Gaskets

1. PURPOSE & SCOPE

This Workmanship Standard details the workmanship acceptance criteria to be applied to L3Harris Communication Systems-West (CSW), Salt Lake City facility products.

This Workmanship Standard includes examples of Electromechanical type assemblies structured for CSW products.

2. APPLICATION

It shall be the responsibility of all personnel involved with assembly, inspection and test to ensure that all Electromechanical assembled product meets the minimum acceptance criteria during all phases of the build and test processes.

3. REFERENCE DOCUMENTS

Internal Specifications

IS-003	Workmanship Acceptability of Electronic Assemblies

Workmanship Standards Manual

WS-000	Workmanship Standards Introduction

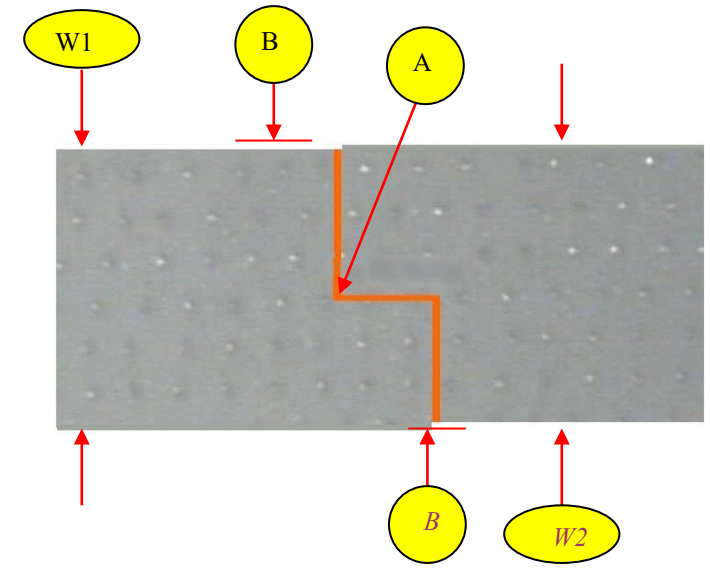
Reference Drawing

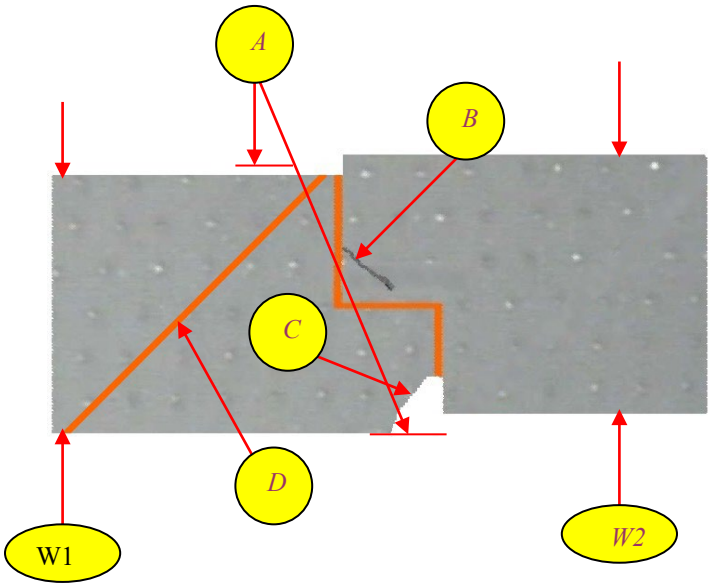
7956990	Gaskets, Shielding, RF/EMI – Installation of

4. WORKMANSHIP STANDARDS CATEGORY

4.1. Gaskets, Shielding, RFI/EMI

Note:
While most of the pictures are of Wire Mesh gasket this standard also covers all RF/EMI Shielding gaskets including but not limited to wire mesh/braid, Double – D strip, tube profile solid/hollow, angle fold and D-shape.





4.1.1
Widths Greater than 0.188 INCHES

Note:
Unless otherwise specified on the drawing, it is preferred that gaskets, where possible, be installed in their intended application without the use of an adhesive material.

Note:
Orange color represents bonding material.
"W" represents width.
"W 1" represents width of 1st gasket section.
"W 2" represents width of 2nd gasket section.

