

**WINDSHIELD CUT-OUT EVALUATION VIA
QUICK KNIFE ADHESION TEST (FLTM BU 154-01)****Application**

This procedure is used to prepare painted test unit and validate the integrity of the direct glazing system through production process conditions. Test units will be subject to evaluation via Quick Knife Adhesion Test, FLTM BU 154-01.

Abstract

Process body-in-white unit through production Paint process. Install windshield, backlite, and quarter glass, if applicable, to painted unit using production/design intent direct glazing materials and process. Evaluate integrity of bond to validate direct glazing material compatibility to production paint system.

Apparatus and Materials Required

- BIW body(s) with closure panels
- Production Paint Shop
- Production Paint Materials
- Oven Temperature Profiles
- Paint film build measuring device
- Production Glass (Windshield, Backlite, Qtr Glass)
- Production Glass installation aids
 - Masking Tape
 - "Piano Keys"
- Production Direct Glazing Materials
 - Glass Primers
 - Urethane Adhesive
- Supporting documents:
 - FLTM BU 154-01
 - AVP-T118-001

Date	Action	Revisions	Rev 01
2016 07 08	Revised	See Summary of Revisions	J. Richardson, P. Kononko, NA
2006 12 11	Activated		J. Kon, M. Mehendru



Procedure

Painted Unit Preparation Procedure:

Oven Profile for test unit (or from same production shift) shall be made available to confirm production representative processing conditions.

1. Process test unit through complete Paint Shop process
 - a. Measure film builds on glass bonding flanges/surfaces per Program specific requirements for each paint layer
 - b. Basecoat color will be determined by Paint Engineering and Material Engineering prior to build
 - c. Number of units required will be determined by Paint Engineering, Material Engineering prior to build (typically two units in two colors required)
2. Allow test unit to reach temperature equilibrium
3. Determine the longest length of time from paint shop to glass applicator cell.
4. Ensure vehicle has the longest length of time between paint shop and glass applicator cell.

Glass Installation Procedure:

1. Install production glass location aids, e.g. "piano keys" to test unit
2. Install Glass(es) to test unit. *Note: Ensure that Process Standards for direct glazing materials are followed, e.g. Do not exceed open-time of adhesive (10 min. typical) due to transport and installation time.*
 - Option A: Robotic-applied primer(s) and urethane adhesive.
 1. Abort glass(es) with primer(s) and urethane adhesive from automation cell(s)
 2. Install glass(es) to unit using manual installation process
 - Option B: Robotic-applied primer(s) and Manual-applied urethane adhesive
 1. Abort glass(es) with primer(s) from automation cell(s)
 2. Manually apply urethane adhesive to glass(es) per process/design
 3. Install glass(es) to unit using manual installation process
 - Option C: Manual-applied primer(s) and urethane adhesive
 1. Manually apply glass primer(s) to glass(es)
 2. Manually apply urethane adhesive to glass(es) per process/design
 3. Install glass(es) to unit using manual installation process
3. Apply Masking Tape to glass(es) and adjacent body sheet metal to fixture glass(es)
4. Store test unit in outdoor plant conditions and allow urethane adhesive to cure 10 to 14 days.

Evaluation Procedure:

1. Remove glass(es) using standard glass removal/replacement procedure while taking care to cut the urethane adhesive as close to glass as possible
2. Evaluate urethane adhesive bond to glass bonding flange/surfaces using FLTM BU154-01
 - a. Quantify and record (in linear inches and percentage of total bond length) any loss of adhesion of urethane adhesive to paint
 - b. Quantify and record (in linear inches and percentage of total bond length) any loss of adhesion of paint layers
 - c. Quantify and record (in linear inches and percentage of total bond length) any loss of cohesion within paint layers
 - d. Report Oven Profile and Film Build Measurements

Summary of Revisions

2016 07 08

Added items 3 and 4 to the painted unit preparation procedure

Added item 4 to the glass installation procedure