SRI LANKA STANDARD 266 : 1990

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SPECIFICATION FOR

CANNED PINEAPPLE

(FIRST REVISION)

SRI LANKA STANDARDS INSTITUTION

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(FIRST REVISION)

SLS 266:1990

Gr. 7

SRI LANKA STANDARDS INSTITUTION
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Sri Lanka.

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on Canned Fruits

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Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the Committees to which the revisions are entrusted.

This standard does not purport to include all the necessary provisions of a contract.

SRI LANKA STANDARD
SPECIFICATION FOR CANNED PINEAPPLE
(FIRST REVISION)

FOREWORD

This Sri Lanka Standard was authorized for adoption and publication by the Council of the Sri Lanka Standards Institution on 1991-01-31, after the draft, finalized by the Drafting Committee on Canned Fruits, had been approved by the Agricultural and Food Products Divisional Committee.

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

This specification was originally issued in 1974. The main changes made to this revision include the provision made to enable manufacturers to pack the product in regular, heavy and solid packs, the classification of the covering liquid based on the brix value, the extension of the requirement for uniformity of size to cover all styles and the stipulation of the refractometric method for the determination of the brix value.

For the purpose of deciding whether a particular requirement of this specification 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 CS 102. The number of significant places retained in the rounded off value shall be the same as that of the specified value in this specification.

In this revision, the valuable assistance derived from the publications of the Codex Alimentarius Commission and the Standards Institution of Malaysia is gratefully acknowledged.

1 SCOPE

This specification prescribes the requirements and methods of sampling and test for canned pineapple, *Ananas comosus* (L.) Merr. (*Ananas sativus* (L.) Lindl.).

2 REFERENCES

CS 102 Presentation of numerical values
CS 124 Test sieves
SLS 191 White sugar
SLS 209 Code of practice for the manufacture of fruit and vegetable products (processed)
SLS 214 Fruit squashes, fruit syrups and fruit cordials (First revision)
SLS 315 Determination of tin
SLS 428 Random sampling methods
SLS 467 Labelling of prepackaged foods
SLS 614 Potable water.

3 DEFINITIONS

3.1 **head space** : The vertical distance from the top of the double seam to the level of the surface of the contents.

3.2 **cut out syrup** : The syrup obtained by draining the product, after the cans have been stored for not less than 14 days from the date of manufacture.

3.3 **defects** : Residual peel, woody core, crown, remnants of eyes and damage due to mechanical injury.

3.4 **blemished units** : Processed units affected by discolouration or other abnormalities, which are easily noticeable, on visual examination.

3.5 **segment or tid bit** : Wedge shaped section of pineapple produced by dividing a round cut slice or ring into portions of radial cuts, predominantly 8mm to 13 mm in thickness.

3.6 **chunk** : Rectangular piece approximately square in cross section.

3.7 **cube** : Approximately cube shaped piece.

3.8 **round cut slice or spiral slice** : Whole slice or ring of pineapple practically circular in outline that has been cut approximately at right angles to the longitudinal axis of the fruit.

3.9 **spiral cut slice or spiral slice** : Whole slice or ring of pineapple that has been cut approximately at right angles to the longitudinal axis of the slice or ring and serrated by a series of fairly regular wedge-shaped incisions made for the purpose of removing the eyes from the fruit.

3.10 **whole** : Cylindrical whole unit with the core removed.

3.11 **half slices** : Uniformly cut, approximately semi-circular halves of slices.

3.12 **quarter slices** : Uniformly cut one-fourth portion of slices.

3.13 **broken slices** : Arc shaped portions which may not be uniform in size and/or shape.

3.14 **spears or fingers** : Long slender pieces cut radially and lengthwise of the cored pineapple cylinder predominantly 65 mm or longer.

3.15 **pieces** : Irregular shapes and sizes not identifiable as a specific style and does not include "chunks" or "chips".

3.16 **chips** : Small irregular shapes and sizes of pineapple pieces similar to that left over after dicing of pineapple, which may be included in crushed style.

3.17 **crushed or crisp cut** : Finely cut, shredded, grated, or diced pieces of pineapple which may include chips in the crushed mass.

