Closures for Metal Containers

Container Integrity - Primary Intent Of Part 9 CFR 431.2

- To prevent product adulteration due to leakage during cooling and handling after retorting.

Kinds of metal cans:

Sanitary (Open Top) Can

- **3-PIECE SOLDERED**
- **3-PIECE WELDED**
- **2 PIECE DRAWN**
- **Half-Size Seam Table Tray**

Double Seam:

- Formed by joining body of can with end
- Body flange interlocked with end curl
- Formed in two operations

The most critical measurements to a can's double seam are:

- Overlap : The degree of interlock between the body hook and cover hook

- Tightness: Degree of cover hook wrinkle after double seaming. Tightness rating indicates relative freedom from wrinkles.

Juncture Area - Location where double seam crosses welded side seam

Can Seam Defects:

First Operation Too Loose	**Broken Chuck**
Loose First/Normal Second Operation	**Excessively Tight Second Operation**
First Operation Too Tight	**Insufficient Overlap**
Tight First/Loose Second Operation	**Excessive Countersink Depth**
Short Cover Hook	**Seam Bumps**
Long Cover Hook	**False Seam**
Mushroomed Flange	**Damaged Flange and End Curl**
Loose Second Operation Seam	**Knock Down Flange**
Loose Seam	**Droop**
"Vee", Lip, or Spur	**Cocked Body**
Sharp Seam	**Cut Over**
Cutover and Fracture	**Deadhead (Spinner)**
Double Seam Skip	**Can Body Buckling**
Misassembly	**Jumped Seam Or "Jump-over"**
Cut Seam	**Fractured Embossed Code**
Swollen Can	**Panelling**
Corrosion	**Internal Can Corrosion (Pinhole Development)**
Damaged Coating	
Open Weld At Side Seam	**Dents**

Visual Inspection Requirements

- For double-seam cans, each can should be examined for gross defects such as cutover or sharpness, skidding (deadheading), false seam, droop at the crossover or lap, and condition of the inside of countersink wall for evidence of broken chuck.
- Must record the observations made and any corrective action taken.
- Additional visual closure inspections must be made immediately following a jam in a closing machine, after closing machine adjustment, or after start-up of a machine following a prolonged shutdown.
- All pertinent observations must be recorded.
- When irregularities are found, the corrective action must be recorded.

Immediate Corrective Action Required When:

- Sharp cut-overs/fractures
- Heavy cut-over at crossover
- Severe droop at cross-over
- VEES or LIPS
- False seam
- Distorted seam
- Skidding or deadheading
- Fractured code

Should Perform Teardown Examinations:

- At the beginning of production
- Immediately after severe jam
- After adjustment or changes to seaming machine

Link to a reference guide for can defects:

Microsoft Word - A Pocket Guide To Can Defects.doc (denvergov.org)

COCE (usda.gov)