Offset Splice Acceptable

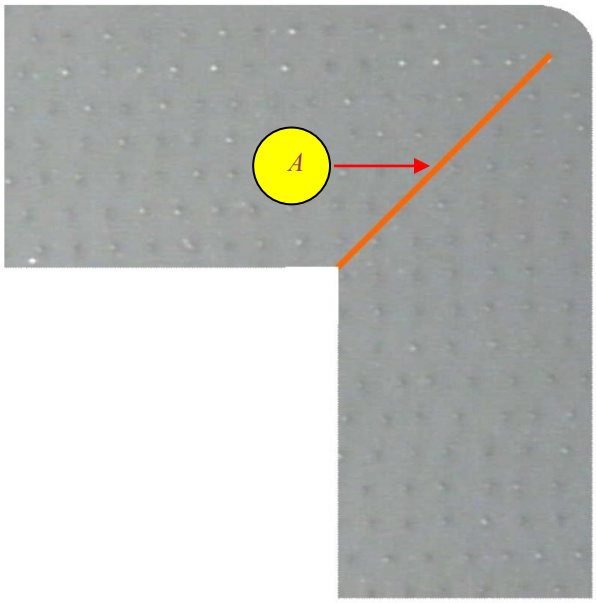
- The Offset Splice should be used for gasket materials widths greater than .188 in. The width and length of the offset (notch) should be approximately one-half the width of the gasket material and bonded together.
- The finished gasket is to have no more than one splice, excluding corners and edge splices, in any given continuous length.

A. Bond line.
B. Proper alignment of gasket sections (10% or less total mismatch).

Offset Splice Defect

A. The gasket sections being spliced are misaligned by a combined total of more than 10% of the gasket width.
B. Tear in gasket material.
C. Section of the gasket is missing.
D. More than one splice in any given continuous length.
Angle splice on gasket material .188 in. or greater.

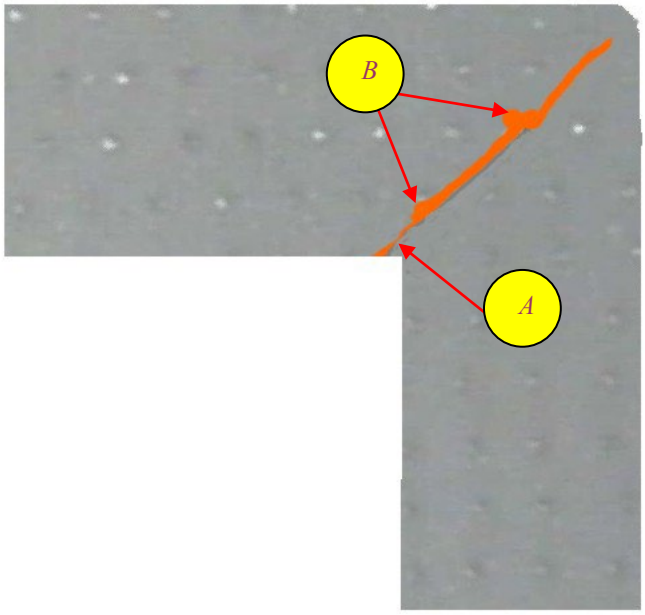
4.1.1 (cont.)
Widths Greater than 0.188 INCHES



Notched Corner Acceptable

- The Notched Corner is preferred in all applications where possible. The gasket material will be notched forming the proper bend and the faces of the notch are bonded together.

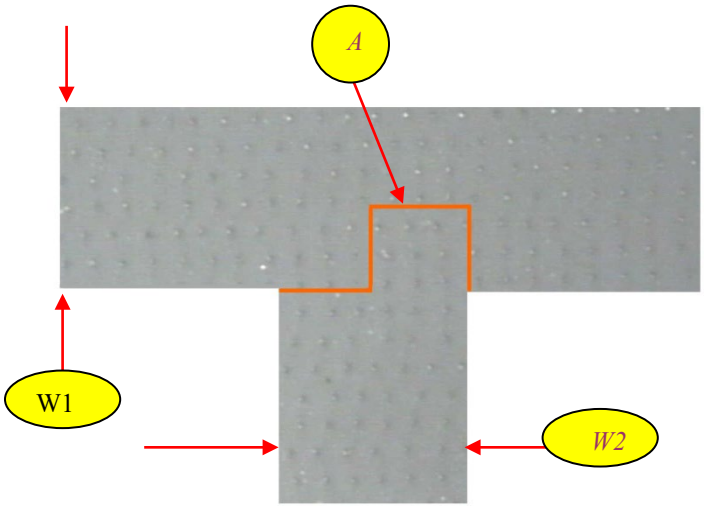
A. Bond line.



