
5.3 & Table 1, ii)	Acid Insoluble Ash	7	-do-	R	One	-do-	
5.3 Table 1 iii)	Sulphur dioxide	12	-do-	R	One	-do-	
5.3 Table 1 vi)	Arsenic	13	-do-	R	One	Once a week	
5.3 Table 1 v)	Lead	14	-do-	R	One	-do-	
5.3 Table 1 vi)	Copper	15	-do-	R	One	-do-	
5.3 Table 1 vii)	Zinc	16	-do-	S	One	Once a month	
5.3 Table 1 viii)	Tin	17	-do-	R	One	Once a week	

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 by BO Head.

**TABLE 2**  
**LEVELS OF CONTROL FOR TOFFEES**

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub- contracting permitted	Levels of Control		
Clause	Requirement	Test Method Cl. Ref.	Test Methos IS		No. of Samples	Frequency	Remarks
5.1 & 5.1.1	Description	5.1 & 5.1.1	IS 1008	R	One	Each Control Unit	Records may be maintained as per proforma II attached. In case of failure of the sample for any one of the characteristics, the particular control unit shall not be marked. If the material can be reconditioned, a fresh sample shall be taken after reconditioning and tested for that characteristic. The control unit shall be rejected if the sample taken again fails.
5.3 Table 2, i)	Moisture	5	IS 6287	R	One	-do-	
5.3 Table 2, ii)	Ash sulphated,	6	-do-	R	One	-do-	
5.3 Table 2, iii)	Acid Insoluble Ash	7	-do-	R	One	-do-	
5.3 Table 2 iv)	Sulphur dioxide	12	-do-	R	One	-do-	
5.3 Table 2v)	Reducing sugar (calculated as dextrose)	8	-do-	R	One	-do-	
5.3 Table 2 vi)	Sucrose	9	-do-	R	One	-do-	
5.3 Table 2 vii)	Fat, (on dry basis)	10	-do-	R	One	-do-	
5.3 Table 2 viii)	Protein, (on dry basis)	11	-do-	R	One	-do-	
5.3 Table 2 ix)	Lactose, (on dry basis)	13	IS 1479 (Pt 2)	R	One	-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 by BO Head.



**PROFORMA I**

Date	Type of hard boiled/pan goods sugar confectionery	Control unit in kg.	Description	Ash sulphated	Acid insoluble ash	Sulphur dioxide	Arsenic	Lead	Copper	Zinc	Tin	Remarks
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Note: In case the production is started after the shutdown of the plant for more than a week's time, for any reason, it shall be ensured before packing and dispatching the material with the Standard Mark, that the material is tested for conformity to all the requirements of the specification.

**PROFORMA II**

Date	Types of toffee	Control unit	Quantity in kg	Description	Moisture	Ash sulphated	Acid insoluble ash	Sulphur dioxide	Reducing sugar
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Sucrose	Fat	Protein	Lactose	Remarks
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Note: In case the production is started after the shutdown of the plant for more than a week's time, for any reason, it shall be ensured before packing and dispatching the material with the Standard Mark, that the material is tested for conformity to all the requirements of the specification.