

**ADHESIVE RESISTANCE TO REFLOW AND EXPULSION****Application**

This procedure is used to determine the resistance to reflow and expulsion of adhesive and sealant materials. It can be used to evaluate adhesives for exterior lighting applications.

Apparatus and Materials Required**Mechanical Convection Oven**

A mechanical convection oven capable of reaching and maintaining temperatures up to 110 +/- 2°C.

Test Panels

Test panels shall be a smooth, ungrained 101.6mm x 152.4mm x t (4"x 6"x t) plaque where t is the thickness of the substrate to be tested.

The test panel substrate must be a 40% filled Polypropylene. Suggested Ford material specifications include WSS-M4D643-B1 or WRS-M4D643-B2/B3 (or latest update) The use of another substrate agreed upon with Ford Materials Engineering.

Adhesive

Material and manufacturing recommended cure conditions.

Procedure

1. Use a straight edge to trace an easily visible line on 5 test panels (one for each cure time). Draw the line on the 152.4 mm length side of the test panel.
2. Apply a 6.0 +/- 1 mm bead of adhesive 4 +/- 2 mm from either end so that the lower edge of the bead is located directly above the trace line.

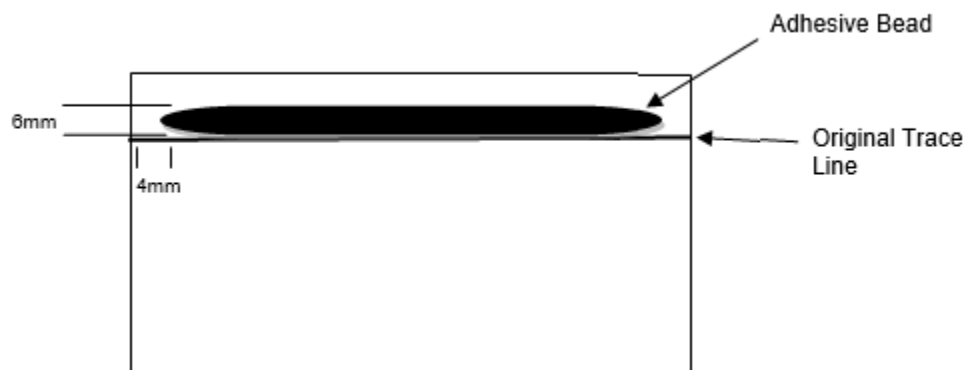


Figure 1: Schematic of the test panel layout

3. If the bead of adhesive extends below the original trace line after application, please trace the bottom of the adhesive bead onto the test panel.

Date	Action	Revisions	Rev. 0
2018 06 01	Released		



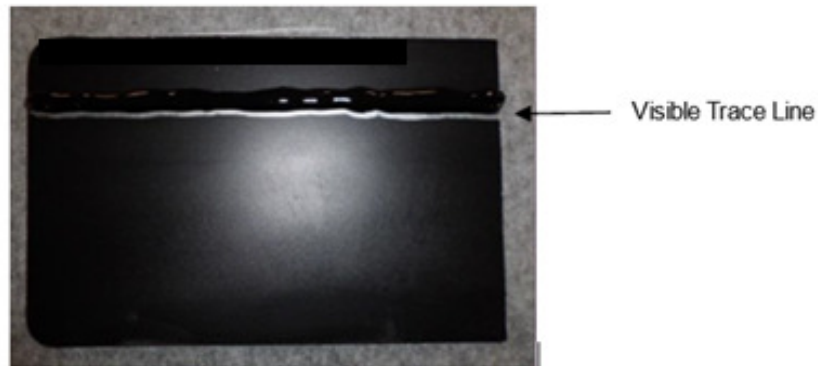


Figure 2: Example of a trace line for the adhesive bead application

4. Take photograph of each test panel labelled with the adhesive bead applied.
5. Allow the test panels to lay flat at room temperature for the following conditioning times: 15 minutes, 30 minutes, 60 minutes, 2 hours, and 24 hours.
6. After each cure time has been reached, place the test panel vertically in the test chamber.
7. Allow the test panel to dwell at 107°C +/-2 °C for 6 hours.
8. Remove test panel from the test chamber to measure and evaluate per the evaluation section.
9. Place the test panel back in the oven for an additional 18 hours.
10. Remove test panel from test chamber to measure and evaluate per the evaluation section.

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