Notched Corner Defect

A. Gasket sections overlap.
B. Excessive bonding material causing lumps and/or protrusions.

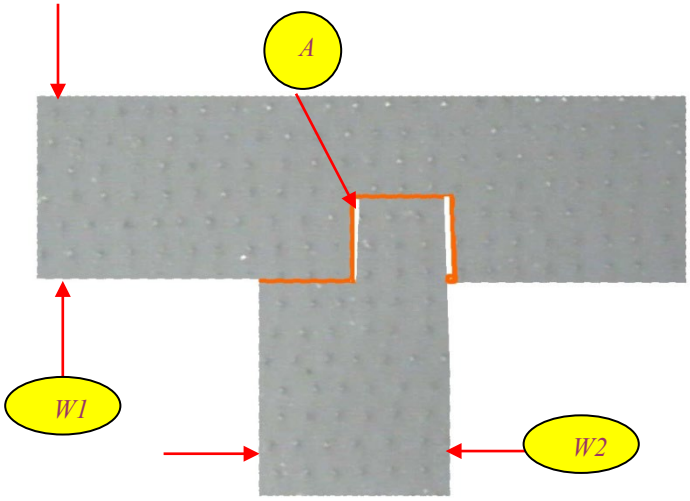
4.1.1 (cont.)
Widths Greater than 0.188 INCHES



Offset Joint Acceptable

- The Offset Joint should be used for gasket material widths greater than 0.188 in. The width and the length of the offset (notch) should be approximately one-half the width of the gasket material and be bonded together.

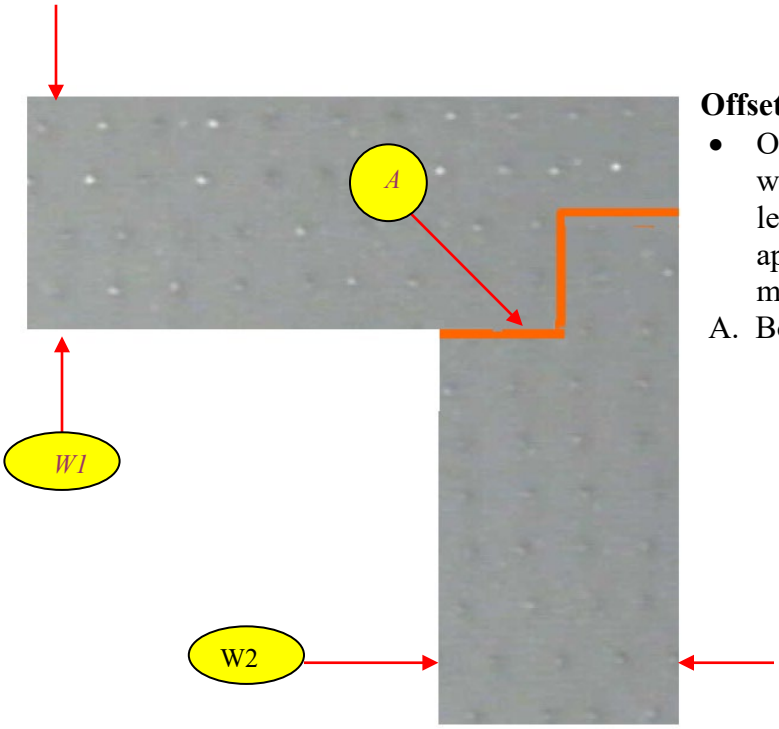
A. Bond line.



