



United States Department of Agriculture

Agricultural Marketing Service, Specialty Crops Program, Specialty Crops Inspection Division

PATCH # 063

DOCUMENT: Shipping Point and Market Inspection Instructions for Oranges and Grapefruit Grown in Texas and States Other Than Florida, California, and Arizona, WORKING DRAFT – November 2020.

REMARKS: The following revises the **Wormy Fruit (Q)/(C)** section on page 39 and will be added to the Grapefruit portion of the book during the next revision.

Wormy Fruit (Q or C)

Wormy fruit is caused by Mexican fruit fly larvae and can be transported widely in infested fruit. The adult female fruit fly typically deposits eggs in citrus when the fruit begins to show color. Eggs are laid in groups of about 10 and hatch in 6 to 12 days. The newly hatched larvae eat and burrow into the pulp of the fruit, taking on the color of their food, so when small they may be easily overlooked. As they grow, the larva becomes white with the typical fruit fly larval shape: a long, rounded body, with the mouth end somewhat curved up. Many larvae may be found in a single fruit. When fully grown, the larvae emerge through visible exit holes.

Frequently fruit that has been infested with Mexican fruit fly larva is also soft or mushy, ensure that you cut any suspicious fruit. Use the guidance provided in the Sampling for Internal Defects section.

There is no tolerance for wormy fruit, one fruit will fail the whole lot. In transit or at destination if live worm(s) are present or a combination of live and dead, report as a condition factor. Report as a quality factor if the worm(s) are dead.

Since there is no tolerance for wormy fruit, report any percentage on the certificate, this includes less than whole percentages (-1/2, 1/2, and -1). A range will always be reported when wormy fruit are found.

If the lot fails only account of wormy fruit, the grade statement should read as follows, according to the facts: “Fails to grade U.S. No. 1 Account *Quality* or *Condition* (wormy fruit).”

Scoring Guide

Always very serious damage: Free from; score any amount in all grades.

This PATCH represents official guidance. This PATCH is scheduled to be incorporated into the document listed above. After incorporation into the document listed above this PATCH will become obsolete. USDA is an equal opportunity provider, employer, and lender.



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Oranges and Grapefruit Grown in Texas and States Other Than Florida, California, and Arizona

Shipping Point and Market Inspection
Instructions

WORKING DRAFT – November 2020

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These instructions contain information and guidelines to help personnel of the U.S. Department of Agriculture's (USDA) Specialty Crops Inspection (SCI) Division uniformly apply and interpret U.S. grade standards, other similar specifications, and special procedures.

These guidelines do not supersede the Federal Food, Drug, and Cosmetic Act or any other applicable Federal or State laws or regulations. Compliance with these statutes is mandatory. This publication supersedes any previously issued inspection instructions.

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Inspection instructions are issued by USDA after careful consideration of all data and views submitted. The Department welcomes suggestions for improving the inspection instructions in future revisions.

Comments may be submitted to:

Director, Specialty Crops Inspection Division
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Washington, DC 20250

These instructions replace the Shipping Point Inspection Instructions for Citrus Grown in Texas and States Other Than Florida, California and Arizona dated October 1978 and the Market Inspection Instructions Citrus Grown in Texas and States Other Than Florida, California and Arizona dated October 1969, and include, but not limited to, all previous correspondence, memos, inspection instructions, or procedures.

SHIPPING POINT AND MARKET INSPECTION INSTRUCTIONS FOR ORANGES AND GRAPEFRUIT GROWN IN TEXAS AND STATES OTHER THAN FLORIDA, CALIFORNIA, AND ARIZONA

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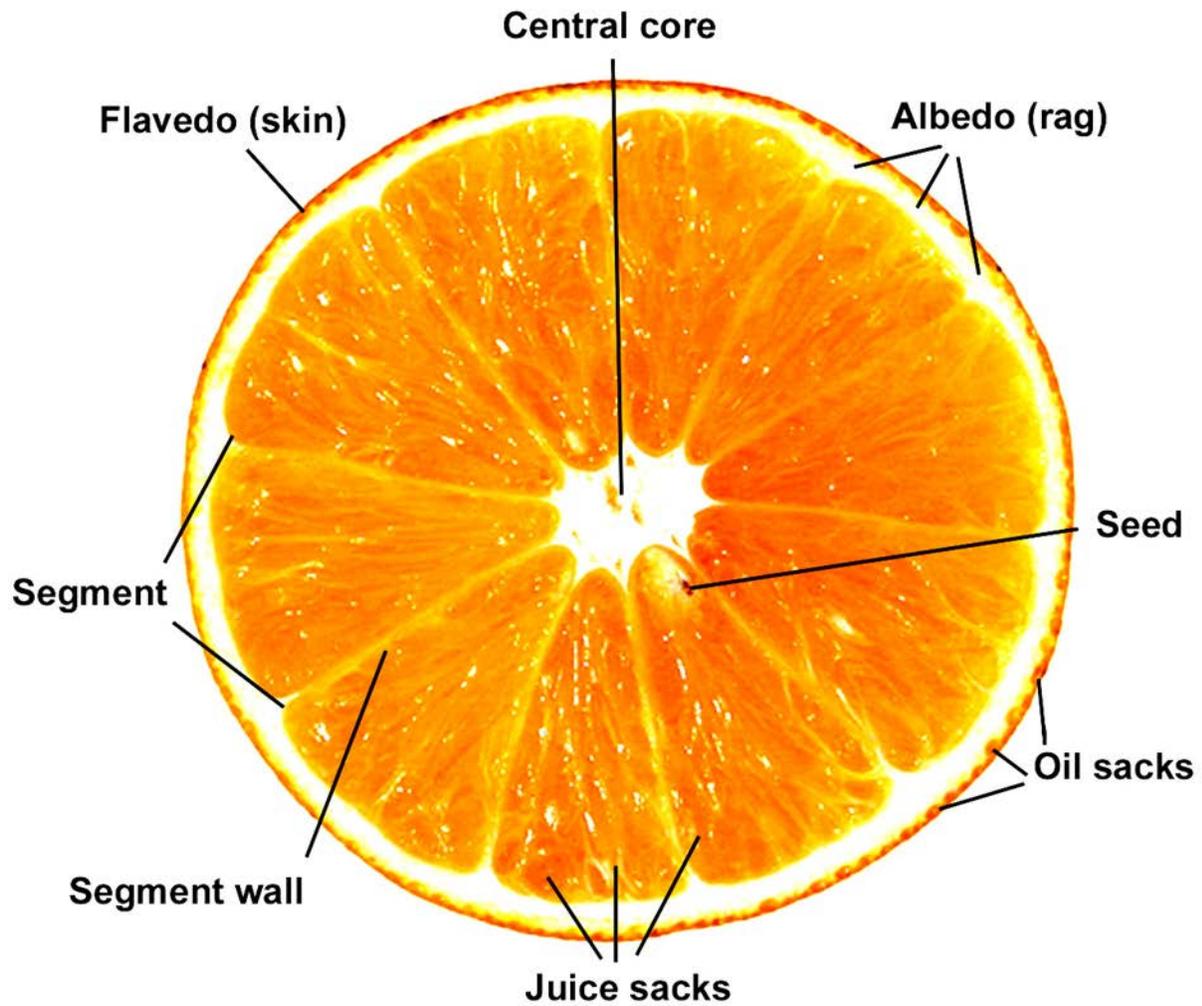
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ORANGE IDENTIFICATION CHART



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PART I – ORANGES

GENERAL

The U.S. Standards for Grades of Oranges (Texas and States other than Florida, California, and Arizona) apply to the common or sweet oranges, and varieties and hybrids of varieties belonging to the Mandarin group, except Tangerines. Mandarin varieties and hybrids, other than Tangerines, include but are not restricted to Satsuma, King, Wilking, Ponkan, Minneola, Kara, Kinnow, Page, Lee, Osceolo, and K-Early.

Grapefruit are covered by a separate U.S. grade standard and in [Part II – Grapefruit](#) of these instructions.

Any portion of these instructions beginning with §51 and followed with **bold** print is material copied directly from the [U.S. Standards for Grades of Oranges \(Texas and States other than Florida, California, and Arizona\)](#).

IMPORT CERTIFICATION AT PORTS OF ENTRY

For all imported oranges, except navels, at port of entry apply the U.S. Standards for Grades of Oranges (Texas and States other than Florida, California and Arizona) and the [Texas maturity requirements](#). For navel oranges apply the U.S. Standards for Grades of Oranges (California and Arizona) and the [Texas maturity requirements](#). Do not perform juice content measurements as a measure of maturity. If you are unsure of any import regulation, contact your immediate supervisor or Inspection Operations for guidance.

For inspections requested on imported fruit other than at port of entry, or when import requirements are not in effect, apply the grade standards the fruit most closely resembles (texture, thickness of skin, discoloration, and scarring).

MARKETING ORDER 906

[Marketing Order §906.137](#) for Oranges and Grapefruit Grown in Lower Rio Grande Valley in Texas contains specific grades that may be marked on the containers. If containers are marked as such, they must meet the additional following requirements, or they could be considered misbranded and PACA should be notified.

MO §906.137 (a)...the identifying marks “Texasweet”, “Sweeter By Nature”, “Texas Fancy”, and “Texas Choice” shall be available to handlers only under the following terms and conditions:

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- (1) *The identifying marks “Texasweet” and “Sweeter by Nature” may severally or jointly be affixed only to containers of grapefruit or to individual grapefruit comprising a lot which grades at least U.S. No. 1.*
- (2) *The identifying mark “Texas Fancy” may be affixed only to containers of grapefruit or to individual grapefruit comprising a lot which grades at least U.S. No. 1 with no more than 40 percent of the surface of the grapefruit, in the aggregate, affected by discoloration.*
- (3) *The identifying mark “Texas Choice” may be affixed only to containers of grapefruit or to individual grapefruit comprising a lot which grades at least U.S. No. 2, with no more than 60 percent of the surface of the grapefruit, in the aggregate, affected by discoloration.*
- (4) *The identifying marks “Texasweet” and “Sweeter by Nature” may severally or jointly be affixed only to containers of oranges or to individual oranges comprising a lot which grades at least U.S. Combination, with not less than 60 percent, by count, of the oranges in each container thereof grading at least U.S. No. 1 and the remainder U.S. No. 2.*

For more complete instructions see [Marketing Order 906](#).

REPRESENTATIVE SAMPLING

Obtaining representative samples is essential. Accurate certification is possible only if the samples examined are truly representative of the entire lot or accessible portion. Sample all portions of a lot or load even if it is difficult to reach all layers or parts. If you cannot access the entire lot for sampling, restrict the inspection and certificate to the accessible portion.

SIZE OF SAMPLE

SHIPPING POINT

In-line Certification

Each sample will consist of 25 fruit. If containers have less than 25 fruit, examine a composite sample of 25 fruit. If a sample tolerance is exceeded, double the sample size. The lot average must never exceed the lot tolerance.

The first sample examined must meet all lot tolerances. If three consecutive samples in a lot exceed a lot tolerance, a corrective action must be taken on the packed containers that are represented by the third sample.

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Stationary Lots

Sampling for all lots will consist of 25 fruit. If containers have less than 25 fruit, examine a composite sample of 25 fruit. A minimum of 3 samples must be examined to certify a lot.

If a lot tolerance is exceeded, double the sample size for containers containing 50 fruit or more, except for composite samples. If a sample tolerance is exceeded, examine the entire contents of the container, except for bulk lots or bulk bins. These lots will be limited to a 100-count sample.

MARKET

For packages containing 25 fruit or more, examine a minimum of 25 fruit. When any sample tolerance is exceeded, examine the entire contents of at least one package which exceeded the sample tolerance. If impractical to run the entire contents, i.e., extremely large number of fruit and bulk lots, examine a minimum of 100 fruit.

For packages containing less than 25 fruit, open a sufficient number of adjoining packages to obtain a minimum of 25 fruit. Use the entire contents for the sample when opening an adjoining package. For example, when fruit are packed in 5 lb. consumer bags (10 fruit per bag), open 3 bags (30 fruit sample). If a sample tolerance is exceeded using this method, do not double the sample size. The lot is out of grade because the sample tolerance was exceeded.

SAMPLING BULK LOADS

Since the carrier is the container, do not treat the variation found in bulk loads like similar variations found in packages when applying the rule of double or one and one-half times the tolerance. The load, as a general rule, is sold as a unit and is inspected as such. If it is divided by bulkheads or partitions, you may inspect it as separate units if the applicant identifies the units as being separate or if there is a material difference in the quality and condition of the units. Do not attempt to report a range or an average for bulk loads. See the [General Market Manual](#).

When determining the minimum number of samples drawn from a bulk shipment, divide the load's approximate net weight by the appropriate "packed net weight." This calculation provides a 4/5-bushel equivalent. Example: Net weight of a load is approximate 57,000 pounds; $57,000 \div 45$ (packed net weight) = 1,267 cartons. Use the calculated carton equivalent as a guide when determining the number of samples to be examined.

Examine a minimum of 25 contiguous fruit per sample.

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NUMBER OF SAMPLES

SHIPPING POINT

In-line Certification

A minimum of one sample for every 200 containers packed or 1/2 of the 1% of the total containers packed.

Stationary Lots

A minimum of 1% of the packages within the load or lot is recommended with a minimum of three sample examined on any lot.

MARKET

As a general guide the goal is to sample 1% of the containers in the lot. This number may be larger or smaller depending on the amount of defects in the lot. Very low or very high percentages of defects may change the sample number to less or more than 1%, respectively. Examine enough samples to ensure that the certificate issued will accurately describe the quality and condition of the lot. All unrestricted lots will have a minimum of three samples examined. Lots with less than three containers will have all containers examined to be considered unrestricted. For detailed guidance on the number of samples, refer to the [General Market Manual](#).

SAMPLING FOR INTERNAL DEFECTS

The following plans are designed to provide efficient and accurate methods of sampling for internal defects in citrus. These defects include dryness-mushy condition (freezing injury), granulation (tree dryness), sprouted seeds, bruising or any other defect that cannot be detected or determined without cutting the fruit.

There are two specific cutting plans. **Plan A** is used when internal defects are almost certain to be present, (e.g., immediately following a freeze or in late spring and summer months when granulation (tree dryness) is known to be a factor). **Plan B** is used when internal defects are suspected. Plan B detects internal defects while destroying a minimum amount of fruit. Both plans are based on the initial sample size of 25 fruit.

Plan A – After the sample has been examined for external defects, select the 10 most suspicious fruit, without regard to external defects, and cut for internal defects. If no defects are found, do not cut any other specimens from that sample. Continue to cut 10 fruit per sample provided no internal defects are found. If one or more internal defects

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are found, cut the remaining fruit in the sample to determine the percentage of internal defects:

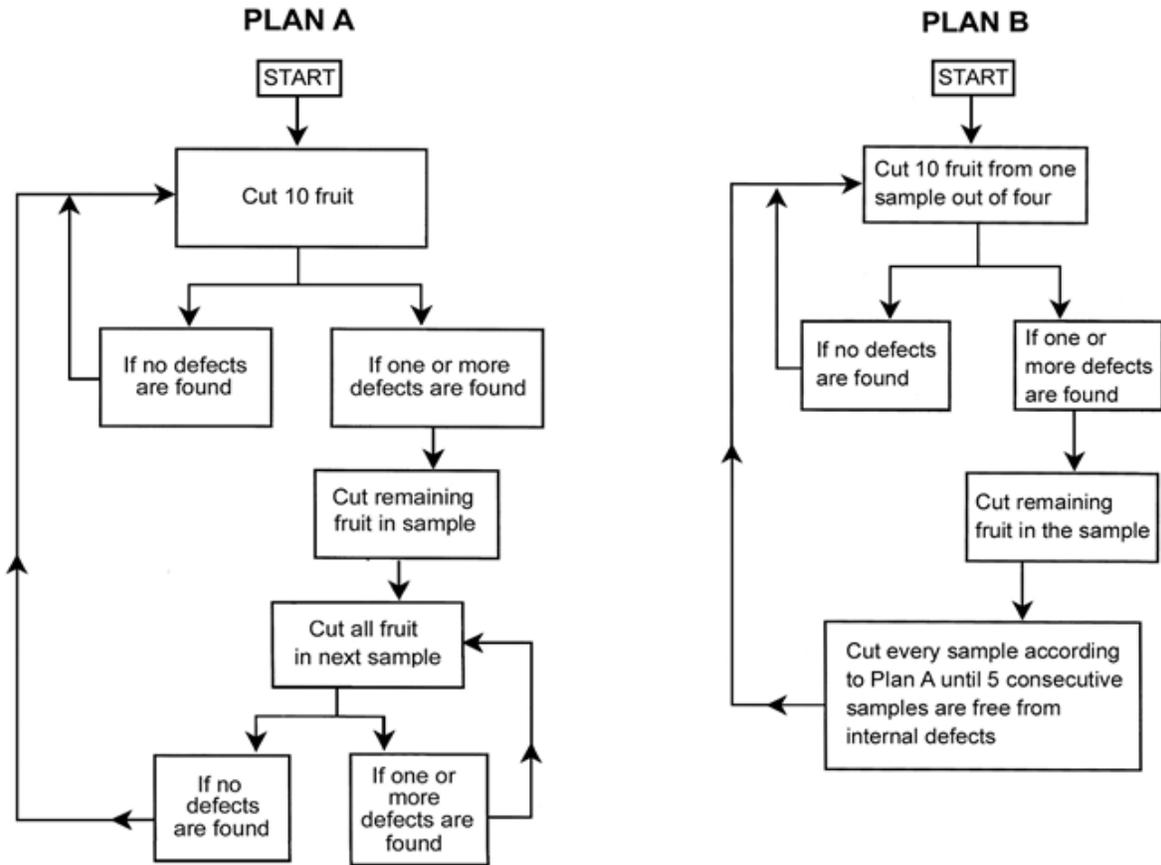
- **Shipping Point:** Do not deviate from the in-line certification sampling size.
- **Market:** If sample tolerances are exceeded, the sample size must be at least doubled except for composite samples (50 fruit) or entire contents if less than 50 fruit in the container. Continue to cut all fruit in each sample until a sample is found free from internal defects. Revert to cutting 10 fruit per sample when no internal defects are found. This does not apply to bagged lots because the entire contents of the bag have already been cut.

