

**SRI LANKA STANDARD 1228 : 2002**  
UDC 634.675

**SPECIFICATION FOR  
FRESH TOMATOES**

**SRI LANKA STANDARDS INSTITUTION**

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**SLS 1228 : 2002**

**Gr. 5**

**SRI LANKA STANDARDS INSTITUTION  
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Sri Lanka**

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## **SRI LANKA STANDARD SPECIFICATION FOR FRESH TOMATOES**

### **FOREWORD**

This standard was approved by the Sectoral Committee on Agriculture and Food Products and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 2002-04-11.

During the formulation of this specification due consideration has been given to the relevant provisions made under the Sri Lanka Food Act No. 26 of 1980. Specific requirements given in this specification, wherever applicable, are in accordance with the relevant regulations. However general provisions made under the Sri Lanka Food Act have not been included in this specification and therefore, the attention of the user of this specification is drawn to the general provisions made in the regulations framed under the Food Act.

In this specification quality grades of the product are categorized based on physical and sensory quality parameters through visual inspection. However, inspection authorities may use cut tests and moisture determination methods to evaluate quality more objectively in case of a necessity.

Guidelines for the determination of a compliance of a lot with the requirements of this standard based on statistical sampling and inspections are given in Appendix A.

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

In the preparations of this standard, the assistance derived from the following publications are gratefully acknowledged.

MS 893 : 1984 - Malaysian Standard Specification for Fresh Tomatoes.

EC Marketing Standards - Tomatoes

CNS 2098 N 1031 - Chinese National Standard for Grades and Packaging of Tomatoes.

### **1 SCOPE**

This specification prescribes the requirements and gradings for fresh tomatoes, to be supplied fresh to the consumer.

### **2 REFERENCES**

ISO 874 Fresh fruits and vegetables - sampling

CS 102 Presentation of numerical values

SLS 143 Code of practice for general principles of food hygiene

SLS 428 Random sampling methods

SLS 467 Code of practice for labelling of prepackaged food

SLS 910 Limits for pesticide residues in food

### 3 DEFINITIONS

For the purpose of this specification the following definitions shall apply :

3.1 **tomatoes** : Varieties (cultivars) grown from *Lycopersicon lycopersicum* L. *Lycopersicum esculentum* Mill and their hybrids to be supplied fresh to the consumer. Tomatoes shall have round, ribbed, oblonged shape and the characteristic colour.

3.2 **similar varietal characteristics** : A condition where the tomatoes are alike as to size and shape, firmness of flesh, and colour and taste.

3.3 **mature** : A condition of growth when the contents of two or more seed cavities have developed a jelly-like consistency and the seeds are well developed.

3.4 **green** : A condition where the surface of the tomato is completely green in colour. The shade of green colour may vary from light to dark.

3.5 **mature green** : A condition where the tomato is fully grown and shows a brownish ring at the stem scar after removal of the calyx, the colour at the blossom end is yellow green cast, and the seeds are surrounded with jelly-like cells filling the locule.

3.6 **turning** : A condition of growth when about ( $\frac{1}{4}$ ) of the surface at the blossom end of the tomato shows pink/yellow/orange colour.

3.7 **pink/yellow/orange** : A condition of growth when about ( $\frac{3}{4}$ ) of the surface of the tomato shows pink/yellow/orange colour.

3.8 **ripe** : A condition where all the tomatoes are red/yellow/orange but the flesh is firm.

3.9 **over ripe** : A condition where the tomato is fully red and soft in texture.

3.10 **clean** : A condition where the tomato is free from dirt or other foreign matter.

3.11 **reasonably clean** : A condition where the tomato is practically free from dirt, but may exhibit unavoidable dirt incidental to improper harvesting and packing.

3.12 **damage** : A condition where any defect or injury readily seen upon examination or which affects the edible quality of tomato.

3.13 **serious damage** : A condition where the blemished surface of the tomatoes with an aggregate area exceeding 10% of the surface area of the tomatoes in the lot, or any deformities so serious as to cause a loss of over 15% of the lot in the ordinary process of preparation for use.

3.14 **slightly rough** : A condition where the tomato is not decidedly ridged or grooved.

3.15 **misshapen** : A condition where the tomato is kidney-shaped, lopsided, elongated, angular or otherwise deformed.

3.16 **smooth** : A condition where the tomato is free from roughness, shriveling, ridge, groove and tumor.

3.17 **fairly smooth** : A condition where the tomato is not noticeably ridged, indented or otherwise misshapen.

3.18 **soft** : A condition where the tomato yields readily to slight pressure.

3.19 **puffiness** : A condition where a swelling in one or two locules that seriously affects the appearance of the tomato.

3.20 **growth cracks** : A condition where ruptures or cracks radiating from or concentric to the stem scar, which are not healed and materially affect the appearance of the tomato.

3.21 **sunburn** : A condition where damages caused by sunburn such as white spots on the surface of the tomato.

#### 4 **Grades**

Tomatoes shall be of the following grades :

- 4.1 Size grades; and
- 4.2 Quality grades.

##### 4.1 **Size grades**

Tomatoes shall be of the following size grades :

- 4.1.1 Large;
- 4.1.2 Medium; and
- 4.1.3 Small.

##### 4.2 **Quality grades**

Tomatoes shall be of the following quality grades :

- 4.2.1 Grade A; and
- 4.2.2 Grade B.

#### 5 **REQUIREMENTS**

##### 5.1 **General requirements**

5.1.1 Tomatoes shall be intact, sound, clean, practically free of any visible foreign matter and it shall be mature and fresh in appearance. It shall be free of abnormal external moisture.