Offset Joint Defect

A. Visible separation between bondable faces.

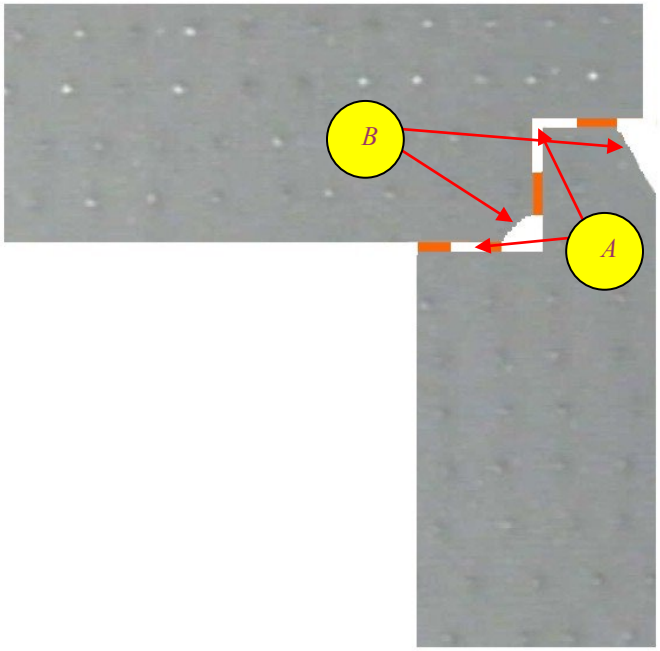
4.1.1 (cont.)
Widths Greater than 0.188 INCHES



Offset Corner Acceptable

- Offset Corner may be used on gasket material widths greater than 0.188 in. The width and length of the offset (notch) should be approximately one-half the width of the gasket material and be bonded together.

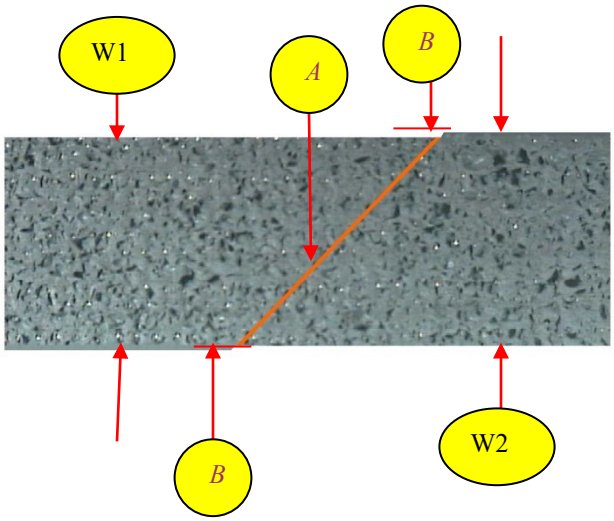
A. Bond line.

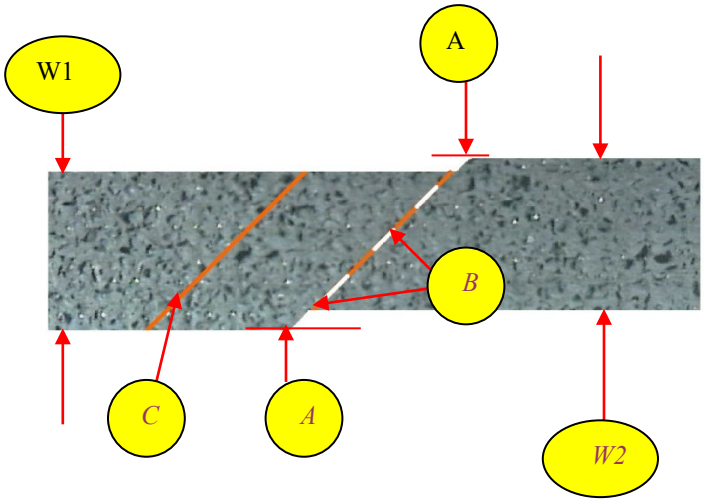


Offset Corner Defect

A. Voids, separation or gaps in the bonded faces.

B. Missing sections of gasket.





4.1.2
Gaskets .188 in. wide or less

Note:
Unless otherwise specified on the drawing, it is preferred that gaskets, where possible, be installed in their intended application without the use of an adhesive material.

Note:
Orange color represents bonding material.

"W" represents width.
"W 1" represents width of 1st gasket section.
"W 2" represents width of 2nd gasket section.