Plan B – is similar to Plan A; the only difference is that if no internal defects are found, Plan B requires cutting 10 fruit from every **fourth** sample. Start cutting with the first sample and continue with every **fourth** sample thereafter.

Select the 10 most suspicious fruit without regard to external defects from every fourth sample and cut them for internal defects. If no internal defects are found in the 10 fruit, continue to cut the 10 most suspicious fruit from every fourth sample. If one or more defects are found, cut the remaining fruit in the sample (25), unless the sample tolerances are exceeded. When exceeded, increase sample size to 50 fruit or entire contents if containing less than 50 fruit, and begin using Plan A (not applicable to bagged lots). Cut either 10 fruit or all fruit in the sample according to Plan A until 5 consecutive samples are free from internal defects. Revert to cutting 10 fruit from every fourth sample at this point:

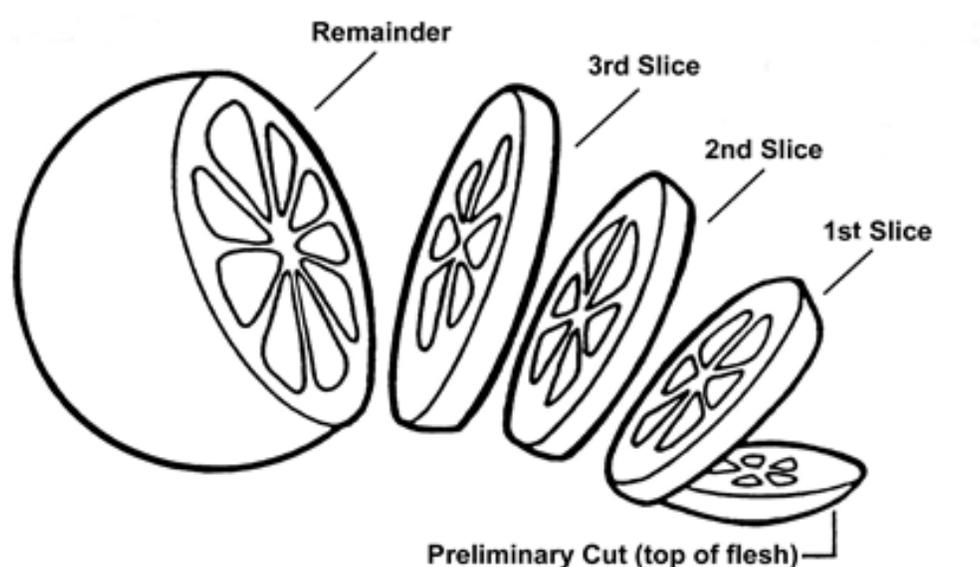
- **Shipping Point:** Do not deviate from the in-line certification sample size.
- **Market:** If sample tolerances are exceeded, the sample size must be at least doubled (50 fruit or entire contents).

CUTTING PLANS FOR INTERNAL DEFECTS



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CUTTING INSTRUCTIONS AND SCORING GUIDE FOR DRYNESS-MUSHY CONDITION



Preliminary Cut: This cut is intended to remove only the rind down to the fleshy portion of the fruit under the stem button and will vary in depth depending on rind thickness.

1st Slice: 1/4 inch in width. This slice may be totally dry or in any stage from mushy to dry in all segments. This is the maximum amount permitted in the U.S. Fancy and No. 1 grades. If the total volume of this slice is affected, any dryness-mushy condition in the remaining portion of the fruit will be considered as **damage**.

2nd Slice: 1/4 inch in width. This slice, plus the first slice (totaling 1/2-inch) may be totally dry or in any stage from mushy to dry in all segments. This represents the maximum volume permitted in the U.S. No. 2 grade. If the total volume of this slice is affected, any dryness or mushy condition in the remaining portion of the fruit will be considered **serious damage**.

3rd Slice: 1/4 inch in width. This 1/4-inch slice, plus the previous two slices (totaling 3/4 inch) may be totally dry or in any stage from mushy to dry in all segments. This represents the maximum volume permitted in the U.S. No. 3 grade. If the total volume of this slice is affected, any dryness or mushy condition in the remaining portion of the fruit will be considered **very serious damage**.

If any portions of the segments in the slice are not mushy or affected by dryness-mushy condition, additional mushiness or dryness may be allowed in other portions of the fruit, but the total amount must not exceed the equivalent volume permitted. If this is encountered, it will be necessary to cut several 1/4-inch slices to determine the total amount of dryness-mushiness present in the fruit.

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TOLERANCES AND APPLICATION OF TOLERANCES

TOLERANCES

§51.689 Tolerances.

In order to allow for variations incident to proper grading and handling in each of the foregoing grades, the following tolerances, by count, based on a minimum 25 count sample, are provided as specified. No tolerance shall apply to wormy fruit.

(a) Defects

(1) U.S. Fancy, U.S. No. 1, U.S. No. 1 Bright, U.S. No. 1 Bronze, U.S. No. 2, and U.S. No. 2 Russet Grades.

(i) *For defects at shipping point¹.* Not more than 10 percent of the fruit in any lot may fail to meet the requirements of the specified grade: *Provided*, That included in this amount not more than 5 percent shall be allowed for defects causing very serious damage, including in this latter amount not more than 1 percent for decay.

(ii) *For defects en route or at destination.* Not more than 12 percent of the fruit in any lot may fail to meet the requirements of the specified grade: *Provided*, That included in this amount not more than the following percentages shall be allowed for defects listed:

(A) 10 percent for fruit having permanent defects; or,

(B) 7 percent for defects causing very serious damage, including therein not more than 5 percent for very serious damage by permanent defects and not more than 3 percent for decay.

(2) U.S. Combination.

(i) *For defects at shipping point¹.* Not more than 10 percent of the fruit in any lot may fail to meet the requirements of the U.S. No. 2 grade: *Provided*, That included in this amount not more than 5 percent shall be allowed for defects causing very serious

¹ Shipping point, as used in these standards, means the point of origin of the shipment in the production area or at port of loading for ship stores or overseas shipments, or in the case of shipments from outside the continental United States, the port of entry into the United States.

damage, including in this latter amount not more than 1 percent for decay.

(ii) *For defects en route or at destination.* Not more than 12 percent of the fruit in any lot may 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:

(A) 10 percent for fruit having permanent defects; or,

(B) 7 percent for defects causing very serious damage, including therein not more than 5 percent for very serious damage by permanent defects and not more than 3 percent for decay.

(iii) *For defects at shipping point¹ and en route or at destination:* No part of any tolerance shall be allowed to reduce for the lot as a whole, the 55 percent of U.S. No. 1 fruit required in the U.S. Combination grade, but individual samples may have not more than 15 percent less than the required percentage for the grade: *Provided,* That the entire lot averages within the percentage required.

(3) U.S. No. 3.

(i) *For defects at shipping point¹:* Not more than 10 percent of the fruit in any lot may fail to meet the requirements of the grade: *Provided,* That included in this amount not more than 1 percent for decay.

(ii) *For defects en route or at destination.* Not more than 12 percent of the fruit in any lot may fail to meet the requirements of the grade: *Provided,* That included in this amount not more than the following percentages shall be allowed for defects listed:

(A) 10 percent for fruit having permanent defects; or,

(B) 3 percent for decay.

(b) Discoloration.

(1) U.S. No. 1, U.S. No. 1 Bright, U.S. Combination and U.S. No. 2. Not more than 10 percent of the fruit in any lot may fail to meet the

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requirements relating to discoloration as specified in each grade. No sample may have more than 20 percent of the fruit with excessive discoloration: *Provided*, That the entire lot averages within the percentage specified.

- (2) **U.S. No. 1 Bronze.** At least 10 percent of the fruit shall have more than one-third of the surface, in the aggregate, affected by discoloration, and no part of any tolerance shall be allowed to reduce this percentage. No sample may have less than 5 percent of the fruit with required discoloration: *Provided*, That the entire lot averages within the percentage specified. No tolerance shall apply to fruit showing no discoloration.
- (3) **U.S. No. 2 Russet.** At least 10 percent of the fruit shall have more than one-half of the surface, in the aggregate, affected by discoloration, and no part of any tolerance shall be allowed to reduce this percentage. No sample may have less than 5 percent of the fruit with the required discoloration: *Provided*, That the entire lot averages within the percentage specified.

SUMMARY OF TOLERANCES

Shipping Point

	U.S. Fancy	U.S. No. 1 U.S. No. 2 U.S. Combination ¹	U.S. No. 3
Discoloration			
A. Discoloration ²	N/A	10%	N/A
Defects			
B. Defects	10%	10%	10%
C. Very Serious Damage (included in B)	5%	5%	N/A
D. Decay (included in B or C for U.S. No. 3)	1%	1%	1%
E. Wormy fruit ³	0%	0%	0%

¹ At least 55 percent of the fruit, by count, must meet the requirements of the U.S. No. 1 grade.

² Discoloration is a separate tolerance and is not included in total defects for U.S. No. 1, U.S. No. 2, and Combination grades. For the U.S. Fancy grade discoloration is part of total defects.

³ There is no tolerance for wormy fruit. If any wormy fruit is found, the lot fails.

Market

	U.S. Fancy	U.S. No. 1 U.S. No. 2 U.S. Combination ¹	U.S. No. 3
Discoloration			
A. Discoloration ²	N/A	10%	N/A
Defects			
B. Defects	12%	12%	12%
C. Permanent defects (included in B)	10%	10%	10%
D. Very Serious Damage (included in B)	7%	7%	N/A
E. Very serious damage by permanent defects (included in D)	5%	5%	N/A
F. Decay (included in D or B for U.S. No. 3)	3%	3%	3%
G. Wormy fruit ³	0%	0%	0%

¹ At least 55 percent of the fruit, by count, must meet the requirements of the U.S. No. 1 grade.

² Discoloration is a separate tolerance and is not included in total defects for U.S. No. 1, U.S. No. 2, and Combination grades. For the U.S. Fancy grade discoloration is part of total defects.

³ There is no tolerance for wormy fruit. If any wormy fruit is found, the lot fails.

APPLICATION OF TOLERANCES

§51.690 Application of tolerances.

Individual samples are subject to the following limitations, unless otherwise specified in §51.689. Individual samples shall have not more than one and one-half times a specified tolerance of 10 percent or more, and not more than double a specified tolerance of less than 10 percent: *Provided*, That at least one decayed may be permitted in any sample: *And provided further*, That the averages for the entire lot are within the tolerances specified for the grade.

SUMMARY OF APPLICATION OF TOLERANCES

Shipping Point

	U.S. Fancy	U.S. No. 1 U.S. No. 2 U.S. Combination¹	U.S. No. 3
Discoloration			
A. Discoloration ²	N/A	20%	N/A
Defects			
B. Defects	15%	15%	15%
C. Very Serious Damage (included in B)	10%	10%	N/A
D. Decay (included in B or C for U.S. No. 3)	2%	2%	2%
E. Wormy Fruit ³	0%	0%	0%

¹ At least 55 percent of the fruit, by count, must meet the requirements of the U.S. No. 1 grade, but individual samples may have not less than 40 percent U.S. No. 1 fruit.

² Discoloration is a separate tolerance and is not included in total defects for U.S. No. 1, U.S. No. 2, and Combination grades. For the U.S. Fancy grade discoloration is part of total defects.

³ There is no tolerance for wormy fruit. If any wormy fruit is found, the lot fails.

Market

	U.S. Fancy	U.S. No. 1 U.S. No. 2 U.S. Combination ¹	U.S. No. 3
Discoloration			
A. Discoloration ²	N/A	20%	N/A
Defects			
B. Defects	18%	18%	18%
C. Permanent defects (included in B)	15%	15%	15%
D. Very Serious Damage (included in B)	14%	14%	N/A
E. Very serious damage by permanent defects (included in D)	10%	10%	N/A
F. Decay (included in D or B for U.S. No. 3)	6%	6%	6%
G. Wormy Fruit ³	0%	0%	0%

¹ At least 55 percent of the fruit, by count, must meet the requirements of the U.S. No. 1 grade, but individual samples may have not less than 40 percent U.S. No. 1 fruit.

² Discoloration is a separate tolerance and is not included in total defects for U.S. No. 1, U.S. No. 2, and Combination grades. For the U.S. Fancy grade discoloration is part of total defects.

³ There is no tolerance for wormy fruit. If any wormy fruit is found, the lot fails.

NOTESHEET AND CERTIFICATE

Entries on the notesheet and certificate must be legible and accurate. Support all information appearing on the certificate with information from the notesheet. All information and notations must be properly recorded so that anyone familiar with inspection procedures can understand them and write a certificate. Notesheets and certificates are prima facie evidence and must withstand legal scrutiny.

Detailed instructions about dates, inspection points, places of inspection, types of carriers, lading, and other items not covered by these instructions may be found in the [General Shipping Point Manual](#), [General Market Manual](#), Federal-State Inspection Certificate (FV/SC-184) Handbook, or [Fresh Fruit and Vegetable Inspection Certificate \(FV/SC-300\) Manual](#). Contact your supervisor for anything not covered in these instructions.

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PRODUCT

Use the common name “Oranges” to describe this commodity in the product heading. Type may be reported in conjunction with oranges or may be reported in the “Lot ID” section on market notesheets and certificates. Do not certify variety. The variety may be reported in the remarks or other section if requested by applicant and clearly stated on cartons or containers.

CLASSIFICATION OF ORANGES

Early type are those having a normal maturing season corresponding to the maturing period for Parson Brown or Hamlin varieties. October through January.

Mid-Season type are those having a normal maturing season corresponding to that of Pineapples and Seedlings. December through February.

Late type oranges are those having a normal maturing period corresponding to that of Valencia, Lue Gim Gong, and Pope Summer varieties. March through July.

The following list of orange varieties are classified as Early, Mid-Season, and Late types:

Early	Mid-Season			Late
Boones' Early	Acme	Majorca	Seeding	Bessie
Conner's Seedless	Arcadia	Marquis	Star Calyx	Du Roi
Early Oblong	Centennial	May	Stark	Lamb's Late
Enterprise	Circassian	Nonpareil	St. Michael	Lue Gim Gong
Foster	Dummitt	Old Vini	Whitaker	Maltese Oval
Hamlin	Exquisite	Osceola	White	Pope Summer
Heards	Homosassa	Paper Rind		Valencia
Hick	Indian River	Pineapple		
Parson Brown	Jaffa	Prata		
Sixteen to One	Joppa	Ruby		
Walker's Early	Madma Vinous	Sanford Blood		
	Magnum Bonum	Saul Blood		

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NUMBER/TYPE OF CONTAINERS

Always report the number of containers. In the market and at shipping point locations for stationary lot certification, always verify the container count provided by the applicant for each lot and report it as the “inspector’s count.” When the number of containers available for inspection does not match the application, confirm that the amount presented for inspection constitutes the lot. If an accurate count cannot be determined, report the count at someone else’s authority, but also report the reason for doing so on the notesheet (e.g., numerous pallets with mixed product).

At shipping point locations for “days-run” certification, the manifest for count typically provided by the applicant is acceptable to use for reporting the number of containers.

BRANDS/MARKINGS

SHIPPING POINT

Report the brand, variety, size, color, Positive Lot Identification (PLI), and other important information appearing on the container on the notesheet and certificate in the appropriate sections. When “color added” is stamped on the container or fruit, also report it under this heading.

MARKET

Report the brand, variety, size, color, count, grade, weight, point of origin, and other important information appearing on the container on the notesheet in the “Brands/Marks” section. On the certificate, report only the brand name and other pertinent information in the “Brand/Markings” section. When “color added” is stamped on the container or fruit, also report it under this heading.

ORIGIN

Do not make a positive statement about origin on your own authority; rather, quote the container markings that list the state or country of origin in the appropriate space on the notesheet and the certificate. If origin is not marked, try to obtain this information from the applicant. This policy is necessary because some firms may use one mark on the same product packed in several states.

CONDITION OF PACK

Judge pack according to both bulge and tightness of the pack.

When Biphenyl or other treated wraps, pads or liners are specified in the contract and the inspector can determine this factor without any question or doubt, report this information under the Pack heading. "Crates lined with Biphenyl liners."

Report unusual conditions, such as excessively high bulge. Some packs may have a high bulge, but the pack will be loose; flat packs may be found with the fruit tight in the box.

DESCRIPTION OF PACK

Describe condition of pack for open or unlidded container in terms of fill. For other containers, apply terms describing tightness or fill depending upon the product and types of containers.

