



Laboratory Guidebook Notice of Change

Chapter new, revised, or archived: MLG 10 Appendix 2.00

Title: Glossary of Metal/Plastic Can Seam Terminology for Container Components and Defects

Effective Date: 01/10/22

Description and purpose of change(s):

This Appendix is a glossary of Metal/Plastic Can Seam Terminology for Container Components and Defects issued in association with MLG 10 Examination of Heat Processed, Hermetically Sealed (Canned) Meat and Poultry Products.

**United States Department of Agriculture
Food Safety and Inspection Service, Office of Public Health Science**

MLG 10 Appendix 2.00		Page 1 of 7
Title: Glossary of Metal/Plastic Can Seam Terminology for Container Components and Defects		
Revision: Original	Replaces: NA	Effective: 01/10/22

Appendix 2

Glossary of Metal/Plastic Can Seam Terminology for Container Components and Defects

The same terms that are used to describe an all-metal seam apply equally well to the metal end/plastic body seam.

Base Plate: Part of a closing machine which supports cans during seaming operation.

Beaded Can: A can which is re-enforced by having ring indentations around the body. The bead tends to keep the can cylindrical and helps to eliminate paneling of the can body.

Body: Principal part of a container - usually the largest part in one piece containing the sides (thus sidewall or body wall).

Body Hook: Can body portion of double seam. Prior to seaming, this portion was the flange of the can.

Bottom Seam: Factory end seam. The double seam of the can end put on by the can manufacturer.

Buckling: A distortion in a can end.

Can Size: Two systems are commonly used to denote can size:

- i. **An Arbitrary system** (1, 2, etc.) with no relation to finished dimension.
- ii. **A system indicating the nominal finished dimensions of a can;** e.g. "307 x 512." In this example, the first group of digits ("307") refers to the can's diameter and the second set ("512"), the can's height. The first digit in each set represents inches, and the next two digits represent sixteenths of an inch. Hence, the example can has a diameter of 3-7/16 and a height of 5-12/16 (or 5-3/4) inches.

Chuck: Part of a closing machine which fits inside the countersink and in the chuck wall of the end during seaming.

Closing Machine: Also known as a double seamer. Machine which double seams the lid onto the can bodies.

**United States Department of Agriculture
Food Safety and Inspection Service, Office of Public Health Science**

MLG 10 Appendix 2.00		Page 2 of 7
Title: Glossary of Metal/Plastic Can Seam Terminology for Container Components and Defects		
Revision: Original	Replaces: NA	Effective: 01/10/22

Coded End (C): The lid or end of container with the coding that includes product code and packing date.

Compound: Rubber or other material applied inside the end curl to aid in forming a hermetic seal when the end is double seamed on the can body.

Contamination in Weld Area: Any visible burn at one or more points along the side seam of a welded can. This is a major defect.

Countersink: On a seamed end, the perpendicular distance from the outermost end panel to the top seam.

Cover: Can end placed on can by packer. Also known as top, lid, packer's end, canner's end.

Cover Hook: That part of double seam formed from the curl of the can end.

Cross Over: The portion of a double seam at the lap.

Cross Section: Referring to a double seam, a section through the double seam.

Curl: The semi-circular edge of a finished end prior to double seaming. The curl forms the cover hook of the double seam.

Cut Code: A break in the metal of a can due to improper embossing-marker equipment.

Cut-Over: During certain abnormal double seaming conditions, the seaming panel becomes flattened and metal is forced over the seaming chuck forming a sharp lip at the chuck wall. In extreme cases the metal may split in a cut-over.

Dead-Head: An incompletely rolled finished seam. Also known as a skip, skid or spinner.

Double Seam: The joint between the end and the can body formed by rolling the curl under the flange (1st operation) and then pressing the metal together (2nd operation).

Droop: A smooth projection of double seam below the bottom of a normal seam. While droops may occur at any point of the seam, they usually are evident at the side seam lap. A

United States Department of Agriculture
Food Safety and Inspection Service, Office of Public Health Science

MLG 10 Appendix 2.00		Page 3 of 7
Title: Glossary of Metal/Plastic Can Seam Terminology for Container Components and Defects		
Revision: Original	Replaces: NA	Effective: 01/10/22

slight droop at the lap may be considered normal because of additional plate thickness incorporated into the seam structure.

Excessive Slivers: One or more slivers which are 1/32" or longer. This is a minor defect of welded cans.

False Seam: A seam fault where the end and body hook are not over-lapped (engaged), although they give the appearance of a properly formed seam. Also see Knockdown Flange.

Feather: Beginnings of a cut-over. See Sharp Edge.

First Operation: The first operation in double seaming. In this operation, the curl of the end is tucked under the flange of the can body which is bent down to form cover and body hook, respectively.

Flange: The flared portion of the can body which facilitates double seaming.

Flange Crack: Any crack at the flange or immediately adjacent to the weld of welded cans. This is a major defect.

Headspace: The free space above the contents of a can and the can lid.

Heavy Lap: A lap containing excess solder. Also called a thick lap.

Hook: The bent over edges of a body blank, which form the side seam lock (ii). The body and cover hooks in a double seam.

Internal Enamel: A coating applied to the inside of the can to protect the can from chemical action by the contents or to prevent discoloration. A lacquer is usually clear; an enamel is pigmented and opaque.

Jumped Seam: A double seam which is not rolled tight enough adjacent to the crossover caused by jumping of the seaming rolls at the lap.