Angle Splice (Scarf Joint) Acceptable

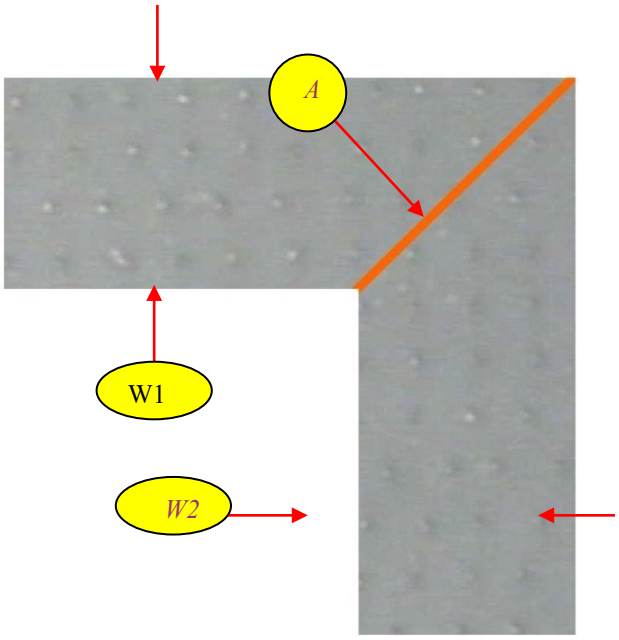
- The Angle Splice should be used for gasket material widths of .188 in. or less. The gasket material should be cut at approximately a 45-degree angle in the width dimension and the faces bonded together.
- The finished gasket is to have no more than one splice, excluding corners or edge splices, in any given continuous length.

A. Bond line.
B. Gasket edges are aligned at the splice within a total of 10% of the gasket width.

Angle Splice Defect

A. Gasket edges are misaligned more than a total of 10% of the gasket width.
B. Voids or separations in bonding materials.
C. More than one splice in continuous length.

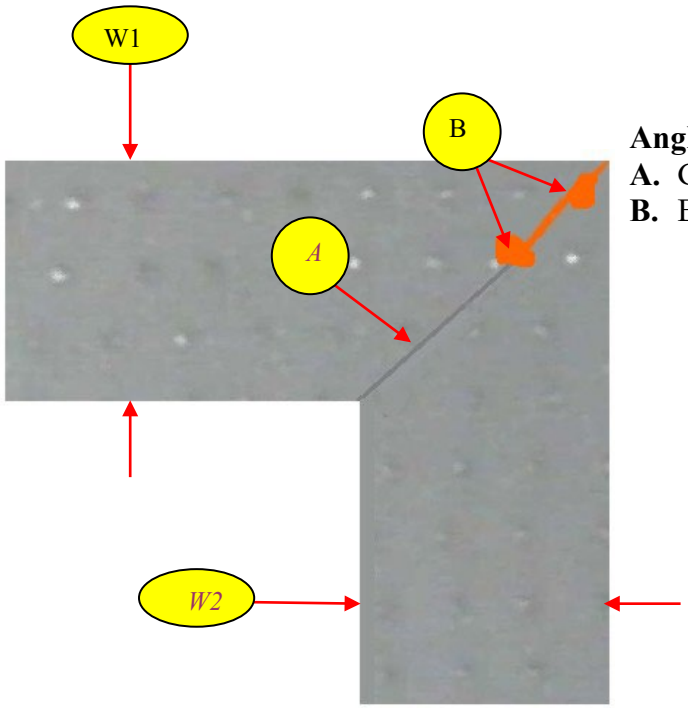
4.1.2 (cont.)
Gaskets .188 in. wide or less



Angle Corner Acceptable

- The Angle Corner should be used for gasket material widths of .188 in. or less.
- Pieces are cut at the appropriate angle and the faces are bonded together.

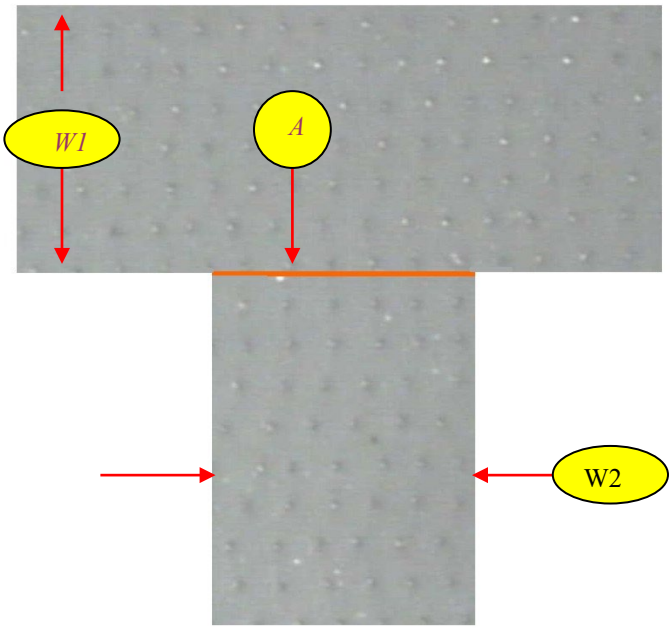
A. Bond line.