FILLING OF CARTONS

Use the following terms to describe the filling of cartons:

Well filled: The carton is filled so that the fruit is in contact with the cover.

Level full: The fruit is level with the top edge of the container.

Fairly well filled: The carton is filled so that the fruit is slightly below the top edge but no more than 1/2 inch below.

Slack: The fruit is more than 1/2 inch below the top edge of the carton. This term should also be qualified by showing how much the fruit is below the top edge in inches or fraction of an inch.

TIGHTNESS OF PACK WITHIN LAYERS IN CARTONS

Use the following terms to describe the tightness of pack within the layers in the carton:

Tight: The fruit is tight enough in layers to prevent the specimens from moving materially within the package.

Fairly tight: A condition between “tight” and “loose” in which there is excess of space within the layers but not sufficient space that an additional row of fruit can properly be added.

Loose: There is sufficient space so that an additional row can properly be added to each layer within the container.

Proper description of pack requires the use of terms for both filling and tightness. For example, “Well filled, tight in layers,” “fairly well filled, loose in layers” or other combinations in accordance with the facts. Cartons that are to be certified as meeting Standard Pack must be level full at time of packing.

TIGHTNESS OF PACK WITHIN LAYERS IN WIRE-BOUND CRATES

Use the following terms in describing the tightness of pack within the layers in wire-bound crates:

Very tight: Pack is too tight and tends to cause injury.

Tight: Both pack and bulge are satisfactory.

Fairly tight: The condition between “tight” and “slack,” that is tight enough to prevent the specimens from moving within the container.

Slack: The package is not full. Also, qualify this statement by showing how much the fruit is below the level of the lid in fractions of an inch or inches.

Examples: Tight pack in most cases, many cases 1/2 inch slack to level full; Fairly tight, lids showing 1/2 to 1-inch bulge; Most cases well filled, many fairly well filled. In determining the tightness of wire-bound crates take into consideration whether the package is on a rigid surface or whether it is resting on the ends of other crates of fruit which might permit the bottom side to become convex. This would make the crate appear slack at the top while in reality it is fairly tight.

BULGE

In reporting the height of the bulge, the measurement is the distance of the highest part of the curve of the lid above the level of the top edge of the ends of the container or the top side slats when they are flush with the tops of the ends.

STANDARD PACK

Standard Pack does not need to be determined on Market inspections unless requested by the applicant. Make certification of Standard Pack under the “Grade” heading in connection with the grade statement, but show the tightness of pack, and the uniformity of sizing, which are part of the requirements of Standard Pack, under the headings “Pack and Size.” A load may meet the requirements of the U.S. grades and not meet the requirements of “Standard Pack,” or vice versa.

§51.691 Standard pack.

- (a) **Fruit shall be fairly uniform in size. When packed in approved containers, fruit shall be arranged according to approved and recognized methods.**
- (b) **“Fairly uniform in size” means that not more than 10 percent of fruit in any lot, and not more than double that amount in any sample, are outside the ranges of diameters given in Table 1.**

Table 1 to §51.691 paragraph (b) – 7/10 Bushel Carton

Pack size/number of oranges	Diameter in inches	
	Minimum	Maximum
24	3-12/16	5-1/16
32	3-6/16	4-9/16
36	3-4/16	4-6/16
40	3-2/16	4-4/16
48	2-15/16	4
56	2-13/16	3-13/16
64	2-11/16	3-10/16
72	2-9/16	3-8/16
88	2-8/16	3-4/16
113	2-7/16	3
138	2-6/16	2-12/16
163	2-3/16	2-8/16

- (c) **In order to allow for variations, other than sizing, incident to proper packing, not more than 5 percent of the packages in any lot may fail to meet the requirements of standard pack.**

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STANDARD SIZING AND FILL

Boxes or cartons which are not place-packed according to a definite pattern, but which are volume filled or jumble packed, cannot be certified as Standard Pack because the fruit is not arranged according to the approved and recognized methods. However, such cartons of oranges may be certified as meeting Standard Sizing and Fill if the oranges are fairly uniform (see size section) in size and they have been properly shaken down and the container is at least level full at time of packing.

Cartons that are fairly well filled, will be considered as meeting the filling requirements of Standard Sizing and Fill. As with Standard Pack, Standard Sizing and Fill certification will be made only on specific request and under the grade heading in connection with the grade statement.

CONSUMER BAGS

When consumer bags are used, even though these bags are packed in master containers, mark out the Pack heading on the notesheet.

TEMPERATURE OF PRODUCT

Temperatures are not normally determined or reported at shipping point. However, due to the importance of the pulp temperature of fresh fruits and vegetables when in transit or at destination, it is essential that you accurately determine and report the temperature or range in temperatures on each lot. Report pulp temperature regardless of the location of the product, e.g., in the carrier, in a warehouse, or stacked on a platform.

Precool the thermometer to obtain true readings and report all temperatures to the nearest whole degree. Take a minimum of three temperatures for each lot; record the results on the notesheet. Take additional temperatures if the lot is abnormally cold or hot, or if there is a specific request for temperature. Specify the location where you took the temperature in the lot and/or load in greater detail when additional temperatures are taken.

SIZE

Size is not a requirement of the grade. A load may meet the requirements of the U.S. grades and fail to meet size. For market inspections, determine size if requested by the applicant, see the [Standard Pack](#) section.

MEASURING DIAMETER

In measuring fruit for diameter, use the greatest dimension measured at right angles to a line from stem to blossom end of the fruit. Make these measurements with a rigid jaw caliper. Turn the fruit in the caliper to make sure that the greatest dimension is obtained. Do not use pliable fruit, which has been squeezed out of shape account of tight pack, in the sample for measurement.

When performing inspections for size only, each size will be considered separately and treated as a separate lot. See the [Standard Pack](#) section for additional details. For detailed guidance on size, refer to the [General Market Manual](#).

SIZE MARKS ON CONTAINERS

Report the size marks on the containers under the “Brands and Markings” heading in connection with distinguishing marks. If they are not as marked, indicate this fact under the “Size” heading. Use general terms in describing the extent of incorrect markings. Make the actual certification of size and count under the “Size” heading even though the size and count markings on the containers are shown under the “Products” heading.

DESCRIBING SIZE

Use the term “fairly uniform” if a lot meets size requirements, “irregular” if size requirements are not met. Do not use the term “uniform” when describing size since the term is not defined.

When it is necessary to report a size or lot as “irregular,” the number of fruit and the percentage which fails to meet the requirements of “fairly uniform” will be shown to justify the use of the term “irregular.”

BULK SHIPMENTS OR CONSUMER BAG PACKS

Request for inspection for size of bulk shipments or consumer bag packs will require the measurement of sufficient fruit to accurately determine the number of fruit below or above a specified minimum and maximum diameter. When a box size is specified, as for example, 88 size, determine the number of fruit less than 2-8/16-inches and above 3-4/16-inches in diameter. No statement of box sizes will be made on the certificate covering inspection of bulk or bagged fruit. However, the size description can be given by stating the diameter range in inches and fractions thereof. In addition, report the range and average percentage of fruit under and above the specified minimum and maximum diameters.

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Examples:

1. “Fairly uniform size.”
2. (In Bulk) “From 2-4/16 to 3-8/16, mostly 2-9/16 to 3 inches in diameter. Ranges from 3 to 24% per sample, average 8% under 2-8/16 inches or over 3-4/16 inches in diameter.”

DEFECTS (QUALITY AND CONDITION)

Statements pertaining to freshness, maturity, shape, color, the amount and type of defects, and the amount of decay are shown under the appropriate headings.

Factors noted with **(Q)** are considered as **QUALITY** only. Quality or “permanent” defects are those that do not change during storage or shipment (e.g., shape and scars).

Report factors noted with **(C)** as **CONDITION** on market certificates. Condition defects are factors subject to change during shipment or storage (e.g., bruising, discoloration, shriveling, and decay).

Factors noted with **(Q or C)** may be considered as **QUALITY** or **CONDITION**, depending on the circumstances.

References to area or aggregate area, or length are based on an orange **2-7/8 inches** in diameter. Allowing proportionately greater areas on larger fruit and lesser areas on smaller fruit.

AMMONIATION (Q)

Ammoniation, also called exanthema, is a non-parasitic nutritional disease of the fruit, leaves, and twigs of citrus trees caused by a copper deficiency. It appears as dark brown, glossy spots on the rind of the fruit which can be of various sizes and shapes. Gum pockets can sometimes be found in the albedo of thick-skinned fruit when no symptoms appear on the surface. The surface spots or scars may be pimple-like and reddish-brown, coalescing to form large roughened areas on the fruit or they may be smooth and flat, or concave and rough. The rind can become hard and stiff. Ammoniation can be mistaken for melanose. The two can be distinguished by the fact that ammoniation originates in the tissues beneath the epidermis and appear to come up through the epidermis, while melanose is on the surface of the rind.

Scoring Guide

Score any amount against the U.S. Fancy grade.

Damage: If not occurring as light speck type.

Serious damage: When scars are cracked or dark and aggregating more than a circle 3/4 inch in diameter or light colored and aggregating more than a circle 1-1/4 inches in diameter.

Very serious damage: When aggregating more than 25% of the surface.

BUCKSKIN (Q)

Fruit affected by buckskin will have slightly roughened, grayish areas of abnormally thick rind. Buckskin is caused by citrus rust mites on immature fruit which is aggravated and extended by a surface-growing fungus following the mite injury.

Scoring Guide

Score any amount against the U.S. Fancy grade.

Damage: When aggregating more than a circle 1 inch in diameter.

Serious damage: When aggregating more than 25% of the surface.

Very serious damage: When aggregating more than 50% of the surface.

BRUISING (C)

Bruising after packing occurs because of jostling and movement in slack packs, pressure from too tight a pack, or overhead weight on lower layer packages. Bruises will have soft areas that, when cut, contain mushy areas in the underlying flesh. Affected fruit may be flattened on two or more sides. If the underlying flesh is not affected, these flattened areas may regain their shape. Do not score flattened areas unless the underlying flesh is mushy.

The U.S. Standards for Grades of Oranges (Texas and States other than Florida, California and Arizona) require the U.S. Fancy, U.S. No. 1, U.S. No. 1 Bright, U.S. No.1 Bronze, U.S. Combination, U.S. No. 2, and U.S. No. 2 Russet grades to be free from bruises. The U.S. No. 3 grade requires the fruit not be very seriously damaged by any other cause.

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Scoring Guide

Score against **U.S. Fancy, U.S. No. 1, U.S. Combination, and U.S. No. 2 grades** when any amount of segment walls are collapsed, or rag is ruptured and juice sacs are ruptured, or areas are flattened to a point where they are so sunken that they cannot be restored into their original shape.

Very serious damage: When the fruit has been split open, peel is badly water soaked following bruising, or rag is ruptured and juice sacs are ruptured causing a mushy condition affecting all segments more than 3/4 inch at bruised area or the equivalent of the amount, by volume, when affecting more than one area on the fruit.

CAKED MELANOSE (Q)

Melanose occurs as small brown raised spots, approximately pin head size. These spots may coalesce to form large scab-like patches known as “caked melanose.” When scattered over the fruit surface, they are scored as [discoloration](#) (speck type melanose).

Melanose spots may also appear similar to tear staining. Tear staining is a form of rust mite discoloration with a smooth, diffused appearance. When encountered, score tear staining as discoloration. Melanose is easily distinguished from this defect by its brown glazed appearance, slightly raised texture, and distinct sandpaper feel.

Scoring Guide

Score any amount against the U.S. Fancy and U.S. No. 1 grades.

Serious damage: When aggregating more than a circle 3/4 inch in diameter.

Very serious damage: When aggregating more than 25% of the surface.

COLOR (Q)

“Color” refers to the amount of external yellow color present. It does not relate to discoloration caused by rust mite, speck type melanose, and smooth-fairly smooth superficial scars. When determining color, judge only that part of the fruit not affected by discoloration. Color must be judged in normal daylight. Fruit appears greener under artificial light or in a poorly lighted area.

§51.695 Well colored...the fruit is yellow or orange in color with practically no trace of green color.

§51.703 Fairly well colored...except for a one-inch circle in the aggregate of green color, the yellow or orange color predominates over the green color on that part of the fruit which is not discolored.

§51.704 Reasonably well colored...the yellow or orange color predominates over the green color on at least two-thirds of the fruit surface in the aggregate which is not discolored.

Scoring Guide

U.S. Fancy: If the fruit does not meet the definition of “well colored.” Report as “Not well colored.”

U.S. No. 1, U.S. No. 1 Bright, U.S. No. 1 Bronze and U.S. Combination: When early and mid-season varieties do not meet the definition of “fairly well colored,” and for other late varieties if not less than 50% by count do not meet the definition of “fairly well colored” with the remaining amount at least “reasonably well colored.” Report as “Not fairly well colored” or “Not reasonably well colored” as the case may be.

U.S. No 2 and U.S. No. 2 Russet: When the fruit does not meet the definition of “reasonably well colored.” Report as “Not reasonably well colored.”

U.S. No. 3: When more than 25% of the surface is of a solid dark green color.

COLOR ADDED

Do not mention on the certificate the degree of color attained after a color added process. Report it under “Brands and Markings” if the containers are stamped color added.

CREASING (Q) (C)

There are three citrus fruit-creasing/cracking patterns, including [flavedo](#)-splitting, inner-cracking and [albedo](#)-splitting, also called fruit creasing or pitting. This can appear as a transparent irregular pattern of the rind caused by the thickening peel.

Creasing severity does not increase after harvest. Creases in fruit that are subjected to hot solutions, such as color added treatment, tend to become more apparent.

On the market, creasing is scored as a quality factor unless the fruit is color added. If the fruit or containers are marked “color added” score all creasing as a condition factor. Do not aggregate, consider only the total surface area that is affected.

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Scoring Guide

Score any amount against the U.S. Fancy grade.

Damage: When materially weakens the skin, or extends over more than 1/3 of the surface.

Serious damage: When seriously weakens the skin, or extends over more than 1/2 of the surface.

Very serious damage: When very seriously weakens the skin, or is distributed over practically the entire surface.

DISCOLORATION (Q)

Use the term “Excessive discoloration” to describe discoloration which affects the appearance more than the amount permitted for the grade. Report excessive discoloration separately from other quality defects **except** in the U.S. Fancy grade.

Discoloration is defined in the standards and is based on the aggregate area of russeting of a light shade to golden brown. Discoloration of a lighter shade of color may be permitted on a greater area and darker shades of color will be restricted to a lesser area.

§51.681 U.S. Fancy...(a) Basic requirements...(1) Discoloration: Not more than one-tenth of the surface, in the aggregate, may be affected by discoloration. (See §51.700.)

§51.682 U.S. No. 1...(a) Basic requirements...(2) Discoloration: Not more than one-third of the surface, in the aggregate, may be affected by discoloration. (See §51.700.)

§51.683 U.S. No. 1 Bright...no fruit may have more than one-tenth of its surface, in the aggregate, affected by discoloration. For tolerances see §51.689.

§51.684 U.S. No. 1 Bronze...all fruit must show some discoloration and at least 10 percent, by count, of the fruit shall have more than one-third of their surface, in the aggregate, affected by discoloration. The predominating discoloration on these fruits shall be of rust mite type. For tolerances see §51.689.

§51.685 U.S. Combination...the lot meets the basic requirement for discoloration as specified in the U.S. No. 2 grade.

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§51.686 U.S. No. 2...(a) Basic requirements...(1) Discoloration: Not more than one-half of the surface, in the aggregate, may be affected by discoloration. For tolerances see §51.689.

§51.687 U.S. No. 2 Russet...at least 10 percent by count of the fruit shall have more than one-half of their surface, in the aggregate, affected by any type of discoloration. For tolerances see §51.689.

§51.700 Discoloration...means russeting of light shade of golden brown caused by rust mite or other means. Lighter shades of discoloration caused by smooth or fairly smooth, superficial scars or other means may be allowed on a greater area, or darker shades may be allowed on a lesser area, provided no discoloration caused by melanose or other means may affect the appearance of the fruit to a greater extent than the shade and amount of discoloration allowed for the grade.

DISCOLORATION TOLERANCES

§51.689 Tolerances...

(b) Discoloration.

- (1) U.S. No. 1, U.S. No. 1 Bright, U.S. Combination and U.S. No. 2. Not more than 10 percent of the fruit in any lot may fail to meet the requirements relating to discoloration as specified in each grade. No sample may have more than 20 percent of the fruit with excessive discoloration: *Provided*, That the entire lot averages within the percentage specified.**
- (2) U.S. No. 1 Bronze. At least 10 percent of the fruit shall have more than one-third of the surface, in the aggregate, affected by discoloration, and no part of any tolerance shall be allowed to reduce this percentage. No sample may have less than 5 percent of the fruit with required discoloration: *Provided*, That the entire lot averages within the percentage specified. No tolerance shall apply to fruit showing no discoloration.**
- (3) U.S. No. 2 Russet. At least 10 percent of the fruit shall have more than one-half of the surface, in the aggregate, affected by discoloration, and no part of any tolerance shall be allowed to reduce this percentage. No sample may have less than 5 percent of the fruit with the required discoloration: *Provided*, That the entire lot averages within the percentage specified.**

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SUMMARY OF DISCOLORATION TOLERANCES

Shipping Point and Market

Grade	Surface Area Allowed	Surface Area Required	Lot Tolerance	Sample Tolerance
U.S. Fancy	1/10	—	1	1
U.S. No.1	1/3	—	10%	20%
U.S. No.1 Bright	1/10	—	10%	20%
U.S. No. 1 Bronze ²	—	1/3	At least 10%	No less than 5% in individual sample
U.S. Combination	—	—	10%	20%
U.S. No. 2	1/2	—	10%	20%
U.S. No. 2 Russet ³	—	1/2	At least 10%	No less than 5% in individual sample

¹ Discoloration for the U.S. Fancy grade is included in the total tolerance for defects.