Knockdown Flange: A seam defect in which the flange is bent against the body of the can. The cover hook is not tucked inside the body hook but lies outside of it. False seams, knockdown flanges and soft crabs are degrees of the same effect. In order to distinguish the degree of the defect, the following terminology is suggested:

**United States Department of Agriculture
Food Safety and Inspection Service, Office of Public Health Science**

MLG 10 Appendix 2.00		Page 4 of 7
Title: Glossary of Metal/Plastic Can Seam Terminology for Container Components and Defects		
Revision: Original	Replaces: NA	Effective: 01/10/22

False Seam: The cover hook and body hook are not tucked for a distance of less than an inch. Thus, it may not be possible to detect a false seam until the can is torn down.

Knockdown Flange: As above, but more than an inch in length. Body hook and cover hook in contact, but not tucked.

Soft Crab: A defect in which the body of the can is broken down and does not contact the double seam. Thus, there is a wide-open hole in the can below the double seam where the body was not incorporated into the seam.

Lap: The soldered but not locked portions of a side seam at the ends of the can body before seaming and removing the can from the chuck at completion of the operation.

Lid: See **Cover**.

Lip, Spurs or Vees: Irregularities in the double seam due to insufficient or sometimes absent overlap of the cover hook with the body hook, usually in small areas of the seam. The cover hook metal protrudes below the seam at the bottom of the cover hook in one or more "V" shapes.

Loss of Overlap: Any observable loss of overlap along the side seam of a welded can. This is a critical defect.

Loose Tin: A metal can that does not show evidence of full vacuum or appear swollen, but slight pressure reveals a looseness.

Manufacturer's End: Bottom or factory end of the container.

Mislock: A poor or partial side seam lock, due to improper forming of the side seam hooks.

Neck: The thickness of the top of the sidewall (body wall) of a plastic tub, one tenth of an inch below the junction of the flange and the sidewall.

Notch: A small cut-away portion at the corners of the body blank. This reduces droop when double seaming.

Oozier: An imperfect can which allows the escape of the contents through the seam.

United States Department of Agriculture
Food Safety and Inspection Service, Office of Public Health Science

MLG 10 Appendix 2.00		Page 5 of 7
Title: Glossary of Metal/Plastic Can Seam Terminology for Container Components and Defects		
Revision: Original	Replaces: NA	Effective: 01/10/22

Open Lap: A lap failed due to various strains set up during manufacturing operations. Also caused by improper cooling of the solder (See Weak Lap). A lap which is not properly soldered so the two halves are not properly joined.

Over Lap: The distance the cover hook laps over the body hook.

Packer's end: The lid, cover, or canner's end of the container which is applied by the packer. See **Cover**.

Paneling: A flattening of the can side. Also used to define concentric (expansion) rings in can ends.

Peaking: Permanent deformation of the expansion rings on the can ends due to rapid reduction of steam pressure at the conclusion of processing. Such cans have no positive internal pressure and the ends can be forced back more or less to their normal position.

Perforation: Holes in the metal of a can resulting from the action of acid in food on metal. Perforation may come from inside due to product in the can or from outside due to material spilled on the cans.

Pleat: A fold in the cover hook which extends from the edge downward toward the bottom of the cover hook and sometimes results in a sharp droop, vee or spur.

Pressure Ridge: A ridge formed on the inside of the can body directly opposite the double seam, because of the pressure applied by the seaming rolls during seam formation.

Pucker: A condition which is intermediate between a wrinkle and a pleat in which the cover hook is locally distorted downward without actual folding. Puckers may be graded the same way as wrinkles.

Sanitary Can: Can with one end attached, the other end put on by the packer after the can is filled. Also known as packer's can or open top can.

Sawtooth: Partial separation of the side seam overlap at one or more points along the side seam after performing the pull test on a welded side seam. This is a critical defect.

**United States Department of Agriculture
Food Safety and Inspection Service, Office of Public Health Science**

MLG 10 Appendix 2.00		Page 6 of 7
Title: Glossary of Metal/Plastic Can Seam Terminology for Container Components and Defects		
Revision: Original	Replaces: NA	Effective: 01/10/22

Seam Arrowing: A readily visible narrowing of the weld at either end of the can body. This is a major defect.

Seam Width: The maximum dimensions of a seam measured parallel to folds of the seam. Also referred to as the seam length or height.

Seam Thickness: The maximum dimension measured across or perpendicular to the layers of the seam.

Second Operation: The finishing operation in double seaming. The hooks formed in the first operation are rolled tight against each other in the second operation.

Sharp Edge: A sharp edge at the top of the inside portion of the double seam due to the end metal being forced over the seaming chuck.

Side Seam: The seam joining the two edges of a blank to form a body.

Skipper / Spinner: See **Deadhead**.

Thick Lap: See **Heavy Lap**.

Uncoded End (UC): The end of container made by the factory which does not list the product code and packing date.

Uneven Hook: A body or cover hook which is not uniform in length.

Vee: See **Lip**.

Weak Lap: The lap is soldered and both parts are together. However, strain on this lap (e.g. by twisting with the fingers) will cause the solderbond to break.

Weld Crack: Any observable crack in a welded side seam. This is a critical defect.

Worm Holes: Voids in solder usually at the end of the side seam. May extend completely through the width of the side seam.

**United States Department of Agriculture
Food Safety and Inspection Service, Office of Public Health Science**

MLG 10 Appendix 2.00		Page 7 of 7
Title: Glossary of Metal/Plastic Can Seam Terminology for Container Components and Defects		
Revision: Original	Replaces: NA	Effective: 01/10/22

Wrinkle: The small ripples in the cover hook of a can. A measure of tightness of a seam.