



**United States
Department of
Agriculture**

**Agricultural
Marketing
Service**

**Fruit and
Vegetable
Division**

**Fresh
Products
Branch**

United States Standards for Grades of Fresh Tomatoes

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United States Standards for Grades of Fresh Tomatoes ¹

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Grades

§51.1855 U.S. No. 1.

"U.S. No. 1" consists of tomatoes which meet the following requirements:

(a) Basic requirements:

(1) Similar varietal characteristics;

¹Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug and Cosmetic Act, or with applicable State laws and regulations.

- (2) Mature;
- (3) Not overripe or soft;
- (4) Clean;
- (5) Well developed;
- (6) Fairly well formed; and,
- (7) Fairly smooth.
- (b) Free from:
 - (1) Decay;
 - (2) Freezing injury; and
 - (3) Sunscald.
- (c) Not damaged by any other cause.
- (d) For tolerances see §51.1861.

§51.1856 U.S. Combination.

"U.S. Combination" consists of a combination of U.S. No. 1 and U.S. No. 2 tomatoes: **Provided,** That at least 60 percent, by count, meet the requirements of U.S. No. 1 grade.

- (a) For tolerances see §51.1861.

§51.1857 U.S. No. 2.

"U.S. No. 2" consists of tomatoes which meet the following requirements:

- (a) Basic requirements:
 - (1) Similar varietal characteristics;
 - (2) Mature;
 - (3) Not overripe or soft;
 - (4) Clean;
 - (5) Well developed;
 - (6) Reasonably well formed; and,
 - (7) Not more than slightly rough.
- (b) Free from:
 - (1) Decay;
 - (2) Freezing injury; and,
 - (3) Sunscald.
- (c) Not seriously damaged by any other cause.
- (d) For tolerances see §51.1861.

§51.1858 U.S. No. 3.

"U.S. No. 3" consists of tomatoes which meet the following requirements:

- (a) Basic requirements:
 - (1) Similar varietal characteristics;
 - (2) Mature;
 - (3) Not overripe or soft;
 - (4) Clean;
 - (5) Well developed; and,
 - (6) May be misshapen.
- (b) Free from:
 - (1) Decay; and,

- (2) Freezing injury.
- (c) Not seriously damaged by:
 - (1) Sunscald.
 - (d) Not very seriously damaged by any other cause.
 - (e) For tolerances see §51.1861.

Size

§51.1859 Size.

- (a) The size of tomatoes packed in any standard type shipping container shall be specified and marked according to one of the size designations set forth in Table I. Individual containers shall not be marked with more than one size designation. Consumer packages and their master container are exempt; however, if they are marked, the same requirements would apply.
 - (1) When containers are marked in accordance with Table I, the markings on at least 85 percent of the containers in a lot must be legible.
 - (2) In determining compliance with the size designations, the measurement for minimum diameter shall be the largest diameter of the tomato measured at right angles to a line from the stem end to the blossom end. The measurement for maximum diameter shall be the smallest dimension of the tomato determined by passing the tomato through a round opening in any position.
- (b) In lieu of marking containers in accordance with (a) above or specifying size in accordance with the dimensions defined in Table I, for Cerasiforme type tomatoes commonly referred to as cherry tomatoes and Pyriforme type tomatoes commonly referred to as pear shaped tomatoes, and other similar types, size may be specified in terms of minimum diameter or minimum and maximum diameter expressed in whole inches, and not less than thirty-second inch fractions thereof, or millimeters in accordance with the facts.
 - (1) Tomatoes of these types are exempt from marking requirements. However, when marked to a minimum or minimum and maximum diameter, the markings on at least 85 percent of the containers in a lot must be legible.
 - (c) For tolerances see §51.1861.

Table I

Size Designations	Inches	
	Minimum Diameter ¹	Maximum Diameter ²
Small	2-4/32	2-9/32
Medium	2-8/32	2-17/32
Large	2-16/32	2-25/32
Extra Large	2-24/32	

¹Will not pass through a round opening of the designated diameter when tomato is placed with the greatest transverse diameter across the opening.

²Will pass through a round opening of the designated diameter in any position.