² For U.S. No. 1 Bronze the predominating type of discoloration on each fruit shall be of rust mite type. All fruit must show some discoloration. No tolerance shall apply to fruit showing no discoloration.

³For U.S. No. 1 Russet the predominating type of discoloration may be of any type. All fruit must show some discoloration. No tolerance shall apply to fruit showing no discoloration.

DRYNESS OR MUSHY CONDITION (Q) (C)

Depth of dryness or mushy conditions specified is for all segments at the stem-end, or the equivalent of this amount, by volume, when occurring in other portions of the fruit. If segment membrane walls show buckling, at a cross section cut near the stem-end of the fruit, examine the lot closely for further injury such as:

1. Watersoaked condition of the core;
2. Mushy condition of segments or portions of segments;
3. Partly dry or dry portions of segment; and,
4. Open spaces in the pulp.

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If any of the preceding conditions, or any combination of these conditions, is present and is the equivalent of more than the first 1/4 inch slice at the stem end, the fruit is damaged. Use the guidance provided in the [Sampling for Internal Defects](#) section and [Cutting Instructions and Scoring Guide for Dryness-mushy Condition](#).

FIRMNESS/PUFFY (C)

The U.S. Fancy and U.S. No.1 grades require firm fruit. The U.S. No.2 grades requires fruit must be at least fairly firm. Fruit not meeting these requirements are scored against the total grade tolerance. The U.S. No. 3 grade allows slightly spongy fruit.

If the fruit only shows signs of “puffy” skins, then score as damage (when the skin separates from more than half of the fruit) and report as “badly puffy.” If all the skin has separated from the fruit, then score as serious damage and report as “extremely puffy.” However, in the No. 3 grade the fruit would have to be soft and extremely puffy, report very serious damage as “extremely puffy and soft.” If only extremely puffy, then do not score against the No.3 grade.

When testing for firmness, place the fruit in the palm of your hand and squeeze gently. If the fruit “bounces back” it is considered firm. Fruit with thick skin may feel soft or spongy and still be considered firm. Do not score fruit if only a particular area is affected (refer to the [Bruising](#) section). The entire fruit must be affected before scoring against each grade. Report as “not firm,” “not fairly firm,” or “soft.”

§51.696 Firm...as applied to common oranges, means that the fruit is not soft, or noticeably wilted or flabby; as applied to oranges of the Mandarin group (Satsuma, King, Mandarin), means that the fruit is not extremely puffy, although the skin may be slightly loose.

§51.705 Fairly firm...as applied to common oranges, means that the fruit may be slightly soft, but not bruised; as applied to oranges of the Mandarin group (Satsuma, King, Mandarin) means that the fruit is not extremely puffy or the skin extremely loose.

§51.710 Slightly spongy...the fruit is puffy or slightly wilted but not flabby.

Scoring Guide

U.S. Fancy and U.S. No. 1: When not meeting the requirements of firm score against the total tolerance for the grade applied and report as “Puffy.”

U.S. No. 2: When not meeting the requirements for fairly firm, score against the total tolerance for the grade being applied and report as “Badly puffy.”

U.S. No. 3: When not meeting the requirements of slightly spongy, score against the total tolerance for the grade and report as “Extremely puffy.”

If the fruit is flabby or soft, score as very serious damage against any grade.

FREEZING INJURY (Q) (C)

Fruit that is affected by freezing injury may exhibit the following characteristics:

1. Segment walls have buckled at the cross section cut near the stem end;
2. Watersoaked condition of the core;
3. Mushy condition of segments or portions of segments;
4. Dry portions of segments; and,
5. Open spaces in the pulp.

If frozen citrus is examined several days after thawing, it will usually have a white or colorless crystalline compound (hesperidin) on the membrane that separates the pulp segments. These crystals may be visible within a few hours of freezing. Several weeks after freezing, the crystals may not be as numerous or conspicuous.

Dryness from freezing differs from granulation dryness that is attributed to tree dryness. After freezing, affected juice sacs collapse, having been emptied of juice. During granulation, juice sacs do not collapse; they become filled with gelatinous or solid matter.

If a significant freeze occurs, inspectors will be notified, by Inspection Operations, to score freezing injury as a condition defect. When it is felt that practically no additional change to the fruit will occur in transit, a second notification will be issued, instructing inspectors to score freezing injury as a quality defect.

When freezing injury is encountered, use the guidance provided in the [Sampling for Internal Defects](#) section and [Cutting Instructions and Scoring Guide for Dryness-Mushy Condition](#).

GRANULATION (TREE DRYNESS) (Q)

Do not confuse freezing injury with granulation. Granulation can occur due to variety or growing conditions not related to freezing.

Juice sacs of granulated fruit remain swollen and do not separate from each other or the segment walls. The juice is displaced by yellow to grayish-white solid matter. Affected fruit will generally feel firm, but very light in weight.

Granulation sometimes appears throughout all of the pulp of affected fruits, but more often only occurs in the upper or stem end portion. When dryness is of irregular depth in different segments, use the average depth as the basis for scoring.

Use the guidance provided in the [Sampling for Internal Defects](#) section and [Cutting Instructions and Scoring Guide for Dryness-Mushy Condition](#).

GREEN SPOTS OR OIL SPOTS (Q)

Green spots or oil spots occur as irregular shaped yellow, green, or brown spots in which the oil glands of the skin stand out because of slight sinking of the tissue between them.

Scoring Guide

Injury: When more than slightly affecting the appearance.

Damage: When aggregating more than a circle 7/8 inch in diameter.

Serious damage: When aggregating more than a circle 1-1/4 inches in diameter.

Never very serious damage.

HAIL (Q)

Hail can appear as small pits or strikes on the surface of the fruit.

Scoring Guide

Injury: When not well healed or aggregating more than a circle 1/4 inch in diameter.

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Damage: When not well healed or aggregating more than a circle 3/8 inch in diameter.

Serious damage: When not well healed or aggregating more than a circle 1/2 inch in diameter.

Very serious damage: When not well healed or aggregating more than a circle 3/4 inch in diameter.

MATURITY (Q)

The standards specify that the fruit must be mature. No maturity requirements are outlined in the grades, but the fruit must meet the minimum acid ratio test according to the standards set forth in the [Texas Agriculture Code §21.21\(2\)\(A\)](#).

§51.693 Mature...shall have the same meaning currently assigned that term in the laws and regulations of the State in which the orange is grown; or as the definition of such term may hereafter be amended.

Minimum Ratio of Soluble Solids to Anhydrous Citric Acid Chart

Minimum Total Solids Percent	Solids to Acid Minimum Ratio
8.5	10.00 to 1
9.0	9.00 to 1
All Higher Solids	9.00 to 1

As a general policy, make no mention on the certificate with reference to maturity unless there is a specific request for its determination. If such a request is made, contact the supervisor for instructions. If sampling for maturity is approved, and when a Brix (Solids)-Acid Ratio Test is performed on a lot of citrus and the lot fails account of not meeting the required brix (solids) to acid ratio, report the fact in the grade statement. For example, "Fails to grade U.S. No. 1 account maturity (brix-acid ratio)." In the "Remarks" or "Other" section of the certificate, report the brix-acid ratio that was determined.

SCAB (Q)

Scab appears as spongy, corky lesions which develop on the fruit surface. Parts of the surface may be covered by confluent lesions.

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Scoring Guide

Score any amount against the U.S. Fancy grade.

Damage: When materially detracts from the shape or texture, or aggregating more than a circle 5/8 inch in diameter.

Serious damage: When seriously detracts from the shape or texture, or aggregating more than a circle 3/4 inch in diameter.

Very serious damage: When aggregating more than 25% of the surface.

SCALE (Q)

Scale is an insect that measures 1.5 - 2.0 mm (0.06 - 0.08 in.) in length, has a semi-translucent, reddish-brown or reddish-grey, non-living, protective shield produced from glue-like excretions and previously-shed skins. The shield is typically flat and kidney-shaped. Oranges are affected by several types of scale; the most common type is the purple scale. All types should be reported as scale. In scoring scale, refer to the definitions of injury, damage, serious damage and very serious damage in the standards.

Scoring Guide

Injury: When more than a few adjacent to the “button” at the stem end, or more than 6 scattered on other portions of the fruit.

Damage: When aggregating more than a circle 5/8 inch in diameter.

Serious damage: When aggregating more than a circle 3/4 inch in diameter.

Very serious damage: When aggregating more than 25% of the surface.

SCARS (Q)

Scars are scored on the basis of depth and smoothness. If scars are superficial and smooth or fairly smooth, they are scored on the basis of discoloration (refer to the [Discoloration](#) section).

Scoring Guide

Injury: When depressed, not smooth, or detracts from the appearance more than the amount of discoloration permitted in the grade.

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Damage: When deep, rough or hard aggregating more than a circle 1/4 inch in diameter, slightly rough with slight depth aggregating more than a circle 7/8 inch in diameter, smooth or fairly smooth with slight depth aggregating more than a circle 1-1/4 inch in diameter.

Serious Damage: When deep, rough aggregating more than a circle 1/2 inch in diameter; slightly rough with slight depth aggregating more than a circle 1-1/4 inches in diameter

Very serious damage: When deep, rough, or unsightly so that appearance is very seriously affected.

SHAPE (Q)

The normal shape for the variety must be considered in determining the correct terms in describing shape. Certain varieties are characteristically flat while other varieties tend to be oblong in shape. A fruit of a given shape may be well formed for one variety and only slightly misshapen for another variety.

Use the following terms to describe shape:

§51.697 Well formed...the fruit has the shape characteristic of the variety.

§51.706 Slightly misshapen...the fruit is not of the shape characteristic of the variety but is not appreciably elongated or pointed or otherwise deformed.

§51.709 Misshapen...the fruit is decidedly elongated, pointed or flat sided.

Scoring Guide

U.S. Fancy and U.S. No.1: When not meeting the requirements of well formed, score against the tolerance for permanent defects in the grade being applied and report as “Not well formed.”

U.S. No 2: When not meeting the requirements for slightly misshapen, score against the tolerance for permanent defects in the grade being applied and report as “Misshapen.”

U.S. No 3: When not meeting the requirements for misshapen, score against the tolerance for permanent defects and report as “Badly Misshapen.”

SKIN INJURY (SKIN BREAKDOWN) (C)

This defect category represents several factors that result in similar looking conditions affecting the skin. These can be drying, darkening, or sinking of the oil cells near the stem end or other places on the fruit. Stem end breakdown is a physiological conditions caused by a loss of fruit moisture. Pitting is a physiological breakdown of the rind on the fruit shoulder. This contrasts with breakdown associated with aging, which occurs at the stem end. Storage pitting is another type of skin injury affecting citrus. When these, or other similar-appearing injuries occur, they will be described on the notesheet and certificate as “skin breakdown.”

Scoring Guide

Score any amount against the U.S. Fancy grade.

Damage: When aggregating more than a circle 1/4 inch in diameter.

Serious damage: When aggregating more than a circle 5/8 inch in diameter.

Very serious damage: When aggregating more than 25% of the surface of the fruit.

SOOTY MOLD (Q)

A fungus that adheres to excretions of White Fly or other insects causes this defect. It may occur as light deposits scattered over the surface of the fruit or as heavily concentrated areas at the stem end. Normal washing procedures usually do not remove all fungus deposits. It can be easily scraped with the finger or knife.

Scoring Guide

Injury: When more than slightly affecting the appearance of the fruit.

Damage: When aggregating more than a circle 3/4 inch in diameter.

Serious damage: When aggregating more than a circle 1-3/8 inches in diameter.

Very serious damage: When aggregating more than 25% of the surface of the fruit.

SPROUTED SEEDS (C)

During the latter part of the season, cut a few specimens through the center to determine whether the seeds are sprouted. Normally the seeds do not show sprouts

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before the early part of March. Sprouted seeds, when present, will be treated like other condition factors.

Scoring Guide

Damage: When more than 6 seeds are sprouted, including not more than 2 sprouts extending to the rind, and the remainder averaging not over 1/4 inch in length.

Serious damage: When more than 6 seeds are sprouted, including not more than 3 sprouts extending to the rind, and the remainder averaging not over 1/2 inch in length.

Very serious damage: More than 6 seeds are sprouted, including not more than 3 sprouts extending to the rind, remainder average not over 3/4 inch in length.

In determining the percentages of sprouted seeds, follow the sampling plans for internal defects outlined in the [Cutting Plans for Internal Defects](#) section.

STEM BUTTONS AND ATTACHED STEMS-LEAVES

Stem buttons and attached stem-leaves are not defects and are not mentioned on the certificate unless specifically requested by the applicant. Upon request, the inspector may determine the percentage of fruit with stem buttons attached/missing or with attached/missing stems-leaves. Report findings in percentages or general terms in the "Description of Products" on the SC-184 or in the "Other" section of the SC-300. Reference the applicant's request under "Remarks."

SPRAYBURN (Q)

Fruit affected by Sprayburn has flat, hard darkened areas on the rind. In advanced stages, surface cracking may occur. Darkened areas are usually irregularly sized and reddish to dark brown. Due to its distinctive appearance, Sprayburn is easily identified and usually graded out at the packinghouse.

Scoring Guide

Score any amount against the U.S. Fancy and U.S. No. 1 grades.

Serious damage: When hard, or aggregating more than a circle 1-1/4 inches in diameter.

Very serious Damage: When aggregating more than 25% of the fruit surface.

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SUNBURN (Q)

Sunburn appears as a toughened area of the skin caused by exposure to intense sunlight. The area will usually have a bleached appearance or a deep yellow color and definite flattening of the fruit surface in the affected area. The yellow surface may have a brown or gray center where the surface cells have died. Flesh under the affected area will be dried out, containing little or no juice.

Scoring Guide

Damage: When skin is flattened, dry, darkened or hard, aggregating more than 25% of the surface.

Serious damage: When affecting more than 1/3 of the surface, hard, decidedly one-sided, or light brown and aggregating more than a circle 1-1/4 inches in diameter.

Very serious damage: When aggregating more than 50% of the surface.

SPLIT ROUGH OR PROTRUDING NAVELS (Q)

This defect generally occurs on navel oranges. Unhealed splits are scored against all grades.

Scoring Guide

Injury: When split is unhealed; navel protrudes beyond general contour; opening is so wide, growth so folded and ridged that it detracts noticeably from appearance.

Damage: When split is unhealed, or more than 1/4 inch in length, or more than 3 well healed splits, or navel protrudes beyond the general contour, and opening is so wide, folded or ridged that it detracts materially from appearance.

Serious Damage: When split is unhealed, or more than 1/2 inch in length, or aggregate length of all splits exceed 1 inch, or navel protrudes beyond general contour, and opening is so wide, folded and ridged that it seriously detracts from appearance.

Very serious damage: Score when split is unhealed, or fruit is very seriously weakened.

TEXTURE (Q)

Texture refers to the smoothness or roughness of skin that varies considerably with the size of the fruit and variety. Large sizes are normally rougher than small sizes for the

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same variety. Therefore, in reporting smooth and fairly smooth texture, the size of fruit and variety must be considered in determining the proper descriptive term. Thickness of skin can be annotated as it is closely related to texture.

Use the following terms to describe texture:

Smooth: Skin is thin and smooth for the variety and size of the fruit.

Fairly smooth: The skin is not materially rough or coarse and that the skin is not thick for the variety.

Slightly rough: Skin is not smooth or fairly smooth but is not excessively rough or excessively thick, or materially ridged, grooved or wrinkled.

Rough: Skin is excessively rough or excessively thick, or materially ridged, grooved or wrinkled.

Scoring Guide

U.S. Fancy: When not meeting the requirements of smooth, score against the permanent defect tolerance for the grade and report as “Not smooth.”

U.S. No. 1: When not meeting the requirements of fairly smooth, score against the permanent defect tolerance for the grade and report as “Not fairly smooth.”

U.S. No. 2: When not meeting the requirements of slightly rough, score against the permanent defect tolerance for the grade and report as “Rough.”

U.S. No. 3: When not meeting the requirements of rough, score against the permanent defect tolerance for the grade and report as “Excessively rough.”

THORN SCRATCHES (Q)

Wind may cause fruit to rub against branches, twigs, thorns, or leaves, causing scratches and scars to develop. Unlike insect damage scars, this type of scar is usually superficial, and the shape or pattern of the scar may suggest the source of the abrasion.

Scoring Guide

Injury: When not slight, not well healed, or more unsightly than discoloration permitted in the grade.

Damage: When not well healed, or hard concentrated thorn injury aggregating more than a circle 5/8 inch in diameter.

Serious damage: When not well healed, or hard concentrated thorn injury aggregating more than a circle 3/4 inch in diameter.

Very serious damage: When aggregating more than 25% of the surface.

WORMY FRUIT (Q)/(C)

There is no tolerance for wormy fruit in any grade. One affected fruit will cause the entire lot to fail.

