EDGE COVERAGE TEST FOR ELECTROCOAT MATERIALS

Application

This method is used to test the ability of electrocoat materials to cover sharp metal edges. The knife blade is used as a controlled surrogate edge for the sheared edges of metal stampings and the edges of punched holes. This FLTM can be used to show the difference between standard e-coat and high edge e-coat.

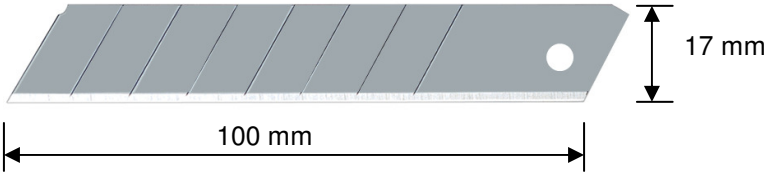
Apparatus and Materials Required

Electrocoat Bath and Coating Apparatus

Knife Blades Steel break-away knife blades

Source 1: Item # 29175
ACT Test Panels LLC
273 Industrial Drive
Hillsdale, MI 49242
www.acttestpanels.com
Phone: 1-517-439-1485

Nominal dimensions



Source 2: Equivalent blades from other sources are allowed when approved by Ford Materials Engineering.

Corrosion chamber As specified in CETP 00.00-L-467

Magnifying Microscope or Lens 30x Power

E-coat cure window from E-coat manufacturer.

Procedure

1. Clean and zinc phosphate 3 knife blades per standard process guidelines from the phosphate supplier. Visually inspect the hardened steel blade edge for phosphate coverage. Reject any blades with a shiny appearance which indicates a lack of phosphate.

Date	Action	Revisions	Rev. 02
2017 05 03	Revised	Replaced salt spray with L-467	A. Wedepohl, NA
2001 03 20	Revised	Editorial – no technical change	A. Cockman
1995 06 29			

Copyright © 2017, Ford Global Technologies, Inc.

Documents
Document Sharing Hub
Copyright Ford Motor Company
Provided by IHS Markit under license with FORD
No reproduction or networking permitted without license from IHS
Licensee=/, User=,
Not for Resale,
Full document details: FORD FLTM BI 127-01 2017

2. Electrocoat knife blades to target film build specified in the relevant material specification. If not stated the target is 25 +/- 3 microns.

3. The blades should be completely electrocoated by suspending them from the hole with a paper clip and coating them to the target film build.

4. Blades should be coated in triplicate for each variable under consideration.

5. Bake 3 blades at the minimum temperature listed for the 20 minute duration on the cure window. Total bake time should be 25 minutes unless the blades are known to require more or less time to achieve this part metal temp.

   Bake 3 blades at the maximum temperature listed for the 20 minute duration on the cure window. Total bake time should be 25 minutes unless the oven is known to require more or less time to achieve that part metal temp for the blades.

6. Visually inspect and mark any visible burrs or defects in the blade edge with a paint pen as these are potential initiation sites for corrosion formation which are unrelated to edge corrosion.

7. Blades are placed in the L-467 chamber for the Wednesday to Monday morning cycle corresponding to Showroom, high corrosively. Blades must be at 90° to the horizontal with the sharp edge straight up and totally exposed.

8. After test, rinse with D.I. water and allow to air dry. Do not wipe blades.

9. Count the number of rust spots along the sharp edge using a 30x power microscope. Report the individual and average for the three blades. Ignore rust spots at areas that were previously marked for burrs or edge defects.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.

Copyright © 2017, Ford Global Technologies, Inc.

Documents
Document Sharing Hub

Copyright Ford Motor Company
Provided by IHS Markit under license with FORD
No reproduction or networking permitted without license from IHS
Licensee=/, User=,
Not for Resale,
Full document details: FORD FLTM BI 127-01 2017