Color Classification

§51.1860 Color classification.

(a) The following terms may be used, when specified in connection with the grade statement, in describing the color as an indication of the stage of ripeness of any lot of mature tomatoes of a red fleshed variety:

- (1) **Green.** "Green" means that the surface of the tomato is completely green in color. The shade of green color may vary from light to dark;
 - (2) **Breakers.** "Breakers" means that there is a definite break in color from green to tannish-yellow, pink or red on not more than 10 percent of the surface;
 - (3) **Turning.** "Turning" means that more than 10 percent but not more than 30 percent of the surface, in the aggregate, shows a definite change in color from green to tannish-yellow, pink, red, or a combination thereof;
 - (4) **Pink.** "Pink" means that more than 30 percent but not more than 60 percent of the surface, in the aggregate, shows pink or red color;
 - (5) **Light red.** "Light red" means that more than 60 percent of the surface, in the aggregate, shows pinkish-red or red: **Provided,** That not more than 90 percent of the surface is red color; and,
 - (6) **Red.** "Red" means that more than 90 percent of the surface, in the aggregate, shows red color.
- (b) Any lot of tomatoes which does not meet the requirements of any of the above color designations may be designated as "Mixed Color".

(c) For tolerances see §51.1861.

(d) Tomato color standards U.S.D.A. Visual Aid TM- L-1 consists of a chart containing twelve color photographs illustrating the color classification requirements, as set forth in this section. This visual aid may be examined in the Fruit and Vegetable Division, AMS, U.S. Department of Agriculture, South Building, Washington, D.C. 20250; in any field office of the Fresh Fruit and Vegetable Inspection Service; or upon request of any authorized inspector of such Service. Duplicates of this visual aid may be purchased from The John Henry Co., Post Office Box 1410, Lansing, Michigan 48904.

Tolerances

§51.1861 Tolerances.

In order to allow for variations incident to proper grading and handling in each of the foregoing grades, the following tolerances, by count, are provided as specified:

- (a) **U.S. No. 1 - (1) For defects at shipping point.**² Ten percent for tomatoes in any lot which fail to meet the requirements for this grade: **Provided,** That not more than one-half of this tolerance, or 5 percent, shall be allowed for defects causing very serious damage, including therein not more than 1 percent for tomatoes which are soft or affected by decay; and,
- (2) **For defects en route or at destination.** Fifteen percent for tomatoes in any lot which fail to meet the requirements for this grade: **Provided,** That included in this amount not more than the following percentages shall be allowed for defects listed:

²Shipping point, as used in these standards, means the point of origin of the shipment in producing area or at port of loading for ship stores or overseas shipment, or in the case of shipments from outside the continental United States, the port of entry into the United States.