Angle Corner Defect

A. Gasket sections overlap.
B. Excessive bonding material causing lumps.

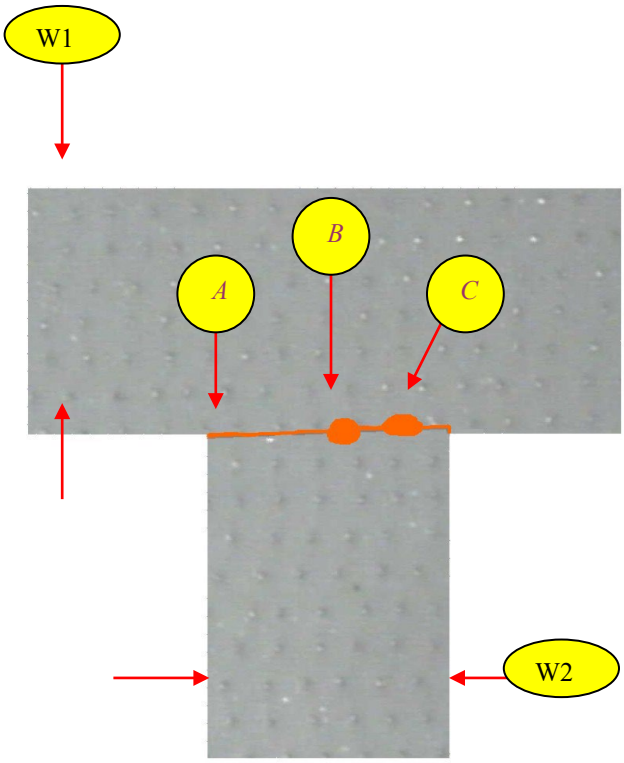
4.1.2 (cont.)
Gaskets .188 in. wide or less



Butt Joint Acceptable

- Butt Joint is used for material widths of .188 in. or less.
- The mating faces are bonded together.

A. Bond line.



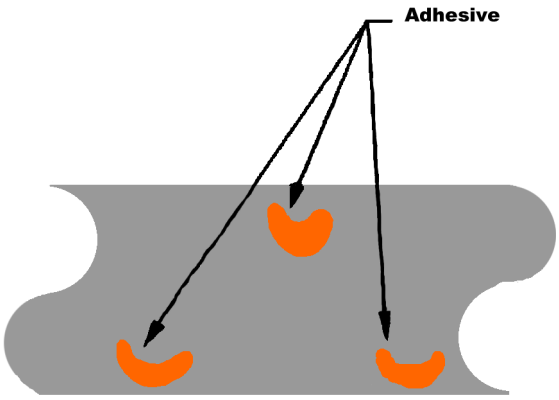
Butt Joint Defect

A. Partial bonding of joint; joint is bonded overlapping W1 gasket section.

B. Lumps and/or excessive bonding material build-up.

4.2
Gasket Installation / Bonding

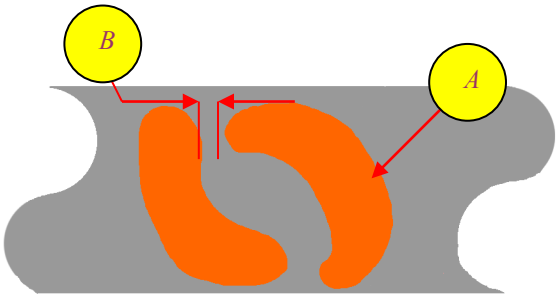
Note:
Unless otherwise specified on the drawing, it is preferred that gaskets, where possible, be installed in their intended application without the use of an adhesive material. Where no adhesive material is used, the gasket should be secured by mechanical means. Adhesives must be used if called on the drawing for parts that are removed often receive regular maintenance, such as door covers and air filters. All gasket materials should be placed such that the metal fibers, fillers, knit mesh or braid form intimate contact between the metal surfaces that the gasket fits between to insure electrical continuity between these surfaces.