4 TYPES OF PACK

The products may be packed in the following types of pack:

4.1 Regular

Packs with a liquid packing medium, with a drained fruit mass of at least 63 per cent in the case of chips or crushed styles and at least 58 per cent for all other styles (see also 7.6).

4.2 Heavy

Chips or crushed styles with or without sweetening ingredients with a drained fruit mass of at least 73 per cent (see also 7.6).

4.3 Solid

Chips or crushed styles with or without sweetening ingredients with a drained fruit mass of at least 78 per cent (see also 7.6).

5 STYLES OF PRESENTATION

The product may be presented in the following styles:

5.1 Round cut slices/spiral cut slices/rings.

5.2 Half slices/quarter slices/broken slices.

5.3 Whole/chunk/cube/spears or fingers.

5.4 Pieces/chips/crushed.

NOTE

It is recommended that one style is packed in a container.

6 INGREDIENTS AND ADDITIVES

6.1 Raw material

The product shall be processed using fresh, frozen or previously canned pineapple prepared from ripe fruits harvested at the correct stage of maturity. The fruits shall be free from any insect infestation or disease. The fruits shall be thoroughly cleaned and shall be free from harmful insecticides and fungicide residues.

6.2 Citric acid

6.3 Ascorbic acid

6.4 **Nutritive sweeteners**

Sucrose, invert sugar, dextrose, dried glucose syrup and glucose syrup.

White sugar conforming to SLS 191 shall be used.

6.5 **Potable water**, conforming to SLS 614.

7 REQUIREMENTS

7.1 Hygiene

The product shall be processed, packed, transported and stored under hygienic conditions described in SLS 209.

7.2 Appearance

The product shall be of bright yellow colour characteristic of the variety of pineapple used for processing. It shall be free from defects. The blemished units shall be not more than 5 per cent by count of the drained fruit mass. The covering syrup shall be free from discolouration. The product shall also be free from foreign matter and any signs of fermentation.

7.3 Taste and odour

The product shall have the taste and odour characteristic of the variety of pineapple used for processing. It shall be free from scorching or caramalization. The product shall be free from off flavour and off-odour.

7.4 Texture

The product shall have a fleshy and tender texture. When the core material is trimmed from the pineapple and weighed, it shall be not more than 7 per cent by mass of the drained mass of the contents.

7.5 Uniformity of size and shape

7.5.1 *Slices/spiral slices/whole slices/rings*

The slices or rings shall be uniform in size. The thickness of the slices or rings shall vary within a range of 7 mm to 12 mm. The mass of the largest slice or ring in a container shall be not more than 1.4 times the mass of the smallest slice or ring.

7.5.2 *Half slices/quarter slices*

The mass of the largest unit in a container shall be not more than 1.75 times of the mass of the smallest unit, with the exception of an occasional broken piece due to splitting or an occasional whole slice which has not been completely cut through.

7.5.3 *Spears or fingers*

The mass of the largest unbroken unit in a container shall be not more than 1.4 times the mass of the smallest unbroken unit.

7.5.4 *Tid bits*

Not more than 15 per cent by mass of the drained mass of pineapple in the container shall contain tid bits each weighing less than three fourths of the average weight of the untrimmed tid bits.

7.5.5 *Chunks*

The total number of pieces which weigh less than 5 g each shall be not more than 15 per cent by mass of the drained fruit mass in the container.

7.5.6 *Cubes*

a) The total number of units which pass through a screen having square openings of 8 mm, shall be not more than 10 per cent by mass of the drained fruit mass in the container.
b) The total number of pieces which weigh more than 3 grams each shall be not more than 15 per cent by mass of the drained fruit mass in the container.

7.6 Drained mass

The drained mass of the fruit ingredients shall be in accordance with Column 3 of Table 1, when tested according to the method given in Column 4 of the table.

Table 1 - Drained mass

Sl. No. (1)	Type of pack (2)	Drained fruit mass, per cent, minimum (3)	Method of test (4)
i)	Regular (crushed/chips styles only)	63	) Appendix B
ii)	Heavy (crushed/chips styles only)	73	) Appendix B
iii)	Solid (crushed/chips styles only)	78	) Appendix B
iv)	All other styles	58	) Appendix B

7.7 Requirements for packing media

The covering liquid shall be sugar syrup, sweetened or unsweetened pineapple juice, clarified juice or water. Where products are packed in syrup the brix value of the syrup at the time of cut-out shall be in accordance with Column 3 of Table 2 when tested according to the method given in Column 4 of the table.