Always very serious damage: Free from; score any amount in all grades.

DECAY (C)

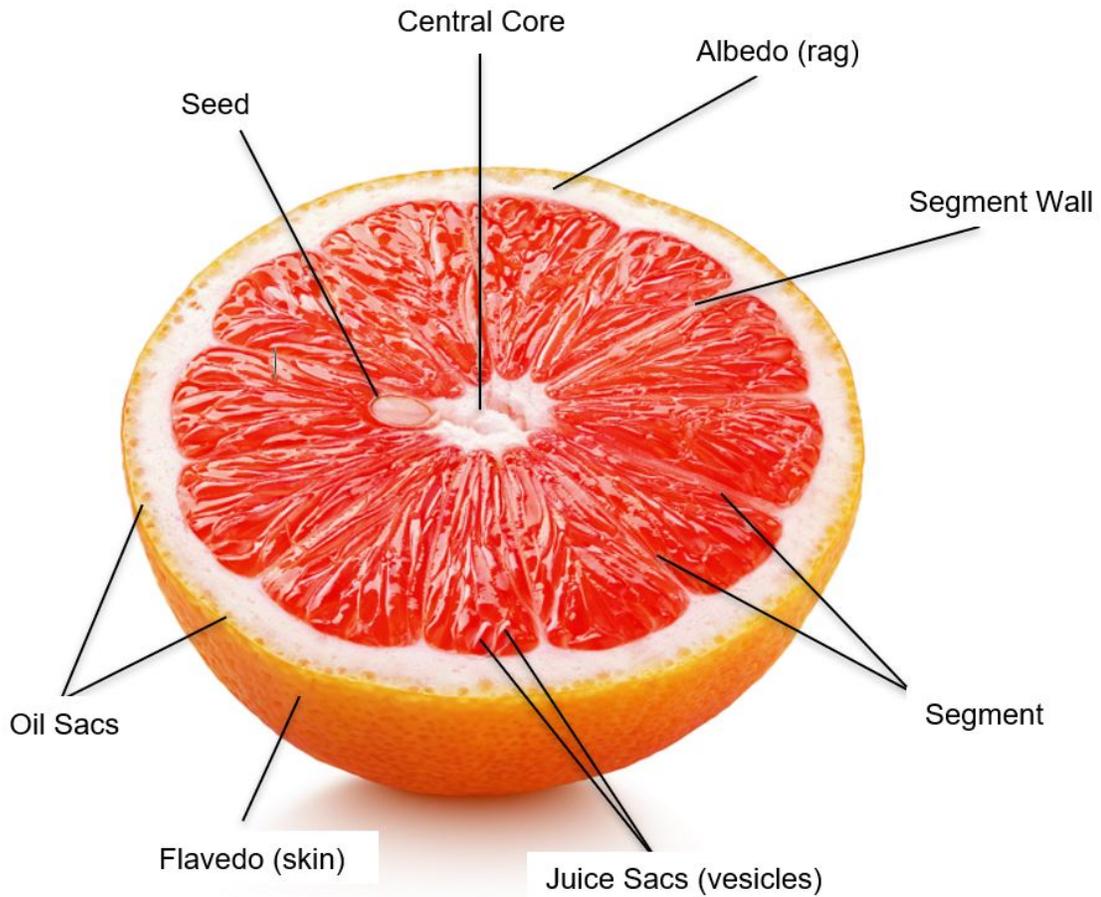
Decay is a free from defect and any amount is scored. The most common types affecting citrus include Green Mold Rot, Blue Mold Rot, Brown rot, Sour Rot, and Stem End Rot.

Scoring Guide

Always very serious damage: Free from; score any amount against the 1% decay tolerance at shipping point and the 3% decay tolerance at market.

On the certificate, report stages of decay as early, moderate, and advanced when in excess of the sample or lot tolerances (see [General Market Manual](#) for definitions).

GRAPEFRUIT IDENTIFICATION CHART



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PART II – GRAPEFRUIT

GENERAL

The U.S. Standards for Grades of Grapefruit (Texas and States other than Florida, California, and Arizona) apply to the common grapefruit, and varieties and hybrids of common grapefruit varieties.

Oranges are covered by a separate U.S. grade standard and in [Part I – Oranges](#) of these instructions.

Any portion of these instructions beginning with §51 and followed with **bold** print is material copied directly from the [United States Standards for Grades of Grapefruit \(Texas and States other than Florida, California, and Arizona\)](#).

IMPORT CERTIFICATION AT PORTS OF ENTRY

Apply the [U.S. Standards for Grades of Florida Grapefruit](#) and the [Florida maturity requirements](#). Do not perform juice content measurements as a measure of maturity. If you are unsure of any import regulation, contact your immediate supervisor or Inspection Operations for guidance.

For inspections requested on imported fruit other than at port of entry, or when import requirements are not in effect, apply the grade standards the fruit most closely resembles (texture, thickness of skin, discoloration, and scarring).

MARKETING ORDER 906

[Marketing Order §906.137](#) for Oranges and Grapefruit Grown in Lower Rio Grande Valley in Texas contains specific grades that may be marked on the containers. If containers are marked as such, they must meet the additional following requirements, or it could be considered misbranded and PACA should be notified.

MO §906.137 (a)... the identifying marks “Texasweet”, “Sweeter By Nature”, “Texas Fancy”, and “Texas Choice” shall be available to handlers only under the following terms and conditions:

- (1) The identifying marks “Texasweet” and “Sweeter by Nature” may severally or jointly be affixed only to containers of grapefruit or to individual grapefruit comprising a lot which grades at least U.S. No. 1.*
- (2) The identifying mark “Texas Fancy” may be affixed only to containers of grapefruit or to individual grapefruit comprising a lot which grades at least U.S.*

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No. 1 with no more than 40 percent of the surface of the grapefruit, in the aggregate, affected by discoloration.

- (3)** *The identifying mark “Texas Choice” may be affixed only to containers of grapefruit or to individual grapefruit comprising a lot which grades at least U.S. No. 2, with no more than 60 percent of the surface of the grapefruit, in the aggregate, affected by discoloration.*

For more complete instructions see [Marketing Order 906](#)

REPRESENTATIVE SAMPLING

Obtaining representative samples is essential. Accurate certification is possible only if the samples examined are truly representative of the entire lot or accessible portion. Sample all portions of a lot or load even if it is difficult to reach all layers or parts. If you cannot access the entire lot for sampling, restrict the inspection and certificate to the accessible portion.

SIZE OF SAMPLE

The sample size for Texas grapefruit is a minimum of 25 fruit for each sample, regardless of the size of the container.

SHIPPING POINT

In-line Certification

Each sample will consist of 25 fruit. If containers have less than 25 fruit, examine a composite sample of 25 fruit. When a sample tolerance is exceeded, double the sample size. The lot average must never exceed the lot tolerance.

The first sample examined must meet all lot tolerances. If three consecutive samples in a lot exceed a lot tolerance, a corrective action must be taken on the packed containers that are represented by the third sample.

Stationary Lots

Sampling for all lots will consist of 25 fruit. If containers have less than 25 fruit, examine a composite sample of 25 fruit. A minimum of 3 samples must be examined to certify a lot.

If a lot tolerance is exceeded, double the sample size for containers containing 50 fruit or more, except for composite samples. If a sample tolerance is exceeded, examine

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the entire contents of the container, except for bulk lots or bulk bins. These lots will be limited to a 100-count sample.

MARKET

For packages containing 25 fruit or more, examine a minimum of 25 fruit. When any sample tolerance is exceeded, examine the entire contents of at least one package which exceeded the sample tolerance.

For packages containing less than 25 fruit, open a sufficient number of adjoining packages to obtain a minimum of 25 fruit. Use the entire contents for the sample when opening an adjoining package. For example, when fruit are packed in 5 lb. consumer bags (10 fruit per bag), open 3 bags (30 fruit sample). If a sample tolerance is exceeded using this method, do not double the sample size. The lot is out of grade because the sample tolerance was exceeded.

SAMPLING BULK LOADS

Since the carrier is the container, do not treat the variation found in bulk loads like similar variations found in packages when applying the rule of double or one and one-half times the tolerance. The load, as a general rule, is sold as a unit and is inspected as such. If it is divided by bulkheads or partitions, you may inspect it as separate units if the applicant identifies the units as being separate or if there is a material difference in the quality and condition of the units. Do not attempt to report a range or an average for bulk loads. See the [General Market Manual](#).

When determining the minimum number of sub-samples drawn from a bulk shipment, divide the load's approximate net weight by the appropriate "packed net weight." This calculation provides a 4/5-bushel equivalent. Example: net weight of a load is approximate 57,000 pounds; $57,000 \div 45$ (packed net weight) = 1,267 cartons. Use the calculated carton equivalent as a guide when determining the number of sub-samples to be examined.

Examine a minimum of 25 contiguous fruit per sub-sample.

NUMBER OF SAMPLES

SHIPPING POINT

In-line Certification

A minimum of one sample for every 200 containers packed or 1/2 of the 1% of the total containers packed.

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Stationary Lots

A minimum of 1% of the packages within the load or lot is recommended with a minimum of three sample examined on any lot.

MARKET

As a general guide the goal is to sample 1% of the containers in the lot. This number may be larger or smaller depending on the amount of defects in the lot. Very low or very high percentages of defects may change the sample number to less or more than 1%, respectively. Examine enough samples to ensure that the certificate issued will accurately describe the quality and condition of the lot. All unrestricted lots will have a minimum of three samples examined. Lots with less than three containers will have all containers examined to be considered unrestricted. For detailed guidance on the number of samples, refer to the [General Market Manual](#).

SAMPLING FOR INTERNAL DEFECTS

The following plans are designed to provide efficient and accurate methods of sampling for internal defects in citrus. These defects include dryness-mushy condition (freezing injury), granulation (tree dryness), sprouted seeds, bruising or any other defect that cannot be detected or determined without cutting the fruit.

There are two specific cutting plans. **Plan A** is used when internal defects are almost certain to be present, (e.g., immediately following a freeze or in late spring and summer months when granulation (tree dryness) is known to be a factor). **Plan B** is used when internal defects are suspected. Plan B detects internal defects while destroying a minimum amount of fruit. Both plans are based on the initial sample size of 25 fruit.

Plan A – After the sample has been examined for external defects, select the 10 most suspicious fruit, without regard to external defects, and cut for internal defects. If no defects are found, do not cut any other specimens from that sample. Continue to cut 10 fruit per sample provided no internal defects are found. If one or more internal defects are found, cut the remaining fruit in the sample to determine the percentage of internal defects:

- **Shipping Point:** Do not deviate from the in-line certification sampling size.
- **Market:** If sample tolerances are exceeded, the sample size must be at least doubled except for composite samples (50 fruit) or entire contents if less than 50 fruit in the container. Continue to cut all fruit in each sample until a sample is found free from internal defects. Revert to cutting 10 fruit per sample when no

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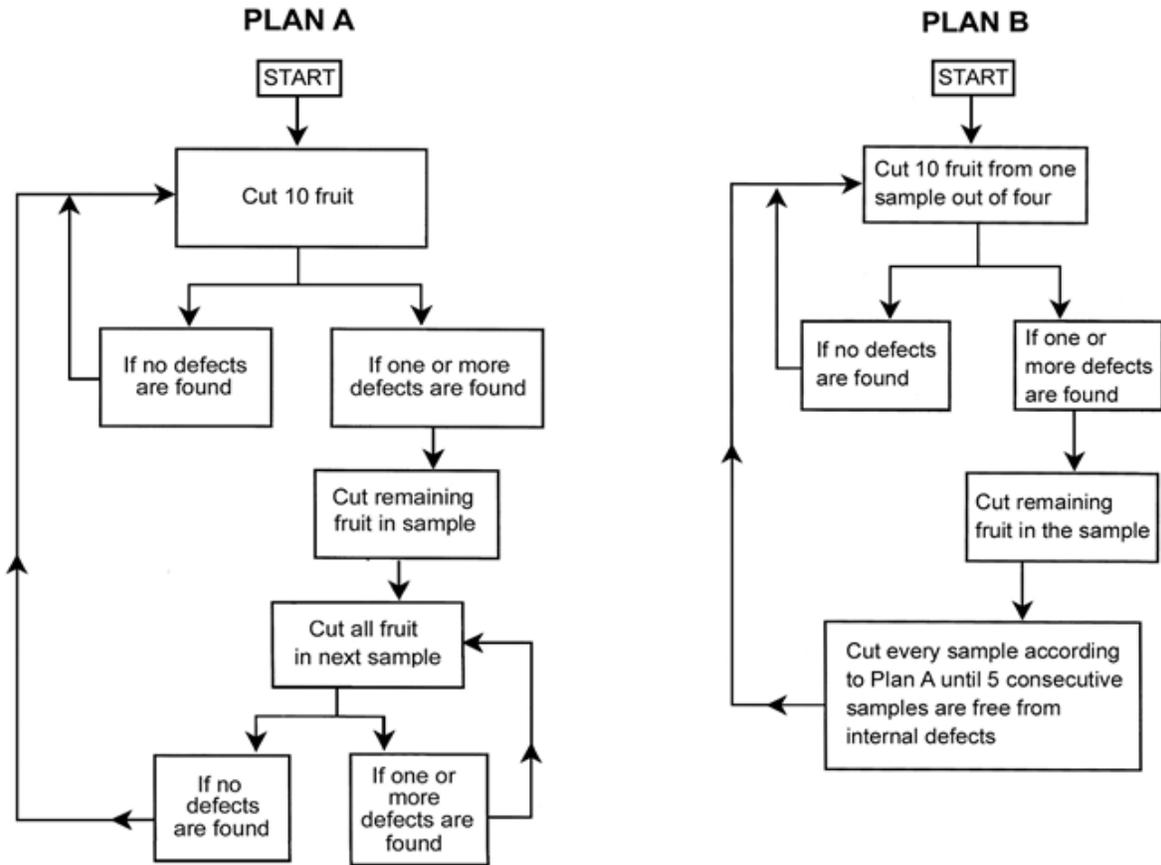
internal defects are found. This does not apply to bagged lots because the entire contents of the bag have already been cut.

Plan B – is similar to Plan A; the only difference is that if no internal defects are found, Plan B requires cutting 10 fruit from every **fourth** sample. Cutting should start with the first sample and continue with every **fourth** sample thereafter.

Select the 10 most suspicious fruit without regard to external defects from every fourth sample and cut them for internal defects. If no internal defects are found in the 10 fruit, continue to cut the 10 most suspicious fruit from every fourth sample. If one or more defects are found, cut the remaining fruit in the sample (25), unless the sample tolerances are exceeded. When exceeded, increase sample size to 50 fruit or entire contents if containing less than 50 fruit, and begin using Plan A (not applicable to bagged lots). Cut either 10 fruit or all fruit in the sample according to Plan A until 5 consecutive samples are free from internal defects. Revert to cutting 10 fruit from every fourth sample at this point:

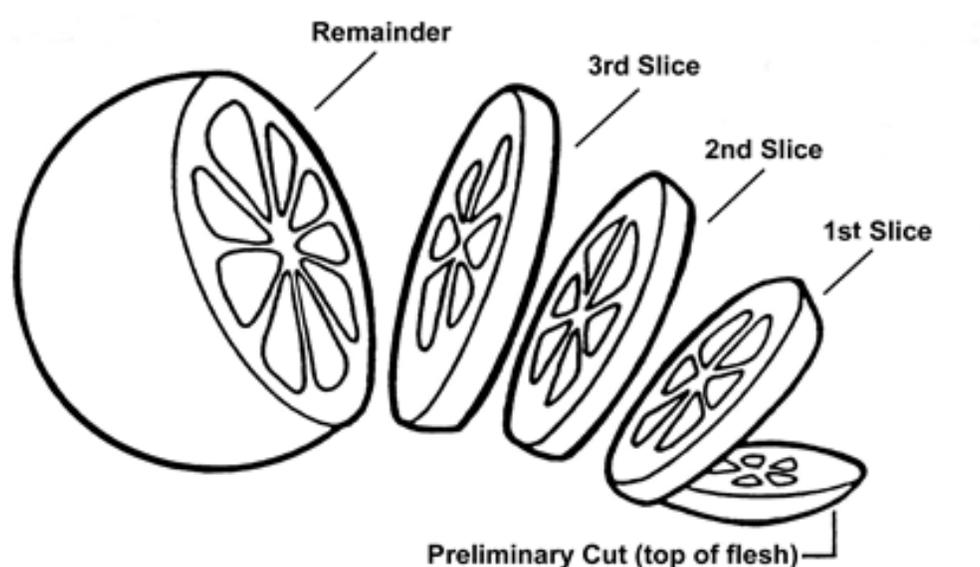
- **Shipping Point:** Do not deviate from the in-line certification sample size.
- **Market:** If sample tolerances are exceeded, the sample size must be at least doubled (50 fruit or entire contents).

CUTTING PLANS FOR INTERNAL DEFECTS



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CUTTING INSTRUCTIONS AND SCORING GUIDE FOR DRYNESS-MUSHY CONDITION



Preliminary Cut: This cut is intended to remove only the rind down to the fleshy portion of the fruit under the stem button and will vary in depth depending on rind thickness.

1st Slice: 1/4 inch in width. This slice may be totally dry or from mushy to dry in all segments. This is the maximum amount permitted in the U.S. Fancy and U.S. No. 1 grade. If the total volume of this slice is affected, any dryness-mushy condition in the remaining portion of the fruit will be considered as damage.