5.1.2 Tomatoes shall be free from pests or practically free from mechanical, pest or microbiological damage or any sign of rotting or spoilage due to any disease.

5.1.3 Tomatoes shall be of characteristic colour, smell and/or taste and it shall be free from foreign smell and/or taste.

5.1.4 Tomatoes shall not contain pesticide residues in excess of the limits as prescribed in SLS 910.

## 5.2 Hygienic requirements

Tomatoes shall be handled, stored, distributed under hygienic conditions in accordance with SLS 143.

## 5.3 Finished product

5.3.1 Tomatoes shall conform to size grades as prescribed in Table 1.

**TABLE 1 - Size grades**

<b>Grade (1)</b>	<b>Transverse diameter (mm) (2)</b>	<b>Tolerance (3)</b>
Large	70 min.	The amount of oversize and undersize based on diameter; should not be more than 5%, for all grades.
Medium	50 – 70	
Small	less than 50	

5.3.2 Tomatoes shall conform to quality grades as prescribed in Table 2.

**TABLE 2 - Quality grades (contd..)**

<b>Grade (1)</b>	<b>Requirement (2)</b>	<b>Tolerance (3)</b>
A	<ol style="list-style-type: none"> <li>1 Tomatoes shall be of similar varietal characteristics, have reached a stage of maturity which will ensure that the tomato remains firm during the period normally required for distribution.</li> <li>2 Tomatoes shall be clean and free from decay, diseases, sunburn, puffiness, growth cracks and damage caused by bruises, insects, cuts and breaks.</li> <li>3 Tomatoes shall be of turning, pink, yellow, orange or red colouration.</li> <li>4 Tomatoes shall be classified to size grades according to 5.3.1</li> </ol>	Tomatoes in each sample shall be not more than 10% by mass for grade B.



Table 2 (concluded)

<b>Grade (1)</b>	<b>Requirement (2)</b>	<b>Tolerance (3)</b>
B	1 Tomatoes shall be of similar varietal characteristics, have reached a stage of maturity which will ensure that the tomatoes remain firm during the period normally required for distribution.  2 Tomatoes shall be reasonably clean and reasonably free from any signs of decay, diseases, sunburn, puffiness, growth cracks and free of damages caused by bruises, insects, cuts and breaks.  3 Tomatoes shall be mature green, turning, pink, yellow, orange or red colouration.  4 Tomatoes shall be classified to size grades according to 5.3.1.	Tomatoes in each sample shall be not more than 10% by mass for off grade.

## 6 PACKAGING AND MARKING

### 6.1 PACKAGING

6.1.1 Tomatoes shall be packed in such a way as to protect the produce properly. The materials used inside the package shall be new, clean and of a quality such as to avoid causing any external or internal damage to the produce. The use of materials, particularly of paper or stamps bearing trade specifications is allowed, provided the printing or labelling has been done with non-toxic ink or glue.

6.1.2 In the case where paper or plastic bags are used, they shall be perforated to allow adequate ventilation.

### 6.2 Marking

6.2.1 Each package shall bear the following particulars, in letters grouped on the same side, legibly and indelibly marked, and visible from the outside (either printed on the package itself or on a label secured to the fastening).

- a) Name of commodity;
- b) Grade (quality/size);
- c) Name and address of the purchaser or trader (including the country of origin);
- d) Batch or code number;
- e) Net mass, in grams or in kilograms;
- f) Date of packaging; and
- g) Instructions for storage.

6.2.2 General guidelines for marking and labelling as given in SLS 467 shall be followed.

## 7 METHODS OF TEST

7.1 Tomatoes shall be observed visually for the requirements prescribed in **5.3.1** and **5.3.2**.

### ANNEX A COMPLIANCE OF A LOT

The sampling scheme given in this appendix should be applied where compliance of a lot to the requirements of this standard is to be assessed based on statistical sampling and inspection.

#### A.1 LOT

A stated quantity of goods of same size grade and same quality grade in bulk form or packages of same weight and presented for inspection.

#### A.2 SCALE OF SAMPLING

**A.2.1** In case of goods in packaged form the number of packages to be selected from the lot shall be in accordance with **4.2.1** of **ISO 874**.

**A.2.2** In case of goods in bulk form, samples shall be drawn from the lot in accordance with **4.2.2** of **ISO 874**.

**A.2.3** Preparation of bulk sample or reduced sample.

**A.2.3.1** In case of goods in packaged form equal quantity of goods shall be taken from top, middle and bottom layers of each package selected as in **A.2.1** and mix them together to form a bulk sample. Then the bulk sample shall be reduced to the laboratory sample of the size given in Table 3 of **ISO 874**.

**A.2.3.2** In case of goods in bulk form the reduced sample shall be prepared in accordance with **4.3** of **ISO 874**.

#### A.3 NUMBER OF TESTS

**A.3.1** Each package selected as in **A.2.1** shall be inspected for packaging and marking requirements.

**A.3.2** The sample prepared as in **A.2.3.1** or **A.2.3.2** shall be visually examined for requirements given in **5.3.2**.

**A.3.3** The sample examined as in **A.3.2** shall be examined for each requirements given in **5.3.1**.

#### **A.4 CRITERIA FOR CONFORMITY**

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

**A.4.1** Each package inspected as in **A.3.1** satisfies the relevant requirements.

**A.4.2** The test results on each quality parameters when examine as in **A.3.2** shall satisfy the relevant requirements given **5.3.2**.

**A.4.3** The test results on size when examine as in **A.3.3** shall satisfy the relevant requirements specified in **5.3.1**.

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## **SRI LANKA STANDARDS INSTITUTION**

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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.

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*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.*