- (i) Five percent for tomatoes which are soft or affected by decay;
 - (ii) Ten percent for tomatoes which are damaged by shoulder bruises or by discolored or sunken scars on any parts of the tomatoes; and,
 - (iii) Ten percent for tomatoes which are otherwise defective: **And provided further**, That not more than 5 percent shall be allowed for tomatoes which are very seriously damaged by any cause, exclusive of soft or decayed tomatoes.
- (b) **U.S. Combination - (1) For defects at shipping point.**² Ten percent for tomatoes in any lot which fail to meet the requirements of the U.S. No. 2 grade: **Provided**, That not more than one-half of this tolerance, or 5 percent, shall be allowed for defects causing very serious damage, including 1 percent for tomatoes which are soft or affected by decay; and,
- (2) **For defects en route or at destination.** Fifteen percent for tomatoes in any lot which fail to meet the requirements of the U.S. No. 2 grade: **Provided**, That included in this amount not more than the following percentages shall be allowed for defects listed:
- (i) Five percent for tomatoes which are soft or affected by decay;
 - (ii) Ten percent for tomatoes which are seriously damaged by shoulder bruises or by discolored or sunken scars on any parts of the tomatoes; and,
 - (iii) Ten percent for tomatoes which are otherwise defective: **And provided further**, That not more than 5 percent shall be allowed for tomatoes which are very seriously damaged by any cause, exclusive of soft or decayed tomatoes.
- (c) **U.S. No. 2 - (1) For defects at shipping point.**² Ten percent for tomatoes in any lot which fail to meet the requirements of this grade: **Provided**, That not more than one-half of this tolerance, or 5 percent, shall be allowed for defects causing very serious damage, including therein not more than 1 percent for tomatoes which are soft or affected by decay; and,
- (2) **For defects en route or at destination.** Fifteen percent for tomatoes in any lot which fail to meet the requirements for this grade: **Provided**, That included in this amount not more than the following percentages shall be allowed for defects listed:
- (i) Five percent for tomatoes which are soft or affected by decay;
 - (ii) Ten percent for tomatoes which are seriously damaged by shoulder bruises or by discolored or sunken scars on any parts of the tomatoes; and,
 - (iii) Ten percent for tomatoes which are otherwise defective: **And provided further**, That not more than 5 percent shall be allowed for tomatoes which are very seriously damaged by any cause, exclusive of soft or decayed tomatoes.
- (d) **U.S. No. 3 - (1) For defects at shipping point.**² Ten percent for tomatoes in any lot which fail to meet the requirements of this grade: **Provided**, That not more than one-half of this tolerance, or 5 percent, shall be allowed for tomatoes which are very seriously damaged by insects and not more than one-tenth of the tolerance, or 1 percent, for tomatoes which are soft or affected by decay; and,
- (2) **For defects en route or at destination.** Fifteen percent for tomatoes in any lot which fail to meet the requirements for this grade: **Provided**, That included in this amount not more than the

²Shipping point, as used in these standards, means the point of origin of the shipment in producing area or at port of loading for ship stores or overseas shipment, or in the case of shipments from outside the continental United States, the port of entry into the United States.

following percentages shall be allowed for defects listed:

- (i) Five percent for tomatoes which are soft or affected by decay;
- (ii) Ten percent for tomatoes which are very seriously damaged by shoulder bruises or by discolored or sunken scars on any parts of the tomatoes; and,
- (iii) Ten percent for tomatoes which are otherwise defective: **And provided further**, That not more than 5 percent shall be allowed for tomatoes which are very seriously damaged by insects.
- (e) **For off-size**. Ten percent for tomatoes in any lot which are smaller than the specified minimum diameter, or larger than the specified maximum diameter.
- (f) **For off color**. Ten percent for tomatoes in any lot which fail to meet the color specified, including therein not more than 5 percent for tomatoes which are green in color, when any term other than "Green" is specified.

Application of Tolerances

§51.1862 Application of tolerances.

The contents of individual packages in the lot, based on sample inspection, are subject to the following limitations:

- (a) For packages which contain more than 5 pounds (2.27 kg), and a tolerance of 10 percent or more is provided, individual packages shall have not more than 1-1/2 times the tolerance specified, and for a tolerance of less than 10 percent individual packages shall have not more than double the tolerance specified, except that at least one defective and one off-size specimen may be allowed in any package: **Provided**, That the averages for the entire lot are within the tolerances specified for the grade; and,
- (b) For packages which contain 5 pounds (2.27 kg) or less individual packages shall have not more than 4 times the tolerance specified, except that at least one tomato which is soft, or affected by decay, and one off-size specimen may be permitted in any package: **Provided**, That the averages for the entire lot are within the tolerances specified for the grade.

Standard Weight

§51.1863 Standard weight.

- (a) When packages are marked to a net weight of 15 pounds (6.80 kg) or more, the net weight of the contents shall not be less than the designated net weight and shall not exceed the designated weight by more than 2 pounds (0.91 kg).
- (b) In order to allow for variations incident to proper sizing, not more than 15 percent, by count, of the packages in any lot may fail to meet the requirements for standard weight.

Definitions

§51.1864 Similar varietal characteristics.

"Similar varietal characteristics" means that the tomatoes are alike as to firmness of flesh and shade of color (for example, soft-fleshed, early maturing varieties are not mixed with firm-fleshed, midseason or late varieties, or bright red varieties mixed with varieties having a purplish tinge).

§51.1865 Mature.