2nd Slice: 1/4 inch in width. This slice, plus the first slice (totaling 1/2-inch) may be totally dry or from mushy to dry in all segments. This represents the maximum volume permitted in the U.S. No. 2 grade. If the total volume of **this** slice is affected, dryness-mushy condition in the remaining portion of the fruit will be considered **serious damage**.

3rd Slice: 1/4 inch in width. This 1/4-inch slice, plus the previous two slices (totaling 3/4 inch) may be totally dry or from mushy to dry in all segments. This represents the maximum volume permitted in the U.S. No. 3 grade. If the total volume of **this** slice is affected, any dryness-mushy condition in the remaining portion of the fruit will be considered **very serious damage**.

If any portions of the segments in the slice are **not** mushy or affected by dryness-mushy condition, additional mushiness or dryness may be allowed in other portions of the fruit, but the total amount must not exceed the equivalent volume permitted. If this is encountered, it will be necessary to cut several 1/4-inch slices to determine the total amount of dryness-mushiness present in the fruit.

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TOLERANCES AND APPLICATION OF TOLERANCES

TOLERANCES

§51.628 Tolerances.

In order to allow for variations incident to proper grading and handling in each of the foregoing grades, the following tolerances, by count, based on a minimum 25 count sample, are provided as specified. No tolerance shall apply to wormy fruit.

(a) Defects.

(1) U.S. Fancy, U.S. No. 1, U.S. No. 1 Bright, U.S. No. 1 Bronze, U.S. No. 2, and U.S. No. 2 Russet.

(i) *For defects at shipping point¹.* Not more than 10 percent of the fruit in any lot may fail to meet the requirements of the specified grade: *Provided*, That included in this amount not more than 5 percent shall be allowed for defects causing very serious damage, including in this latter amount not more than 1 percent for decay.

(ii) *For defects en route or at destination.* Not more than 12 percent of the fruit in any lot may fail to meet the requirements of the specified grade: *Provided*, That included in this amount not more than the following percentages shall be allowed for defects listed:

(A) 10 percent for fruit having permanent defects; or,

(B) 7 percent for defects causing very serious damage, including therein not more than 5 percent for very serious damage by permanent defects and not more than 3 percent for decay.

(2) U.S. Combination.

(i) *For defects at shipping point¹.* Not more than 10 percent of the fruit in any lot may fail to meet the requirements of the U.S. No. 2 grade: *Provided*, That included in this amount not more than

¹ Shipping point, as used in these standards, means the point of origin of the shipment in the 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.

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5 percent shall be allowed for defects causing very serious damage, included in this latter amount not more than 1 percent for decay.

- (ii) ***For defects en route or at destination.*** Not more than 12 percent of the fruit in any lot, may 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:
 - (A) 10 percent for fruit having permanent defects; or,
 - (B) 7 percent for defects causing very serious damage, including therein not more than 5 percent for very serious damage by permanent defects and not more than 3 percent for decay.
- (iii) ***For defects at shipping point¹ and en route or at destination.*** No part of any tolerance shall be allowed to reduce for the lot as a whole, the 55 percent of U.S. No. 1 fruit required in the U.S. Combination grade, but individual samples may have not more than 15 percent less than the required percentage for the grade: ***Provided,*** That the entire lot averages within the percentage required.

(3) U.S. No. 3.

- (i) ***For defects at shipping point¹.*** Not more than 10 percent of the fruit in any lot may fail to meet the requirements of the grade: ***Provided,*** That included in this amount not more than 1 percent for decay.
- (ii) ***For defects en route or at destination.*** Not more than 12 percent of the fruit in any lot may fail to meet the requirements of the grade: ***Provided,*** That included in this amount not more than the following percentages shall be allowed for defects listed:
 - (A) 10 percent for fruit having permanent defects; or,
 - (B) 3 percent for decay.

(b) Discoloration.

- (1) U.S. No. 1, U.S. No. 1 Bright, U.S. Combination and U.S. No. 2. Not more than 10 percent of the fruit in any lot may fail to meet the requirements relating to discoloration as specified in each grade; No sample may have more than 20 percent of the fruit with excessive discoloration: *Provided*, That the entire lot averages within the percentage specified.**
- (2) U.S. No. 1 Bronze. At least 10 percent of the fruit shall have more than one-half of the surface, in the aggregate, affected by discoloration, and no part of any tolerance shall be allowed to reduce this percentage: *Provided*, That the entire lot averages within the percentage specified. No tolerance is provided for fruit showing no discoloration.**
- (3) U.S. No. 2 Russet. At least 10 percent of the fruit shall have more than two-thirds of the surface, in the aggregate, affected by discoloration, and no part of any tolerance shall be allowed to reduce this percentage: *Provided*, That the entire lot averages within the percentage specified.**

SUMMARY OF TOLERANCES

Shipping Point

	U.S. Fancy	U.S. No. 1 U.S. No. 2 U.S. Combination¹	U.S. No. 3
Discoloration			
A. Discoloration ²	N/A	10%	N/A
Defects			
B. Defects	10%	10%	10%
C. Very Serious Damage (included in B)	5%	5%	N/A
D. Decay (included in B or C for U.S. No. 3)	1%	1%	1%
E. Wormy fruit ³	0%	0%	0%

¹ At least 55 percent of the fruit, by count, must meet the requirements of the U.S. No. 1 grade.

² Discoloration is a separate tolerance and is not included in total defects for U.S. No. 1, U.S. No. 2, and Combination grades. For the U.S. Fancy grade discoloration is part of total defects.

³ There is no tolerance for wormy fruit. If any wormy fruit is found, the lot fails.

Market

	U.S. Fancy	U.S. No. 1 U.S. No. 2 U.S. Combination ¹	U.S. No. 3
Discoloration			
A. Discoloration ²	N/A	10%	N/A
Defects			
B. Defects	12%	12%	12%
C. Permanent defects (included in B)	10%	10%	10%
D. Very Serious Damage (included in B)	7%	7%	N/A
E. Very serious damage by permanent defects (included in D)	5%	5%	N/A
F. Decay (included in D or B for U.S. No. 3)	3%	3%	3%
G. Wormy fruit ³	0%	0%	0%

¹ At least 55 percent of the fruit, by count, must meet the requirements of the U.S. No. 1 grade.

² Discoloration is a separate tolerance and is not included in total defects for U.S. No. 1, U.S. No. 2, and Combination grades. For the U.S. Fancy grade discoloration is part of total defects.

³ There is no tolerance for wormy fruit. If any wormy fruit is found, the lot fails.

APPLICATION OF TOLERANCES

§51.629 Application of tolerances.

Individual samples are subject to the following limitations, unless otherwise specified in §51.628. Individual samples shall have not more than one and one-half times a specified tolerance of 10 percent or more, and not more than double a specified tolerance of less than 10 percent: *Provided*, That at least one decayed fruit may be permitted in any sample: *And provided further*, That the averages for the entire lot are within the tolerances specified for the grade.

SUMMARY OF APPLICATION OF TOLERANCES

Shipping Point

	U.S. Fancy	U.S. No. 1 U.S. No. 2 U.S. Combination¹	U.S. No. 3
Discoloration			
A. Discoloration ²	N/A	20%	N/A
Defects			
B. Defects	15%	15%	15%
C. Very Serious Damage (included in B)	10%	10%	N/A
D. Decay (included in B or C for U.S. No. 3)	2%	2%	2%
E. Wormy fruit ³	0%	0%	0%

¹ At least 55 percent of the fruit, by count, must meet the requirements of the U.S. No. 1 grade, but individual samples may have not less than 40 percent U.S. No. 1 fruit.

² Discoloration is a separate tolerance and is not included in total defects for U.S. No. 1, U.S. No. 2, and Combination grades. For the U.S. Fancy grade discoloration is part of total defects.

³ There is no tolerance for wormy fruit. If any wormy fruit is found, the lot fails.

Market

	U.S. Fancy	U.S. No. 1 U.S. No. 2 U.S. Combination ¹	U.S. No. 3
Discoloration			
A. Discoloration ²	N/A	20%	N/A
Defects			
B. Defects	18%	18%	18%
C. Permanent defects (included in B)	15%	15%	15%
D. Very Serious Damage (included in B)	14%	14%	N/A
E. Very serious damage by permanent defects (included in D)	10%	10%	N/A
F. Decay (included in D or B for U.S. No. 3)	6%	6%	6%
G. Wormy fruit ³	0%	0%	0%

¹ At least 55 percent of the fruit, by count, must meet the requirements of the U.S. No. 1 grade, but individual samples may have not less than 40 percent U.S. No. 1 fruit.

² Discoloration is a separate tolerance and is not included in total defects for U.S. No. 1, U.S. No. 2, and Combination grades. For the U.S. Fancy grade discoloration is part of total defects.

³ There is no tolerance for wormy fruit. If any wormy fruit is found, the lot fails.

NOTESHEET AND CERTIFICATE

Entries on the notesheet and certificate must be legible and accurate. Support all information appearing on the certificate with information from the notesheet. All information and notations must be properly recorded so that anyone familiar with inspection procedures can understand them and write a certificate. Notesheets and certificates are prima facie evidence and must withstand legal scrutiny.

Detailed instructions about dates, inspection points, places of inspection, types of carriers, lading, and other items not covered by these instructions may be found in the [General Shipping Point Manual](#), [General Market Manual](#), Federal-State Inspection Certificate (FV/SC-184) Handbook, or [Fresh Fruit and Vegetable Inspection Certificate \(FV/SC-300\) Manual](#). Contact your supervisor for anything not covered in these instructions.

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PRODUCT

Use the common name “Grapefruit” to describe this commodity in the product heading. Type may be reported in conjunction with grapefruit or may be reported in the “Lot ID” section on market notesheets and certificates. Do not certify variety. The variety may be reported in the remarks or other section if requested by applicant and clearly stated on cartons or containers.

Do not certify grapefruit as “Red Seedless” or “Ruby Red” or “Star Ruby” or “Foster Pink” or “Thompson Pink.” If containers are so stamped, state this under the “Products, Brand” heading on the certificate.

NUMBER/TYPE OF CONTAINERS

Always report the number of containers. In the market and at shipping point locations for stationary lot certification, always verify the container count provided by the applicant for each lot and report it as the “inspector’s count.” When the number of containers available for inspection does not match the application, confirm that the amount presented for inspection constitutes the lot. If an accurate count cannot be determined, report the count at someone else’s authority, but also report the reason for doing so on the notesheet (e.g., numerous pallets with mixed product).

At shipping point locations for “days-run” certification, the manifest for count typically provided by the applicant is acceptable to use for reporting the number of containers.

BRANDS/MARKINGS

SHIPPING POINT

Report the brand, variety, size, color, Positive Lot Identification (PLI), and other important information appearing on the container on the notesheet and certificate in the appropriate sections. When “color added” is stamped on the container or fruit, also report it under this heading.

MARKET

Report the brand, variety, size, color, count, grade, weight, point of origin, and other important information appearing on the container on the notesheet in the “Brands/Marks” section. On the certificate, report only the brand name and other pertinent information in the “Brand/Markings” section. When “color added” is stamped on the container or fruit, also report it under this heading.

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ORIGIN

Do not make a positive statement about origin on your own authority; rather, quote the container markings that list the state or country of origin in the appropriate space on the notesheet and the certificate. If origin is not marked, try to obtain this information from the applicant. This policy is necessary because some firms may use one mark on the same product packed in several states.

CONDITION OF PACK

Judge pack according to both bulge and tightness of the pack.

When Biphenyl or other treated wraps, pads or liners are specified in the contract and the inspector can definitely determine this factor without any question or doubt, report this information under the Pack heading. "Crates lined with Biphenyl liners."

Report unusual conditions, such as excessively high bulge. Some packs may have a high bulge, but the pack will be loose; flat packs may be found with the fruit tight in the box.

DESCRIPTION OF PACK

Describe condition of pack for open or unlidded container in terms of fill. For other containers, apply terms describing tightness or fill depending upon the product and types of containers.

FILLING OF CARTONS

Use the following terms to describe the filling of cartons:

Well filled: The carton is filled so that the fruit is in contact with the cover

Level full: The fruit is level with the top edge of the container.

Fairly well filled: The carton is filled so that the fruit is slightly below the top edge but no more than 1/2 inch below

Slack: The fruit is more than 1/2 inch below the top edge of the carton. This term should also be qualified by showing how much the fruit is below the top edge in inches or fraction of an inch.

TIGHTNESS OF PACK WITHIN LAYERS IN CARTONS

Use the following terms to describe the tightness of pack within the layers in the carton:

Tight: The fruit is tight enough in layers to prevent the specimens from moving materially within the package.

Fairly tight: A condition between “tight” and “loose” in which there is excess of space within the layers but not sufficient space that an additional row of fruit can properly be added.

Loose: There is sufficient space so that an additional row can properly be added to each layer within the container.

Proper description of pack requires the use of terms for both filling and tightness. For example, “Well filled, tight in layers,” “fairly well filled, loose in layers” or other combinations in accordance with the facts. Cartons that are to be certified as meeting Standard Pack must be level full at time of packing.

TIGHTNESS OF PACK WITHIN LAYERS IN WIRE-BOUND CRATES

Use the following terms in describing the tightness of pack within the layers in wire-bound crates:

Very tight: Pack is too tight and tends to cause injury.

Tight: Both pack and bulge are satisfactory.

Fairly tight: The condition between “tight” and “slack,” that is tight enough to prevent the specimens from moving within the container.

Slack: The package is not full. Also, qualify this statement by showing how much the fruit is below the level of the lid in fractions of an inch or inches.

Examples: Tight pack in most cases, many cases 1/2 inch slack to level full; Fairly tight, lids showing 1/2 to 1-inch bulge; Most cases well filled, many fairly well filled.

In determining the tightness of wire-bound crates take into consideration whether the package is on a rigid surface or whether it is resting on the ends of other crates of fruit which might permit the bottom side to become convex. This would make the crate appear slack at the top while in reality it is fairly tight.

BULGE

In reporting the height of the bulge, the measurement is the distance of the highest part of the curve of the lid above the level of the top edge of the ends of the container or the top side slats when they are flush with the tops of the ends.

STANDARD PACK

Standard Pack does not need to be determined on Market inspections unless requested by the applicant. Make certification of Standard Pack under the “Grade” heading in connection with the grade statement, but show the tightness of pack, and the uniformity of sizing, which are part of the requirements of Standard Pack, under the headings “Pack and Size.” A load may meet the requirements of the U.S. grades and not meet the requirements of “Standard Pack,” or vice versa.

§51.630 Standard Pack

- (a) Fruit shall be fairly uniform in size, unless specified uniform in size...**
- (b) “Fairly uniform in size” means that not more than 10 percent of fruit in any lot, and not more than double that amount in any sample, are outside the ranges of diameters given in Table I.**

Table 1 to §51.630 paragraph (b) – 7/10 Bushel Carton

Pack size/number of grapefruit	Diameter in inches	
	Minimum	Maximum
18	4-15/16	5-9/16
23	4-5/16	5
27	4-2/16	4-2/16
32	3-15/16	4-1/16
36	3-13/16	4-5/16
40	3-10/16	4-2/16
48	3-9-16	3-14/16
56	3-5/16	3-10/16
64	3	3-8/10

- (c) **“Uniform in size” means that not more than 10 percent of fruit in any lot, and not more than double that amount in any sample, may vary more than the following amounts:**
- (1) **32 size and smaller – not more than six-sixteenths inch in diameter; and,**
 - (2) **27 size and larger – not more than nine-sixteenths inch in diameter.**
- (d) **In order to allow for variations, other than sizing, incident to proper packing, not more than 5 percent of the packages in any lot may fail to meet the requirements of standard pack.**

CONSUMER BAGS

When consumer bags are used, even though these bags are packed in master containers, mark out the pack heading.

TEMPERATURE OF PRODUCT

Temperatures are not normally determined or reported at shipping point. However, due to the importance of the pulp temperature of fresh fruits and vegetables when in transit or at destination, it is essential that you accurately determine and report the temperature or range in temperatures on each lot. Report pulp temperature regardless of the location of the product, e.g., in the carrier, in a warehouse, or stacked on a platform.

Precool the thermometer to obtain true readings and report all temperatures to the nearest whole degree. Take a minimum of three temperatures for each lot; record the results on the notesheet. Take additional temperatures if the lot is abnormally cold or hot, or if there is a specific request for temperature. Specify the location where you took the temperature in the lot and/or load in greater detail when additional temperatures are taken.

SIZE

Size is not a requirement of the grade. A load may meet the requirements of the U.S. grades and fail to meet size. For market inspections, determine size if requested by the applicant, see the [Standard Pack](#) section.

MEASURING DIAMETER

In measuring fruit for diameter, use the greatest dimension measured at right angles to a line from stem to blossom end of the fruit. Make these measurements with a rigid jaw caliper. Turn the fruit in the caliper to make sure that the greatest dimension is obtained. Do not use pliable fruit, which has been squeezed out of shape account of tight pack, in the sample for measurement.

When performing inspections for size only, each size will be considered separately and treated as a separate lot. For detailed guidance on size, refer to the, see [General Market Manual](#).

