SRI LANKA STANDARD 883: 2017

UDC 664.117

SPECIFICATION FOR
BROWN SUGAR
(First Revision)

SRI LANKA STANDARDS INSTITUTION

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SLS 883: 2017
(incorporating Corrigendum 01,Cor 02 and Erratum sheet)

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Sri Lanka Standard
SPECIFICATION FOR BROWN SUGAR
(First Revision)

FOREWORD

This Standard was approved by the Sectoral Committee on Food Products and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 2017-12-04.

This Standard was first published in 1990. In this revision requirements have been updated by introducing sulphated ash and test methods for most of the chemical requirements have been revised to fall in line with the International Commission for Uniform Methods of Sugar Analysis (ICUMSA). In addition limits for heavy metals have been updated and some new requirements were introduced to safeguard the customer expectations.

This Standard is subject to the provisions of the Food Act No. 26 of 1980 and the regulations framed thereunder.

For the purpose of deciding whether a particular requirement of this Standard is complied with, the final value, observed or calculated, expressing the result of a test or an analysis, shall be rounded off in accordance with **SLS 102**. The number of significant places retained in the rounded off value shall be the same as that of the specified value in this Standard.

1 SCOPE

This Standard prescribes the requirements and methods of sampling and test for brown sugar intended for direct consumption.

2 REFERENCES

SLS 102 Rules for rounding off numerical values.
SLS 143 Code of practice for general principles of food hygiene
SLS 191 White Sugar.
SLS 428 Random sampling methods.
SLS 699 Low density polyethylene films for packaging and allied purposes.
SLS 700 Jute bags
SLS 1567 Starches and derived products Part 4: Determination of sulphated ash
Official methods of Analysis, Association of Official Analytical Chemists (AOAC) 20th edition,

3 DEFINITIONS

For the purpose of this Standard, the following definitions shall apply:

3.1 brown sugar: A sugar obtained by partial purification of raw sugar and intended for direct human consumption without further processing.

4 REQUIREMENTS

4.1 Hygiene

The product shall be manufactured, packaged, stored, transported and distributed in accordance with the hygienic conditions as prescribed in **SLS 143**.

4.2 Other requirements

Brown sugar shall comply with the requirements given in Table **1** when tested according to the methods prescribed in Column **4** of table **1**.

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Table 1 – Requirements for brown sugar

SI No. (1)	Characteristic (2)	Requirements		Method of test (5)
		Brown sugar (3)	Sugar cubes (4)	
(i)	Polarization value, °S, min.	99.0	99 .0	Appendix B of SLS 191
(ii)	Invert sugar, per cent by mass, max.	0.3	0 .3	Appendix C of SLS 191
(iii)	Loss on drying for 3 hours at 105 ° C, per cent by mass, max.	0.25	Not applicable	Appendix D of SLS 191
(iv)	Colour, ICUMSA units, max.	1 500	1 500	Appendix B
(v)	Sulphated ash, per cent by mass, max	3.5	3 .5	SLS 1567 Part 4

4.3 Heavy Metals

The product shall not exceed the limits for heavy metals given in Table **2**, when tested according to the methods given in Column **4** of the Table.

Table 2 – Limits for heavy metals

SI. No. (1)	Heavy metal (2)	Limit (3)	Method of test (4)
i)	Arsenic, mg/kg, max.	1.0	AOAC 999.10
ii)	Copper, mg/kg, max.	2.0	AOAC 960.40
iii)	Lead, mg/kg, max.	0.5	AOAC 994.02
iv)	Chromium, mg/kg, max.	2.0	Appendix J of DSLS 191
v)	Cadmium , mg/kg, max.	1.5	AOAC 999.11

5 PACKAGING

5.1 Bulk packages

Brown sugar shall be packaged in clean woven polypropylene bags or jute bags conforming to **SLS 700**. The bag shall be lined / laminated/ extrusion coated with an inner food grade polyethylene lining conforming to **SLS 699**. The lining shall have a minimum thickness of 40 µm. The mouth of the each bag shall be securely fastened.

Any other food grade packaging material equivalent or superior in barrier properties to polyethylene may also be used.

5.2 Retail packages

Brown sugar shall be suitably packaged in food grade plastic polyethylene bags conforming to **SLS 699** or suitable food grade packaging material. The bag shall have a minimum thickness of 50 µm.

6 MARKING AND/OR LABELLING

6.1 Bulk packages

Each bag shall be legibly and indelibly marked or labelled with the following:

a) Name of the product including the type;
b) Brand name or trade name, if any;
c) Net mass of the product (in kg);
d) Name and address of the manufacturer, exporter ; and
e) Batch number or code number.
f) Country of origin;
g) Month and year of manufacture; and
h) Date of the expiry.

6.2 Retail packages

Each bag or container shall be legibly and indelibly marked or labelled with the following:

a) Name of the product including the type;
b) Brand name or trade name, if any;
c) Net mass of product; in “g” or “kg”
d) Name and address of the manufacturer or packer, (including the country of origin);
e) Batch number or code number;
f) Month and year of manufacture; and
g) Date of the expiry.