"Mature" means that the tomato has reached the stage of development which will insure a proper completion of the ripening process, and that the contents of two or more seed cavities have developed a jelly-like consistency and the seeds are well developed.

§51.1866 Soft.

"Soft" means that the tomato yields readily to slight pressure.

§51.1867 Clean.

"Clean" means that the tomato is practically free from dirt or other foreign material.

§51.1868 Well developed.

"Well developed" means that the tomato shows normal growth. Tomatoes which are ridged and peaked at the stem end, contain dry tissue, and usually contain open spaces below the level of the stem scar, are not considered well developed.

§51.1869 Fairly well formed.

"Fairly well formed" means that the tomato is not more than moderately kidney-shaped, lop-sided, elongated, angular, or otherwise moderately deformed.

§51.1870 Fairly smooth.

"Fairly smooth" means that the tomato is not conspicuously ridged or rough.

§51.1871 Damage.

"Damage" means any specific defect described in §51.1877, Table II; or an equally objectionable variation of any one of these defects, any other defect, or any combination of defects, which materially detracts from the appearance, or the edible or marketing quality of the tomato.

§51.1872 Reasonably well formed.

"Reasonably well formed" means that the tomato is not decidedly kidney-shaped, lop-sided, elongated, angular, or otherwise decidedly deformed.

§51.1873 Slightly rough.

"Slightly rough" means that the tomato is not decidedly ridged or grooved.

§51.1874 Serious damage.

"Serious damage" means any specific defect described in §51.1877, Table II; or an equally objectionable variation of any one of these defects, any other defect, or any combination of defects, which seriously detracts from the appearance, or the edible or marketing quality of the tomato.

§51.1875 Misshapen.

"Misshapen" means that the tomato is decidedly kidney-shaped, lop-sided, elongated, angular or otherwise decidedly deformed: **Provided**, That the shape is not affected to an extent that the appearance or the edible quality of the tomato is very seriously affected.

§51.1876 Very serious damage.

"Very serious damage" means any specific defect described in §51.1877, Table II; or an equally objectionable variation of any one of these defects, any other defect, or any combination of defects, which very seriously detracts from the appearance, or the edible or marketing quality of the tomato.

§51.1877 Classification of defects.

Table II

References to Area, Aggregate Area, Length or Aggregate Length are based on a tomato having a diameter of 2-1/2 inches (64 mm)¹