SIZE MARKS ON CONTAINERS

Report the size marks on the containers under the “Products” heading in connection with distinguishing marks. If they are not as marked, state the facts under the “Size” heading. Use general terms in describing the extent of incorrect markings. Make the actual certification of size and count under the “Size” heading even though the size and count markings on the containers are shown under the “Products” heading.

DESCRIBING SIZE

Use the terms “fairly uniform” or “uniform” if a lot meets size requirements, “irregular” if size requirements are not met.

When it is necessary to report a size or lot as “irregular,” the number of fruit and the percentage which fails to meet the requirements of “fairly uniform” will be shown to justify the use of the term “irregular.”

BULK SHIPMENTS OR CONSUMER BAG PACKS

Request for inspection for size of bulk shipments or consumer bag packs will require the measurement of sufficient fruit to accurately determine the number of fruit below or above a specified minimum and maximum diameter. When a box size is specified, as for example, 40 size, determine the number of fruit less than 3-10/16 inches and above 4-2/16 inches in diameter. No statement of box sizes will be made on the certificate covering inspection of bulk or bagged fruit. However, the size description can be given by stating the diameter range in inches and fractions thereof. In addition, report the range and average percentage of fruit under and above the specified minimum and maximum diameters.

DEFECTS (QUALITY AND CONDITION)

Statements pertaining to freshness, maturity, shape, color, the amount and type of defects, and the amount of decay are shown under the appropriate headings.

Factors noted with **(Q)** are considered as **QUALITY** only. Quality or “permanent” defects are those that do not change during storage or shipment (e.g., shape and scars).

Report factors noted with **(C)** as **CONDITION** on market certificates. Condition defects are factors subject to change during shipment or storage (e.g., bruising, discoloration, shriveling, and decay).

Factors noted with **(Q or C)** may be considered as **QUALITY** or **CONDITION**, depending on the circumstances.

References to area or aggregate area, or length are based on a grapefruit **4-1/8 inches** in diameter. Allowing proportionately greater areas on larger fruit and lesser areas on smaller fruit.

AMMONIATION (Q)

Ammoniation, also called exanthema, is a non-parasitic nutritional disease of the fruit, leaves, and twigs of citrus trees caused by a copper deficiency. It appears as dark brown, glossy spots on the rind of the fruit which can be of various sizes and shapes. Gum pockets can sometimes be found in the albedo of thick-skinned fruit when no symptoms appear on the surface. The surface spots or scars may be pimple-like and reddish-brown, coalescing to form large roughened areas on the fruit or they may be smooth and flat, or concave and rough. The rind can become hard and stiff. Ammoniation can be mistaken for melanose. The two can be distinguished by the fact that ammoniation originates in the tissues beneath the epidermis and appear to come up through the epidermis, while melanose is on the surface of the rind.

Scoring Guide

Score any amount against the U.S. Fancy grade.

Damage: If not occurring as light speck type.

Serious damage: When scars are cracked or dark and aggregating more than a circle 3/4 inch in diameter.

Very serious damage: When aggregating more than 25% of the surface.

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BLOSSOM END CLEARING (C)

This is a physiological disorder which appears as a watersoaked, translucent, blotchy area or areas occurring mostly around the blossom end, but may also appear elsewhere. It tends to be more prominent on thinner skinned seedless varieties. It is progressive and tends to occur late in the season, particularly following heavy rains that can increase the water content of the fruit. It is frequently followed by decay.

Scoring Guide

Damage: When area affected exceeds 3/4 inch.

Serious damage: When area affected exceeds 1 inch or is discolored, or mushy.

Very Serious damage: When aggregating more than a circle 1-1/2 inches in diameter or when the underlying flesh is discolored (any shade of brown) and mushy.

BRUISING (C)

Bruising after packing occurs because of jostling and movement in slack packs, pressure from too tight a pack, or overhead weight on lower layer packages. Bruises will have soft areas that, when cut, contain mushy areas in the underlying flesh. Affected fruit may be flattened on two or more sides. If the underlying flesh is not affected, these flattened areas may regain their shape. Do not score flattened areas unless the underlying flesh is mushy.

The U.S. Standards for Grades of Grapefruit (Texas and States other than Florida, California and Arizona) require the U.S. Fancy, U.S. No. 1, U.S. No. 1 Bright, U.S. No.1 Bronze, U.S. Combination, U.S. No. 2, and U.S. No. 2 Russet grades to be free from bruises. The U.S. No. 3 grade requires the fruit not be very seriously damaged by any other cause.

Scoring Guide

U.S. Fancy, U.S. No. 1, and U.S. No. 2 grades: When any amount of segment walls are collapsed, or rag is ruptured and juice sacs are ruptured, or areas are flattened to a point where they are so sunken that they cannot be restored into their original shape.

Very serious damage: When fruit has been split open, peel is badly water soaked following bruising, or rag is ruptured and juice sacs are ruptured causing a mushy condition affecting all segments more than 3/4 inch at bruised area or the equivalent of the amount, by volume, when affecting more than one area on the fruit.

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BUCKSKIN (Q)

Fruit affected by buckskin will have slightly roughened, grayish areas of abnormally thick rind. Buckskin is caused by citrus rust mites on immature fruit which is aggravated and extended by a surface-growing fungus following the mite injury.

Scoring Guide

Score any amount against the U.S. Fancy grade.

Damage: When aggregating more than a circle 1-1/4 inches in diameter.

Serious damage: When aggregating more than 25% of the surface.

Very serious damage: When aggregating more than 50% of the surface.

CAKED MELANOSE (Q)

Melanose occurs as small brown raised spots, approximately pin head size. These spots may coalesce to form large scab-like patches known as “caked melanose”. When scattered over the fruit surface, they are scored as [discoloration](#) (speck type melanose).

Melanose spots may also appear similar to tear staining. Tear staining is a form of rust mite discoloration with a smooth, diffused appearance. When encountered, score tear staining as discoloration. Melanose is easily distinguished from this defect by its brown glazed appearance, slightly raised texture, and distinct sandpaper feel.

Scoring Guide

Score any amount against the U.S. Fancy and U.S. No. 1 grades.

Serious damage: When aggregating more than a circle 1 inch in diameter.

Very serious damage: When aggregating more than 25% of the surface.

CLUSTER RING (Q)

Cluster rings occur as one or more smooth rings and/or roughened areas of various diameters on the stem end half of the fruit. This injury is the result of rust mite or orchid trips that feed in the shaded area created where fruit are in direct contact of where a leaf and the fruit touch.

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When cluster rings occur as superficial smooth or fairly smooth areas on the fruit, report as “discoloration” and score against the discoloration tolerance.

When cluster rings do not occur as superficially smooth-fairly smooth areas on the fruit, report as “cluster ring scars” and score against the general lot tolerance.

As a guide score for the U.S. No. 2 grade, allow three fairly smooth dark brown to black halo circles, each 1-1/4 inches in diameter, which affect the appearance the same as one-half of the surface having a light shade of golden brown. Allow less diameter when the ring area is solid and more diameter when the ring area is lighter in color.

As a guide, score cluster ring scars as damage when areas are raised and very rough aggregating more than a circle 1/2 inch in diameter; raised and rough aggregating more than a circle 1 inch in diameter; raised and slightly rough aggregating more than 10 percent of the fruit surface.

Score cluster ring scars as serious damage when areas are raised and very rough, aggregating more than a circle 1 inch in diameter; raised and rough aggregating more than 5 percent of the fruit surface; raised and slightly rough aggregating more than 15 percent of the fruit surface.

Score cluster ring scars as very serious damage when raised or very rough or unsightly to the point that the appearance is very seriously affected.

When areas occur slightly raised and rough with a grayish to light brown color; which will not take a sheen after the waxing-polishing process, report as cluster ring scars and score on the following basis:

Scoring Guide

Damage: When aggregating more than a circle 1-1/4 inches in diameter

Serious damage: When aggregating more than 25 percent of the surface.

Very serious damage: When aggregating more than 50 percent of the surface.

COLOR (Q)

“Color” refers to the amount of external yellow color present. It does not relate to discoloration caused by rust mite, speck type melanose, and smooth-fairly smooth superficial scars. When determining color, judge only that part of the fruit not affected by discoloration. Color must be judged in normal daylight. Fruit appears greener under artificial light or in a poorly lighted area.

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§51.633 Well colored...the fruit is yellow or orange in color with practically no trace of green color.

§51.639 Fairly well colored...except for a 1-inch circle in the aggregate of green color, the yellow or orange color predominates over the green color on that part of the fruit which is not discolored.

§51.647 Slightly colored...except for a 2-inch circle in the aggregate of green color, the portion of the fruit surface which is not discolored shows some yellow color.

Scoring Guide

U.S. Fancy: If the fruit does not meet the definition of “well colored,” report as “Not well colored.”

U.S. No. 1: If the fruit does not meet the definition of “fairly well colored,” report as “Not fairly well colored.”

U.S. No 2: If the fruit does not meet the definition for “slightly colored,” report as “Poorly colored.”

U.S. No. 3: May be poorly colored but score when more than 25% of the surface is of a solid dark green color.

COLOR ADDED

Do not mention on the certificate the degree of color attained after a color added process. It should be reported under “Brands and Markings” if the containers are stamped color added.

COLOR OF FLESH

The color of flesh may be reported at applicants request but is not a factor of the grade. State in the remarks “color of flesh determined and reported at applicant’s request.”

Example: “Flesh mostly faded red, some red color.”

CREASING (Q) (C)

There are three citrus fruit-creasing/cracking patterns, including [flavedo](#)-splitting, inner-cracking and [albedo](#)-splitting, also called fruit creasing or pitting. This can appear as a transparent irregular pattern of the rind caused by the thickening peel.

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Creasing severity does not increase after harvest, Creases in fruit that are subjected to hot solutions, such as color added treatment, tend to become more apparent.

MARKET

Creasing is scored as a quality factor unless the fruit is color added. If the fruit or containers are marked “color added” score all creasing as a condition factor.

Scoring Guide

Damage: When materially weakens the skin, or extends over more than 1/3 of the surface.

Serious damage: When seriously weakens the skin, or extends over more than 1/2 of the surface.

Very serious damage: When very seriously weakens the skin, or is distributed over practically the entire surface.

DISCOLORATION (Q)

Use the term “Excessive discoloration” to describe discoloration which affects the appearance more than the amount permitted for the grade. Report excessive discoloration separately from other quality defects **except** in the U.S. Fancy grade.

Discoloration is defined in the standards and is based on the aggregate area of russeting of a light shade to golden brown. Discoloration of a lighter shade of color may be permitted on a greater area and darker shades of color will be restricted to a lesser area.

§51.620 U.S. Fancy...(a) Basic requirements: (1) Discoloration: Not more than one-tenth of the surface, in the aggregate, may be affected by discoloration. (See §51.638.)

§51.621 U.S. No. 1...(a) Basic requirements: (1) Discoloration: Not more than one-half of the surface, in the aggregate, may be affected by discoloration. (See §51.638.)

§51.622 U.S. No. 1 Bright...no fruit may have more than one-tenth of its surface, in the aggregate, affected by discoloration. (a) For tolerances see §51.628.

§51.623 U.S. No. 1 Bronze...all fruit must show some discoloration and at least 10 percent, by count, of the fruit shall have more than one-half of their surface, in the

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aggregate, affected by discoloration. The predominating discoloration on each of these fruits shall be of rust mite type. For tolerances see §51.628.

§51.624 U.S. Combination....the lot meets the basic requirement for discoloration as specified in the U.S. No. 2 grade. For tolerances see §51.628.

§51.625 U.S. No. 2...(a) Basic requirements: (1) Discoloration: Not more than two-thirds of the surface, in the aggregate, may be affected by discoloration. (See §51.638.)

§51.626 U.S. No. 2 Russet...at least 10 percent of the fruit shall have more than two-thirds of their surface, in the aggregate, affected by any type of discoloration. For tolerances see §51.628.

§51.638 Discoloration... russetting of light shade of golden brown caused by rust mite or other means. Lighter shades of discoloration caused by smooth or fairly smooth, superficial scars or other means may be allowed on a greater area, or darker shades may be allowed on a lesser area, provided no discoloration caused by speck type melanose or other means may detract from the appearance of the fruit to a greater extent than the shade and amount of discoloration allowed in the grade.

DISCOLORATION TOLERANCES

§51.628 Tolerances...

(b) Discoloration.

- (1) U.S. No. 1, U.S. No. 1 Bright, U.S. Combination, and U.S. No. 2. Not more than 10 percent of the fruit in any lot may fail to meet the requirements relating to discoloration as specified in each grade; No sample may have more than 20 percent of the fruit with excessive discoloration: *Provided*, That the entire lot averages within the percentage specified.
- (2) U.S. No. 1 Bronze. At least 10 percent of the fruit shall have more than one-half of the surface, in the aggregate, affected by discoloration, and no part of any tolerance shall be allowed to reduce this percentage: *Provided*, That the entire lot averages within the percentage specified. No tolerance is provided for fruit showing no discoloration.

- (3) **U.S. No. 2 Russet.** At least 10 percent of the fruit shall have more than two-thirds of the surface, in the aggregate, affected by discoloration, and no part of any tolerance shall be allowed to reduce this percentage: *Provided*, That the entire lot averages within the percentage specified.

SUMMARY OF DISCOLORATION TOLERANCES

The predominating type of discoloration on U.S. No.1 Bronze fruit shall be of rust mite type.

The predominating type of discoloration on U.S. No. 2 Russet may be any type of discoloration.

Shipping Point and Market

Grade	Surface Area Allowed	Surface Area Required	Tolerance	Sample Tolerance
U.S. Fancy	1/10	—	1	1
U.S. No.1	1/2	—	10%	20%
U.S.No.1 Bright	1/10	—	10%	20%
U.S. No. 1 Bronze ²	—	1/2	At least 10%	No less than 5% in individual sample
U.S. Combination	—	—	10%	20%
U.S. No. 2	2/3	—	10%	20%
U.S. No. 2 Russet ³	—	2/3	At least 10%	No less than 5% in individual sample

¹ Discoloration for the U.S. Fancy grade is included in the total tolerance for defects.

² For U.S. No. 1 Bronze the predominating type of discoloration on each fruit shall be of rust mite type. All fruit must show some discoloration. No tolerance shall apply to fruit showing no discoloration.

³For U.S. No. 1 Russet the predominating type of discoloration may be of any type. All fruit must show some discoloration. No tolerance shall apply to fruit showing no discoloration.

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FIRMNESS (C)

When testing for firmness, place the fruit in the palm of your hand and squeeze gently. If the fruit “bounces back” it is considered firm. Fruit with thick skin may feel soft or spongy and still be considered firm. Do not score fruit if only a particular area is affected (refer to [bruising section](#)). The entire fruit must be affected before scoring against each grade. Report as “not firm,” “not fairly firm,” or “soft.”

§51.634 Firm...the fruit is not soft, or noticeably wilted or flabby; and the skin is not spongy or puffy

§51.643 Fairly firm...the fruit may be slightly soft, but not bruised; and the skin is not spongy or puffy.

§51.649 Slightly spongy...the fruit is puffy or slightly wilted but not flabby.

Scoring Guide

U.S. Fancy and U.S. No. 1: When not meeting the requirements of firm score against the total tolerance for the grade applied and report as “Puffy.”

U.S. No. 2: When not meeting the requirements for fairly firm, score against the total tolerance for the grade being applied and report as “Badly puffy.”

U.S. No. 3: When not meeting the requirements of slightly spongy, score against the total tolerance for the grade and report as “Extremely puffy.”

If the fruit is flabby or soft, score as very serious damage against any grade.

FREEZING INJURY (Q) (C)

Fruit that is affected by freezing injury may exhibit the following characteristics:

1. Segment walls have buckled at the cross section cut near the stem end;
2. Watersoaked condition of the core;
3. Mushy condition of segments or portions of segments;
4. Dry portions of segments; and,
5. Open spaces in the pulp.

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If frozen citrus is examined several days after thawing, it will usually have a white or colorless crystalline compound (hesperidin) on the membrane that separates the pulp segments. These crystals may be visible within a few hours of freezing. Several weeks after freezing, the crystals may not be as numerous or conspicuous.

Dryness from freezing differs from granulation dryness that is attributed to tree dryness. After freezing, affected juice sacs collapse, having been emptied of juice. During granulation, juice sacs do not collapse; they become filled with gelatinous or solid matter.

If a significant freeze occurs, inspectors will be notified, by Inspection Operations, to score freezing injury as a condition defect. When it is felt that practically no additional change to the fruit will occur in transit, a second notification will be issued, instructing inspectors to score freezing injury as a quality defect.

When freezing injury is encountered, use the guidance provided in the [Sampling for Internal Defects](#) section and [Cutting Instructions and Scoring Guide for Dryness-Mushy Condition](#).

DRYNESS OR MUSHY CONDITION (Q) (C)

Depth of dryness or mushy conditions specified is for all segments at the stem-end, or the equivalent of this amount, by volume, when occurring in other portions of the fruit.

If segment membrane walls show buckling, at a cross section cut near the stem-end of the fruit, the lot should be closely examined for further injury such as:

1. Watersoaked condition of the core;
2. Mushy condition of segments or portions of segments;
3. Partly dry or dry portions of segment; and,
4. Open spaces in the pulp.

If any of the preceding conditions, or any combination of these conditions, is present and is the equivalent of more than the first 1/4 inch slice at the stem end, the fruit is damaged. Use the guidance provided in the [Sampling for Internal Defects](#) section and [Cutting Instructions and Scoring Guide for Dryness-Mushy Condition](#).