TABLE 2 - Brix value of syrup

Sl. No. (1)	Type of syrup (2)	Brix value (3)	Method of test (4)
i)	Extra heavy	22 - 35	)
ii)	Heavy	18 - 21	)Appendix B of
iii)	Light	14 - 17	)SLS 214 : 1985
iv)	Extra light	10 - 13	)

7.8 Vacuum of can

The vacuum of the can shall be not less than 125 mm of mercury when tested according to the method given in Appendix D.

7.9 Head space of can

The head space of the can shall be not more than 12 mm, when tested according to the method given in Appendix E.

7.10 Limits for heavy metals

The tin content, calculated as Sn, shall be not more than 250 mg/kg, when tested according to the method given in SLS 315.

8 PACKAGING AND MARKING

8.1 Packaging

8.1.1 The product shall be packed in suitable clean containers which are hermetically sealed. The container shall not alter the flavour, odour or appearance of the product. The container shall show no evidence of corrosion, leakage, bloating, denting, soft swells or hard swells.

8.2 **Marking**

8.2.1 The following information shall be marked or labelled legibly and indelibly on each container:

a) Name of the product, as "CANNED PINEAPPLE";
b) The style of presentation (see 5);
c) A description of the packing medium in close proximity to the product (see 7.7);
d) Brand or trade name;
e) Net content, in grams or kilograms, as applicable;
f) Name and address of the manufacturer, distributor or importer including the country of origin;
g) Batch or code number;
h) Date of expiry;
i) Minimum drained mass; and
j) A list of ingredients in descending order of proportion.

8.2.2 Marking and labelling shall be in accordance with SLS 467.

NOTE

Attention is drawn to certification facilities offered by the Sri Lanka Standards Institution. See the inside back cover of this standard.

9 SAMPLING

Representative samples for testing shall be drawn as prescribed in Appendix A.

10 METHODS OF TEST

Tests shall be carried out as prescribed in the relevant Sri Lanka Standards and Appendices B to D of this specification.

11 CRITERIA FOR CONFORMITY

A lot shall be declared as conforming to the requirements of this specification, if the following conditions are satisfied:

11.1 Each container inspected as in A.3.1 satisfies the relevant requirements.

11.2 The values of the expression $\bar{x}$ - 1.1s calculated using the test results on vacuum of can is not less than the specified value.

11.3 The values of the expression $\bar{x}$ - 1.1s calculated using the test results on head space of can is not greater than the specified value.

11.4 The values of the expression $\bar{x}$ - 1.1s calculated using the test results on drained mass is not less than the specified value.

11.5 Each container tested as in A.3.5 satisfies the relevant requirements.

11.6 The composite sample tested as in A.3.6 satisfies the relevant requirements.

NOTE

$\bar{X}$ and s represent mean and standard deviation respectively and are calculated using respective test results.

APPENDIX A
SAMPLING

A.1 LOT

In any consignment all the containers of pineapple of the same type, style and size belonging to one batch of manufacture or supply shall constitute a lot.

A.2 SCALE OF SAMPLING

A.2.1 Samples shall be tested from each lot for ascertaining its conformity to the requirements of this specification.

A.2.2 The number of containers to be selected from a lot shall be in accordance with Column 2 of Table 3.

TABLE 3 - Scale of sampling

Number of containers in the lot (1)	Number of containers to be selected (2)
Up to 150	3
151 to 500	4
501 to 1 200	5
1 201 to 3 200	7
3 202 to and above	8

A.2.3 If the containers are packed in cartons, select the number of cartons according to Column 2 of Table 3 and draw one container from each of the selected cartons to obtain the required sample.

A.2.4 The containers shall be selected at random. In order to ensure randomness of selection tables of random numbers as given in SLS 428 shall be used.

A.3 Number of tests

A.3.1 The containers selected as in A.2.2 or A.2.3 shall be inspected for packaging, marking and labelling requirements.