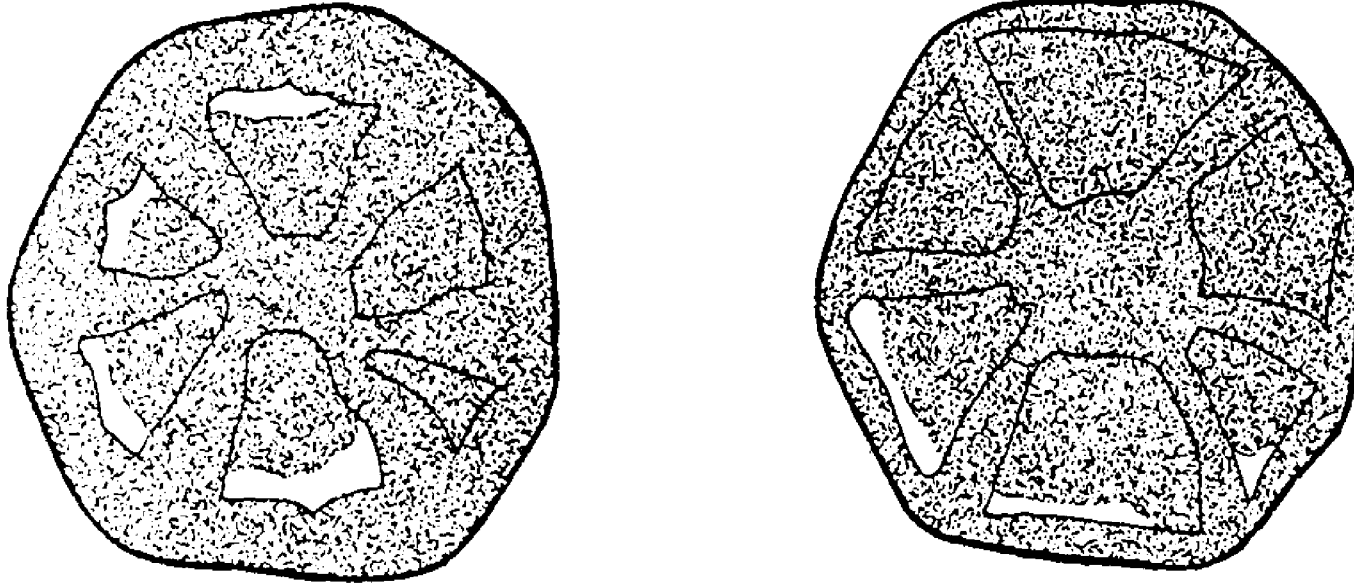
Factor	Damage	Serious Damage	Very serious damage
Cuts and broken skins	Not shallow or not well healed, or shallow, well healed cut more than 1/2 inch (13 mm) in length, or other shallow, well healed skin breaks aggregating more than a circle 3/8 inch (10 mm) in diameter.	Not shallow or not well healed, or shallow, well healed cut more than 1/2 inch (13 mm) in length, or other shallow, well healed skin breaks aggregating more than a circle 1/2 inch (13 mm) in diameter.	Fresh or healed and extending through the tomato wall.
Puffiness	Open space in 1 or more locules materially detracts from appearance of tomato cut through center at right angles to a line from stem to blossom end.	Open space in 1 or more locules seriously detracts from appearance of tomato cut through center at right angles to a line from stem to blossom end.	Open space in 2 or more locules very seriously detracts from appearance of tomato cut through center at right angles to a line from stem to blossom end.
Catfaces	Scars are rough or deep, channels are very deep or wide, channels extend into a locule, or a fairly smooth catface aggregating more than a circle 1/2 inch (13 mm) in diameter.	Scars are rough or deep, channels are very deep or wide, channels extend into a locule, or a fairly smooth catface aggregating more than a circle 3/4 inch (19 mm) in diameter.	Channels extend into the locule, wall has been weakened to the extent that slight pressure will cause a tomato to leak, or a fairly smooth catface aggregating more than a circle 1 inch (25 mm) in diameter.
Scars (other than catfaces).	No depth and aggregating more than a circle 3/8 (10 mm) in diameter.	No depth and aggregating more than a circle 5/8 (16 mm) in diameter.	No depth and aggregating more than a circle 1 inch (25 mm) in diameter.

¹Conversion to metric equivalent, made to nearest whole millimeter.

Growth cracks (radiating from or concentric to stem scar).	Not well healed, more than 1/8 inch (3 mm) in depth, individual radial cracks more than 1/2 inch (13 mm) in length, aggregate length of all radial cracks more than 1 inch (25 mm) measured from edge of stem scar. Any lot of tomatoes which are at least turning may have cracks which are not well healed provided they are not leaking.	Not well healed, more than 1/8 inch (3 mm) in depth, individual radial cracks more than 3/4 inch (19 mm) in length, aggregate length of all radial cracks more than 1-3/4 inch (44 mm) measured from edge of stem scar. Any lot of tomatoes which are at least turning may have cracks which are not well healed provided they are not leaking.	Not well healed, more than 1/4 inch (6 mm) in depth, individual radial cracks more than 1 inch (25 mm) in length, aggregate length of all radial cracks more than 2-7/8 inches (73 mm) measured from edge of stem scar. Any lot of tomatoes which are at least turning may have cracks which are not well healed provided they are not leaking, not more than 1/8 inch (3 mm) in depth, individual radial cracks are not more than 3/4 inch (19 mm) in length.
Hail	Deep, rough, not well healed and corked over, or fairly smooth, shallow hail marks aggregating more than a circle 3/8 inch (10 mm) in diameter.	Deep, rough, not well healed and corked over, or fairly smooth, shallow hail marks aggregating more than a circle 5/8 inch (16 mm) in diameter.	Fresh, very deep or fairly smooth, shallow hail marks aggregating more than a circle 1 inch (25 mm) in diameter.
Insect Injury	Materially detracts from the appearance or any insect is present in the fruit.	Seriously detracts from the appearance or any insect is present in the fruit.	Very seriously detracts from the appearance or any insect is present in the fruit.