GRANULATION (TREE DRYNESS) (Q)

Do not confuse freezing injury with granulation. Granulation can occur due to variety or growing conditions not related to freezing.

Juice sacs of granulated fruit remain swollen and do not separate from each other or the segment walls. The juice is displaced by yellow to grayish-white solid matter. Affected fruit will generally feel firm, but very light in weight.

Granulation sometimes appears throughout all of the pulp of affected fruits, but more often only occurs in the upper or stem end portion. When dryness is of irregular depth in different segments, use the average depth as the basis for scoring.

Use the guidance provided in the [Sampling for Internal Defects](#) section and [Cutting Instructions and Scoring Guide for Dryness-Mushy Condition](#).

GREEN SPOTS OR OIL SPOTS (Q)

Green spots or oil spots occur as irregular shaped yellow, green, or brown spots in which the oil glands of the skin stand out because of slight sinking of the tissue between them.

Scoring Guide

Injury: When more than slightly affecting the appearance.

Damage: When aggregating more than a circle 1 inch in diameter.

Serious damage: When aggregating more than a circle 1-1/2 inches in diameter.

Never score as very serious damage.

HAIL (Q)

Hail can appear as small pits or strikes on the surface of the fruit.

Scoring Guide

Injury: When not well healed or aggregating more than a circle 3/8 inch in diameter.

Damage: When not well healed or aggregating more than a circle 1/2 inch in diameter.

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Serious damage: When not well healed or aggregating more than a circle 5/8 inch in diameter.

Very serious damage: When not well healed or aggregating more than a circle 1 inch in diameter.

MATURITY (Q)

§51.631 Mature...shall have the same meaning currently assigned that term in the laws and regulations of the State in which the grapefruit is grown; or as the definition of such term may hereafter be amended.

The standards specify that the fruit must be mature. No maturity requirements are outlined in the grades, but the fruit must meet the minimum acid ratio test according to the standards set forth in the [Texas Agriculture Code §21.21\(1\)\(A\)](#).

Minimum Ratio of Soluble Solids to Anhydrous Citric Acid Chart

Minimum Total Solids Percent	Solids to Acid Minimum Ratio
8.5	10.00 to 1
9.0	9.00 to 1
All Higher Solids	9.00 to 1

As a general policy, do not mention maturity on the certificate unless requested by the applicant. If such a request is made contact supervisor for instructions. If sampling for maturity is approved, and when a Brix (Solids)-Acid Ratio Test is performed on a lot of citrus and the lot fails account of not meeting the required brix (solids) to acid ratio, report the fact in the grade statement. For example, “Fails to grade U.S. No. 1 account maturity (brix-acid ratio).” In the “Remarks” or “Other” section of the certificate, report the brix-acid ratio that was determined.

SCAB (Q)

Scab appears as spongy, corky lesions which develop on the fruit surface. Parts of the surface may be covered by confluent lesions.

Scoring Guide

Score any amount against the U.S. Fancy grade.

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Damage: When materially detracts from the shape or texture, or aggregating more than a circle 3/4 inch in diameter.

Serious damage: When seriously detracts from the shape or texture, or aggregating more than a circle 1 inch in diameter.

Very serious damage: When aggregating more than 25% of the surface.

SCALE (Q)

Scale is an insect that measures 1.5 - 2.0 mm (0.06 - 0.08 in.) in length, has a semi-translucent, reddish-brown or reddish-grey, non-living, protective shield produced from glue-like excretions and previously-shed skins. The shield is typically flat and kidney-shaped. Grapefruit are affected by several types of scale; the most common type is the purple scale.

Scoring Guide

Injury: When more than a few adjacent to the “button” at the stem end, or more than 6 scattered on other portions of the fruit.

Damage: When aggregating more than a circle 3/4 inch in diameter, or occurring in a ring more than a circle 1-1/4 inches in diameter.

Serious damage: When aggregating more than a circle 1 inch in diameter, or occurring in a ring more than a circle 1-1/2 inches in diameter.

Very serious damage: When aggregating more than 25% of the surface.

SCARS (Q)

Scars are scored on the basis of depth and smoothness. If scars are superficial and smooth or fairly smooth, they are scored on the basis of discoloration (refer to the [Discoloration section](#)).

Scoring Guide

Injury: When depressed, not smooth, or detracts from the appearance more than the amount of discoloration permitted in the grade.

Damage: When very deep or rough aggregating more than a circle 1/2 inch in diameter, deep or rough aggregating more than 1 inch in diameter; slightly rough or of slight depth aggregating more than 10% of the surface.

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Serious Damage: When very deep or rough aggregating more than a circle 1 inch in diameter; deep or rough aggregating more than more than 5% of the fruit surface; slight depth or slightly rough aggregating more than 15% of the surface.

Very serious damage: When very deep or very rough, or unsightly so that appearance is very seriously affected.

SEED COUNT

At the applicant's request, the range and number of seeds per fruit can be certified. To determine the number of seeds, cut a composite sample of 5 or 10 fruit from each sample and report findings under the remark's sections. The number of seeds is not a grade factor.

SHAPE (Q)

The normal shape for the variety must be considered in determining the correct terms in describing shape. Certain varieties are characteristically flat while other varieties tend to be oblong in shape. A fruit of a given shape may be well formed for one variety and only slightly misshapen for another variety.

Use the following terms to describe shape:

§51.635 Well formed...the fruit has the shape characteristic of the variety.

§ 51.640 Fairly well formed...the fruit may not have the shape characteristic of the variety but is not elongated or pointed or otherwise deformed.

§51.644 Slightly misshapen...the fruit is not of the shape characteristic of the variety but is not appreciably elongated or pointed or otherwise deformed.

§51.648 Misshapen...the fruit is decidedly elongated, pointed or flat sided.

Scoring Guide

U.S. Fancy: When not meeting the requirements of well formed, score against the tolerance for permanent defects and report as "Not well formed."

U.S. No.1: When not meeting the requirements of fairly well formed, score against the tolerance for permanent defects in the grade being applied and report as "Not fairly well formed."

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U.S. No 2: When not meeting the requirements for slightly misshapen, score against the tolerance for permanent defects in the grade being applied and report as “Misshapen.”

U.S. No 3: When not meeting the requirements for misshapen, score against the tolerance for permanent defects and report as “Badly Misshapen.”

SKIN INJURY (SKIN BREAKDOWN) (C)

This defect category represents several factors that result in similar looking conditions affecting the skin. These can be drying, darkening, or sinking of the oil cells near the stem end or other places on the fruit. Stem end breakdown is a physiological condition caused by a loss of fruit moisture. Pitting is a physiological breakdown of the rind on the fruit shoulder. This contrasts with breakdown associated with aging, which occurs at the stem end. Storage pitting is another type of skin injury affecting citrus. When these, or other similar-appearing injuries occur, they will be described on the notesheet and certificate as “skin breakdown.”

Scoring Guide

Score any amount against the U.S. Fancy grade.

Damage: When aggregating more than a circle 3/8 inch in diameter.

Serious damage: When aggregating more than a circle 5/8 inch in diameter.

Very serious damage: When aggregating more than a circle 1-1/4 inches in diameter.

SOOTY MOLD (Q)

A fungus that adheres to excretions of White Fly or other insects causes this defect. It may occur as light deposits scattered over the surface of the fruit or as heavily concentrated areas at the stem end. Normal washing procedures usually do not remove all fungus deposits. It can be easily scraped with the finger or knife.

Scoring Guide

Injury: When more than slightly affecting the appearance of the fruit.

Damage: When aggregating more than a circle 3/4 inch in diameter.

Serious damage: When aggregating more than a circle 1-3/8 inches in diameter.

Very serious damage: When aggregating more than 25% of the surface of the fruit.

SPRAYBURN (Q)

Fruit affected by Sprayburn has flat, hard darkened areas on the rind. In advanced stages, surface cracking may occur. Darkened areas are usually irregularly sized and reddish to dark brown. Due to its distinctive appearance, Sprayburn is easily identified and usually graded out at the packinghouse.

Scoring Guide

Score any amount against the U.S. Fancy and U.S. No. 1 grades.

Serious damage: When hard, or aggregating more than a circle 1-1/4 inches in diameter.

Very serious Damage: When aggregating more than 25% of the fruit surface.

SPROUTED SEEDS (C)

During the latter part of the season, inspectors should cut a few specimens through the center to determine whether the seeds are sprouted. Normally the seeds do not show sprouts before the early part of March. Sprouted seeds, when present, will be treated like other condition factors.

Scoring Guide

Damage: When more than 6 seeds are sprouted, including not more than 1 sprouts extending to the rind, and the remainder averaging not over 1/4 inch in length.

Serious damage: When more than 6 seeds are sprouted, including not more than 2 sprouts extending to the rind, and the remainder averaging not over 1/2 inch in length.

Very serious damage: More than 6 seeds are sprouted, including not more than 3 sprouts extending into the rind, and the remainder averaging not over 3/4inch in length.

In determining the percentages of sprouted seeds, follow the sampling plans for internal defects outlined in the [Cutting Plans for Internal Defects](#) section.

STEM BUTTONS AND ATTACHED STEMS-LEAVES

Stem buttons and attached stem-leaves are not defects and do not mention on the certificate unless specifically requested by the applicant. Upon request, the inspector may determine the percentage of fruit with stem buttons attached/missing or with attached/missing stems-leaves. Report findings in percentages or general terms in the "Description of Products" on the SC-184 or in the "Other" section of the SC-300. Reference the applicant's request under "Remarks."

SUNBURN (Q)

Sunburn appears as a toughened area of the skin caused by exposure to intense sunlight. The area will usually have a bleached appearance or a deep yellow color and definite flattening of the fruit surface in the affected area. The yellow surface may have a brown or gray center where the surface cells have died. Flesh under the affected area will be dried out, containing little or no juice.

Scoring Guide

Score any amount against the U.S. Fancy grade.

Damage: When skin is flattened, dry, darkened or hard, aggregating more than 25% of the surface.

Serious damage: When skin is hard, fruit is decidedly one-sided, aggregating more than 1/3 of the surface.

Very serious damage: When aggregating more than 50% of the surface.

TEXTURE (Q)

Texture refers to the smoothness or roughness of skin that varies considerably with the size of the fruit and variety. Large sizes are normally rougher than small sizes for the same variety. Therefore, in reporting smooth and fairly smooth texture, the size of fruit and variety must be considered in determining the proper descriptive term. Thickness of skin can be annotated as it is closely related to texture.

Use the following terms to describe texture:

Smooth: Skin is thin and smooth for the variety and size of the fruit.

Fairly smooth: The skin is not materially rough or coarse and that the skin is not thick for the variety.

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Slightly rough: Skin is not smooth or fairly smooth but is not excessively rough or excessively thick, or materially ridged, grooved or wrinkled.

Rough: Skin is excessively rough or excessively thick, or materially ridged, grooved or wrinkled.

Scoring Guide

U.S. Fancy: When not meeting the requirements of smooth, score against the permanent defect tolerance for the grade and report as “Not smooth.”

U.S. No. 1: When not meeting the requirements of fairly smooth, score against the permanent defect tolerance for the grade and report as “Not fairly smooth.”

U.S. No. 2: When texture is more than slightly rough, score against the permanent defect tolerance for the grade and report as “Rough.”

U.S. No. 3: When having rough texture that is very seriously detracting from the appearance, score against the permanent defect tolerance for the grade and report as “Excessively rough.”

THORN SCRATCHES (Q)

Wind may cause fruit to rub against branches, twigs, thorns, or leaves, causing scratches and scars to develop. Unlike insect damage scars, this type of scar is usually superficial, and the shape or pattern of the scar may suggest the source of the abrasion.

Scoring Guide

Injury: When not slight, not well healed, or more unsightly than discoloration permitted in the grade.

Damage: When not well healed, hard concentrated thorn injury aggregating more than a circle 3/4 inch in diameter or slight scratches aggregating more than a circle 1 inch in diameter.

Serious damage: When not well healed, hard concentrated thorn injury aggregating more than a circle 7/8 inch in diameter or slight scratches aggregating more than a circle 1-1/4 inch in diameter.

Very serious damage: When aggregating more than 25% of the surface.

DECAY (C)

Decay is a free from defect and any amount is scored as very serious damage. The most common types affecting citrus include Green Mold Rot, Blue Mold Rot, Brown rot, Sour Rot, and Stem End Rot.

Scoring Guide

Always very serious damage: Free from; score any amount against the 1% decay tolerance at shipping point and the 3% decay tolerance at market.

On the certificate, report stages of decay as early, moderate, and advanced when in excess of the sample or lot tolerances (see [General Market Manual](#) for definitions).

EXAMPLE 2 – FV/SC-300 NOTESHEET (FRONT) – GRAPEFRUIT

QUALITY & COND. FULL HALF ON-SITE HOURS LOT #/PHG INSP. BY ASSIST. BY	APPLICANT NUMBER 21	A: NUMBER SIZE UNIT B: NUMBER SIZE UNIT C: NUMBER SIZE UNIT D: NUMBER SIZE UNIT	DEFECT CODES A: _____ B: _____ C: _____ D: _____	REVERSE/SUSTAINING CONTAINERS FV-300 CERTIFICATE NUMBER ACTION: _____	
CARRIER or LOT IDENTIFICATION: PREFIX: P O X X X X NUMBER: _____ STATE: _____		LOADING: Loaded- LO Pkty Unlded- PU UNLOADED- UL Lot Inspn - LI U L		INSPECTION NOTESHEET U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE FRUIT & VEGETABLE DIVISION CERTIFICATE NUMBER: GRAPEFRUIT EXAMPLE 2	
Carrier or LOT IDENTIFICATION: APPLICANT Additional Lot ID: _____ Carrier Type/ Name: _____		Inspection STARTED: m m d d y y Hour Min. A/P 0 8 1 0 1 9 0 1 0 5 P M		Inspection Completed: m m d d y y Hour Min. A/P 0 8 1 0 1 9 0 2 0 0 P M	
Refrigeration Unit: <input type="checkbox"/> ON <input type="checkbox"/> OFF Doors: <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED		Condition of Carrier: _____		APPLICANT: OLIVIA'S PRODUCE, INC. Address: HOMETOWN, NY SHIPPER: ABC PRODUCE CO. Address: ANYWHERE, TX	
INSPECTION SITE: APPLICANT'S WAREHOUSE		BRANDS/MARKS: "SUPER YUMMY" U.S. NO. 1 YUM YUM FARMS, SOMEWHERE, TX PRODUCE OF USA, STAMPED 18 OR 23 SIZE, SUPER PINK SEEDLESS			
A: PRODUCT: GRAPEFRUIT, PINK NUMBER OF CONTAINERS: 600 CARTONS INSP. COUNT: Y TEMPERATURES: 55°, 52°, 51°F		 B: PRODUCT: NUMBER OF CONTAINERS: _____ INSP. COUNT: _____ TEMPERATURES: _____ C: PRODUCT: NUMBER OF CONTAINERS: _____ INSP. COUNT: _____ TEMPERATURES: _____ D: PRODUCT: NUMBER OF CONTAINERS: _____ INSP. COUNT: _____ TEMPERATURES: _____ 			
Condition of Load & Containers: (X) STACKED ON PALLETS AT ABOVE LOCATION () INTACT THROUGH LOAD () PARTLY UNLOADED					

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EXAMPLE 2 – FV/SC-300 NOTESHEET (BACK) – GRAPEFRUIT

A				B				C				D				
Pack: F/T IN LAYERS				Pack:				Pack:				Pack: GRAPEFRUIT				
Size: F/U				Size:				Size:				Size:				
SCORESHEET				Q		Q		Q		SKB		SKB		DK		CUT
PLI Number	Other I.D.	TEMP. °F	Sample CT	D	%	SD	%	EXC DIS	%	D	%	SD	%		%	
TX-XXXXXX	18	55	36	2	6	1	3	5	14	6	17	2	6	0		1
TX-XXXXXX	18		36	1	3	0		7	19	8	22	1	3	1	3	1
TX-XXXXXX	18		36	0		0		3	8	10	28	2	6	1	3	2
TX-XXXXXX	18	52	36	1	3	0		6	17	4	11	1	3	0		1
TX-XXXXXX	23	54	46	2	4	1	2	8	17	11	24	2	4	2	4	1
TX-XXXXXX	23		46	1	2	0		9	20	6	13	0		0		1
TX-XXXXXX	23	51	46	3	7	1	2	6	13	9	20	0		0		2
TX-XXXXXX	23		46	1	2	0		8	17	9	20	2	4	1	2	1
			8		27		7		125		155		26		12	
				3		1		16		19		3		2		
								8-20		11-28				0-4		
														E		
F US N1 ACCOJNT QUALITY.																
REMARKS / RESTRICTIONS / SPI																
CARLOT Basis: \$\$\$				REPORTED TO: OLIVIA				INSPECTED BY:				<i>I Am Inspector</i>				
HOURLY Basis:				DATE: 8/10/19		TIME: 2:30 PM		<i>Inspector in Training</i>								
TRAVEL Expenses:				REQUESTED BY: OLIVIA									ASSISTED BY:			
EXPENSES:				DATE: 8/10/19		TIME: 6:00 AM										
EST. TOTAL: \$\$\$																

*U.S. Government Printing Office: 1993-339-136

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