Acceptable
Spot Bonding (Non-conductive adhesive)

- Adhesive is applied to the gasket in a smooth, thin spot not greater than one-third the width of the gasket.
- Spacing, of adhesive spots, is greater than .5 in. and less than 2.0 in.
  Adhesive is to be placed near the edge of the gasket material.

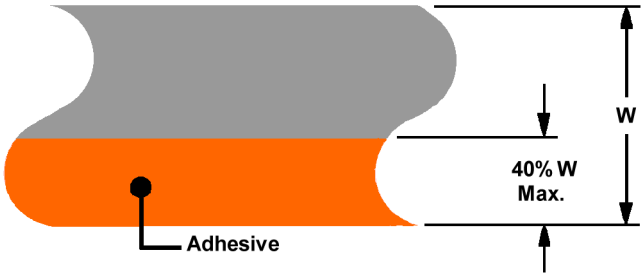
Note: Spot bonding is used with non-conductive adhesive to allow positive contact between the gasket material and the chassis.



Defect
Spot Bonding (Non-conductive adhesive)

A. Spot bond is greater than one-third the width of the gasket.
B. Spacing of adhesive is less than .5 in.
C. Spacing of adhesive is greater than 2.0 in. (not shown).

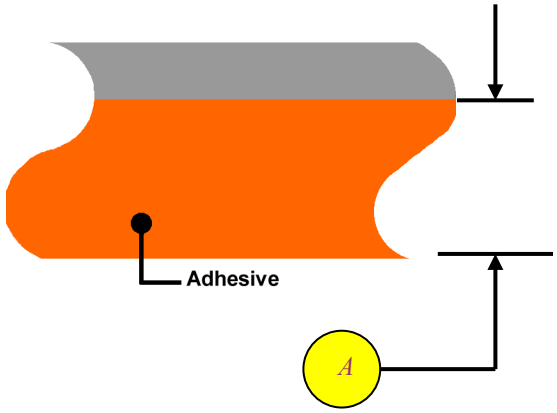
4.2 (cont.)
Gasket Installation / Bonding



Acceptable
Edge Bonding (Non-conductive adhesive)

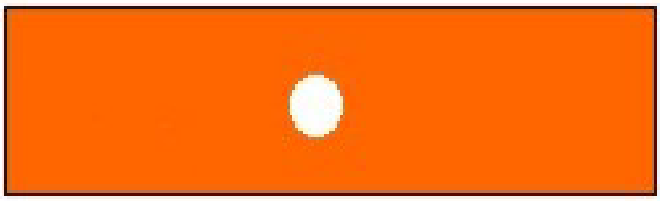
- Adhesive is applied to one edge of the gasket face not to exceed 40% of the gasket width.
- Edge bonding is preferred for wide materials and materials with a rubber edge joined to a knit or braided mesh-shielding material.
- Rubber edge is to be bonded rather than the metal portion.

Note: Edge bonding with non-conductive adhesive still allows 60% of the gasket material to make positive contact between gasket and chassis.



Defect
Edge Bonding (Non-conductive adhesive)

A. Bonding material exceeds 40% of the width of the gasket.
B. The knit or braided mesh edge of the gasket has been bonded instead of the rubber edge (not shown).

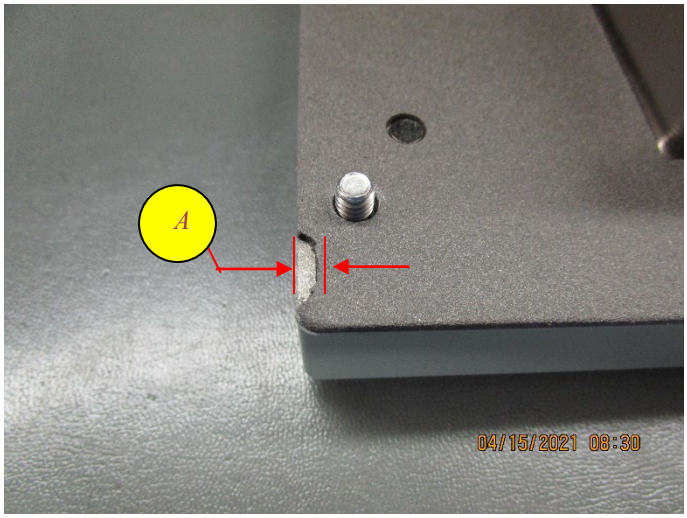


Acceptable
Gasket Bonding (Conductive adhesive)

- Electrical conductive adhesive application is preferred over complete bonding surface.