¹Conversion to metric equivalent, made to nearest whole millimeter.

PUFFINESS

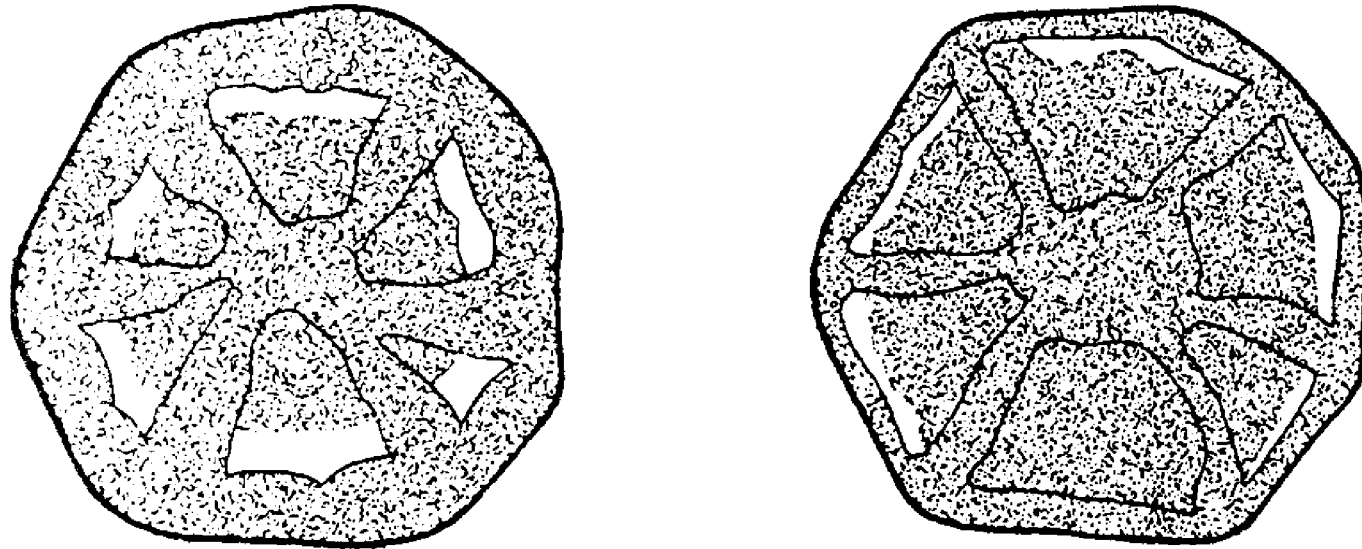


LOWER LIMIT U.S. NO. 1

The proportion of open space permitted is dependent upon the thickness of walls. Tomatoes with thicker walls than those in the above illustrations may have proportionately greater amounts of open space. Tomatoes with thinner walls than illustrated shall have proportionately lesser amounts of open space.