A.3.2 Each container inspected as in A.3.1 shall be tested for vacuum of the can (see 7.8).

A.3.3 Each container inspected as in A.3.2 shall be tested for the head space of the can (see 7.9).

A.3.4 Each container inspected as in A.3.3 shall be tested for the drained mass (see 7.6).

A.3.5 The contents of each container tested as in A.3.4 shall be inspected for taste, odour and appearance (see 7.1, 7.2 and 7.3).

A.3.6 A sufficient quantity of material shall be drawn from each container tested as in A.3.5 and mixed together and transferred to a clean dry sampling container to form a composite sample. The composite sample thus prepared shall be tested for texture, uniformity of size and shape, brix value and heavy metals (see 7.4, 7.5, 7.7 and 7.10).

APPENDIX B
DETERMINATION OF DRAINED MASS

B.1 APPARATUS

B.1.1 Test sieve, having a nominal aperture size of 1.70 mm, conforming to CS 124.

B.2 PROCEDURE

Weigh a clean and dry sieve (B.1.1) and empty the contents of the can into the sieve so as to distribute the product evenly. Without disturbing the product, incline the sieve to facilitate drainage. Allow to drain for two minutes. The drained mass is the mass of the product, excluding the mass of the sieve.

NOTE

A sieve of diameter 203 mm is used for A-2 1/2 size cans or smaller cans. In the case of larger cans, a sieve of diameter 305 mm is used.

APPENDIX C
DETERMINATION OF THE VACUUM OF CANS

C.1 APPARATUS

C.1.1 *Vacuum gauge*, indicating vacuum and pressure.

C.2 PROCEDURE

The vacuum is preferably measured using an electric recording type machine without opening the can. Where such a machine is not available, the piercing type may be used. In this case, pierce the hollow pointed edge of the gauge near the edge of the lid so that the rubber gasket makes a gas-tight seal and prevents the loss of vacuum. Do not press too hard as this will alter the head space. Do not use swollen cans. The readings should be taken when the can is at room temperature. Record the vacuum in millimeters of mercury. Necessary corrections for altitude may be made.

APPENDIX D
DETERMINATION OF HEAD SPACE

D.1 APPARATUS

D.1.1 *Rotary cutter*

D.1.2 *Ruler*, with millimetre divisions or headspace guage

D.2 PROCEDURE

Cut out the lid on the edge of the end plate with the rotary cutter, and lift the cut portion carefully so that the shape of the end plate is not altered. Measure the headspace using a headspace guage or a ruler. When a ruler is used, take measurements from the top of the double seam to the surface of the liquid. Take the average of four measurements taken at different points. Obtain the net headspace by deducting 5 mm from the gross headspace determined as above.

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.*

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SRI LANKA STANDARDS INSTITUTION

The Sri Lanka Standards Institution (SLSI) is the National Standards Organization of Sri Lanka established under the Sri Lanka Standards Institution Act No. 6 of 1984 which repealed and replaced the Bureau of Ceylon Standards Act No. 38 of 1964. The Institution functions under the Ministry of Science & Technology.

The principal objects of the Institution as set out in the Act are to prepare standards and promote their adoption, to provide facilities for examination and testing of products, to operate a Certification Marks Scheme, to certify the quality of products meant for local consumption or exports and to promote standardization and quality control by educational, consultancy and research activity.

The Institution is financed by Government grants, and by the income from the sale of its publications and other services offered for Industry and Business Sector. Financial and administrative control is vested in a Council appointed in accordance with the provisions of the Act.

The development and formulation of National Standards is carried out by Technical Experts and representatives of other interest groups, assisted by the permanent officers of the Institution. These Technical Committees are appointed under the purview of the Sectoral Committees which in turn are appointed by the Council. The Sectoral Committees give the final Technical approval for the Draft National Standards prior to the approval by the Council of the SLSI.

All members of the Technical and Sectoral Committees render their services in an honorary capacity. In this process the Institution endeavours to ensure adequate representation of all view points.

In the International field the Institution represents Sri Lanka in the International Organization for Standardization (ISO), and participates in such fields of standardization as are of special interest to Sri Lanka.

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