8 METHOD OF TEST

Test shall be carried out as prescribed in the relevant Appendices of **SLS 191** Part 4 of SLS 1567, Appendix **B** of this Standard and AOAC 960.40, AOAC 994.02, AOAC 999.10, and AOAC 999.11.

9 CRITERIA FOR CONFORMITY

A lot shall be declared as conforming to the requirements of this Standard if the following conditions are satisfied.

9.1 Each container inspected as in **A.7.1** satisfies the relevant requirements.

9.2 The test results on the composite sample when tested as in **A.7.2** satisfy the relevant requirements.

APPENDIX A
SAMPLING

A.1 LOT

In any consignment, all containers of sugar belonging to one batch of manufacture or supply shall constitute a lot.

A.2 GENERAL REQUIREMENTS OF SAMPLING

A.2.1 Samples shall be drawn in a protected place not exposed to damp air, dust or soot.

A.2.2 Precautions shall be taken to protect samples, the material being sampled, the sampling instruments and the containers for samples from adventitious contamination.

A.2.3 The samples instrument shall be clean and dry when used.

A.2.4 The sample be placed in clean, dry and moisture proof containers which shall be sealed air-tight after filling and marked with the necessary details of sampling.

A.2.5 The sample shall be protected from light as far as possible.

A.3 SAMPLING INSTRUMENT

A sampling tube or an appropriate instrument shall be used.

A.4 SCALE OF SAMPLING

Samples shall be tested from each lot for ascertaining its conformity to the requirements of this specification.
Samples shall be selected at random. To ensure randomness of selection tables of random numbers as given in **SLS 428** shall be used.

A.4.1 For bulk containers

A.4.1.1 If a lot constitutes of bulk containers, then the number of containers to be selected from the lot shall be in accordance with **Table 3**.

TABLE 3 – Scale of sampling for bulk containers

Number of packages or containers in the lot **(1)**	Number of packages or containers to be selected **(2)**
Up to 150	5
151 to 500	12
501 to 3 200	17
3 201 to 10 000	25
10 001 to 25 000	35

A.4.1.2 If a lot contains more than 25 000 bulk containers, then the lot shall be divided into two or more equal or almost equal sub groups. These sub divisions shall be considered as separate lots.

A.4.2 For retail containers

If a lot constitutes of retail containers, then the number of retail containers to be selected from the lot shall be in accordance with **Table 4**.

TABLE 4 – Scale of sampling for bulk containers

Number of packages or containers in the lot **(1)**	Number of packages or containers to be selected **(2)**
Up to 150	6
151 to 280	8
281 to 500	12
501 to 1 200	16
1 201 and above	20

A.5 PREPARATION OF SAMPLES

A.5.1 Samples from bulk containers

Approximately equal quantities of material shall be taken from the top, middle and bottom portions of each container selected as in **A.4.1** with the help of an appropriate sampling instrument. The material thus obtained shall be mixed together and reduced using coning and quartering method to get a composite sample of approximately 500g.

A.5.2 Samples from retail containers

The containers selected as in A**.4.2** shall be emptied on a clean surface. The material shall be mixed together and reduced using coning and quartering method to get a composite sample of approximately 500 g.

A.6 REFERENCE SAMPLE

If a reference sample is required the size of the composite sample shall be 1 500 g. The sample thus obtained shall be divided into three equal parts, one for the purchaser, one for the supplier and the third for reference.

A.7 NUMBER OF TESTS

A.7.1 Each container selected as in A**.4.1** or A**.4.2** shall be inspected for packaging and marking requirements.

A.7.2 The composite sample prepared as in A**.5.1** or A**.5.2** shall be tested for the requirements given in 4**.2** and 4**.3**.

APPENDIX B
DETERMINATION OF COLOUR

B.1 PRECEDURE

Weigh, to the nearest milligram, about 12.5 g of the sample. Follow the procedure given for plantation white sugar in Appendix **E** of **SLS 191: 2017**

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SLS CERTIFICATION MARK

The Sri Lanka Standards Institution is the owner of the registered certification mark shown below. Beneath the mark, the number of the Sri Lanka Standard relevant to the product is indicated. This mark may be used only by those who have obtained permits under the SLS certification marks scheme. The presence of this mark on or in relation to a product conveys the assurance that they have been produced to comply with the requirements of the relevant Sri Lanka Standard under a well designed system of quality control inspection and testing operated by the manufacturer and supervised by the SLSI *which includes surveillance inspection of the factory, testing of both factory and market samples.*

Further particulars of the terms and conditions of the permit may be obtained from the Sri *Lanka Standards Institution, 17, Victoria Place, Elvitigala Mawatha, Colombo 08.*

Printed at SLSI (Printing Unit)

SRI LANKA STANDARDS INSTITUTION

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