Illustration TOMFR 1

PUFFINESS

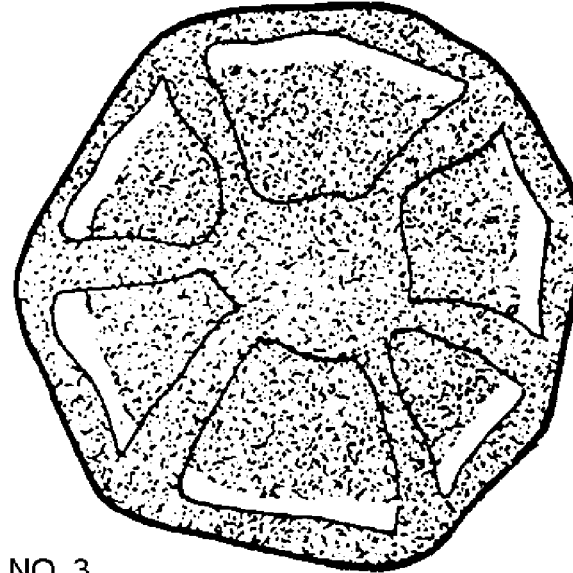
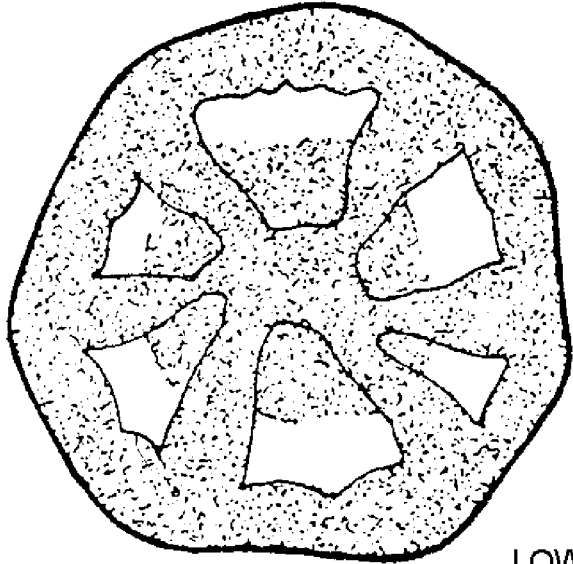


LOWER LIMIT U.S. NO. 2

The proportion of open space permitted is dependent upon the thickness of walls. Tomatoes with thicker walls than those in the above illustrations may have proportionately greater amounts of open space. Tomatoes with thinner walls than illustrated shall have proportionately lesser amounts of open space.

Illustration TOMFR 2

PUFFINESS

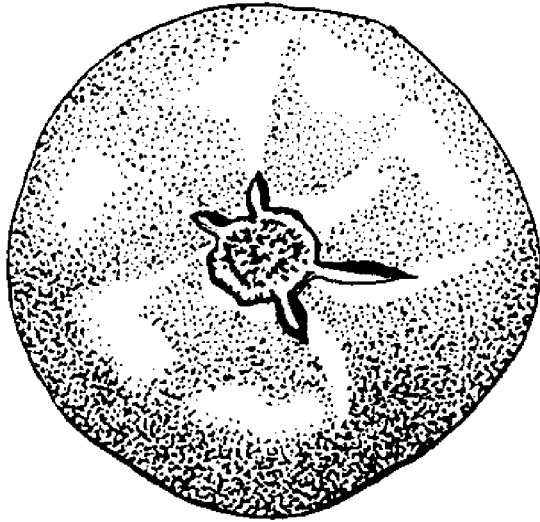


LOWER LIMIT U.S. NO. 3

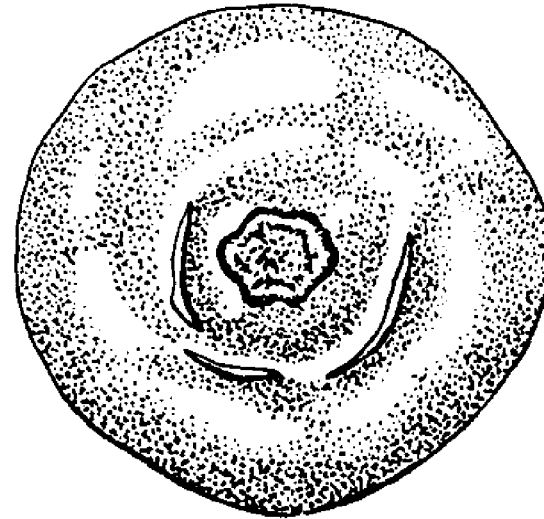
The proportion of open space permitted is dependent upon the thickness of walls. Tomatoes with thicker walls than those in the above illustrations may have proportionately greater amounts of open space. Tomatoes with thinner walls than illustrated shall have proportionately lesser amounts of open space.

Illustration TOMFR 3

GROWTH CRACKS



Maximum aggregate length of radial growth cracks permitted on 2 1/2 inch tomato in U.S. No. 1 grade.



Concentric growth cracks which affect appearance to same extent as maximum aggregate length of radial growth cracks permitted in U.S. No. 1 grade.

The above limitations apply to all stages of maturity.

Illustration TOMFR 4