4.3
Acceptable Damage

Note:
This section is only applicable to the gaskets in PN 1000180282.

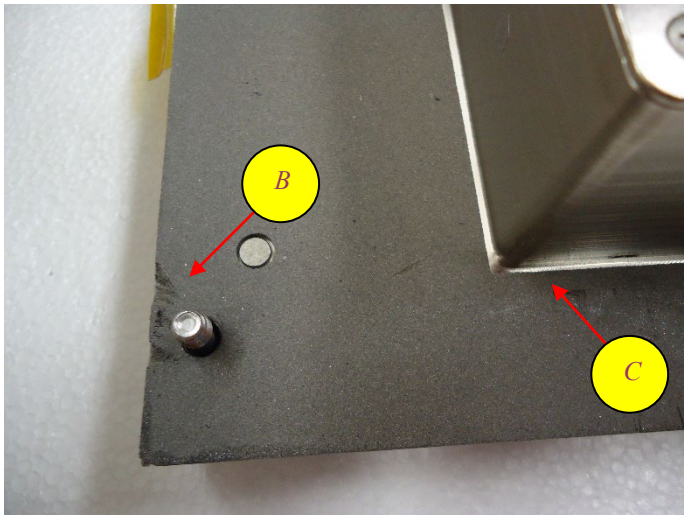


Acceptable

- There must be one inch of continuous, uninterrupted area along the inner edge of the LRU chassis (C).
- No damage should be within .5” of the screws.
- No single imperfection should exceed .5” x .5”.
- There should be no more than 3 imperfections on a single gasket.

Note:
Damage is defined as imperfections going entirely through the gasket thickness.

Examples
A. Some area on the perimeter missing. Represents damage to the gasket.
B. Tears on the edge of the gasket. Represents acceptable imperfection because it doesn’t go entirely through the thickness.
C. Inner edge of LRU chassis



5. APPLICATION

It shall be the responsibility of all personnel involved with assembly, inspection and test to examine the gasket for conformance to the requirements of this document and the 7956990 specifications.

6. QUALITY MANAGEMENT SYSTEM (QMS) RECORDS

There are no QMS records associated with this document.

7. REVIEW RESPONSIBILITY

The Workmanship Standards Focus Team shall be responsible for the review and update of this Workmanship Standard.

RECORDS

There are no records associated with this document.

END OF DOCUMENT

DOCUMENT INFORMATION

Responsible Organization:	Operations
Sub-Level function:	Workmanship Standards
Governing Document:	7956990, Reference drawing, Installation of Gaskets, Shielding, RF/EMI
Subordinate Document(s):	NA
Related Documents(s)	IS-003, Workmanship Acceptability of Electronic Assemblies WS-000, Workmanship Standards Introduction 7956990, Reference drawing, Installation of Gaskets, Shielding, RF/EMI P-200, Personal Protective Equipment
Related Training:	N/A
Approval Requirements:	MPE Supervisor
Review Requirements:	Representation from: Quality, Engineering, Mechanical Design, Electromechanical Integration, Inspection/OES, Purchase Material Quality, and Electronics Circuits

Revision History Summary:

Revision #	Reason for update/revision	Date
New - 05	Initial Release through revision 05	Various
06	Added Melbourne facility the purpose and Scope section. Removed reference to Y-001 and P-047 from section 3. Added note in section 4.1. Update title of section 4.1.1. Changed .187 to .188 in section 4.1.2. Added “(Scarf Joint)” in first paragraph of section 4.1.2. Added “approximately” in first bullet in section 4.1.2. Changed “may” to “must” in first note in section 4.2. Rewrote section 5. Updated governing document. Update list of related documents. Update review and approval requirements.	06/05/2018
NA	Update logo and proprietary	4/19/2021
07	Added section 4.3 for damage acceptability	8/12/2021
08	Removed applicability to Melbourne site from the Purpose and Scope section.	2/2/2023