



RESISTANCE OF SEALERS/ADHESIVES TO ALKALINE CLEANER WASH CONDITIONS

Application

This method is used to determine the wash resistance of sealers/adhesives exposed to alkaline cleaner wash conditions. Typically the alkaline cleaners range between pH = 10 – 12.

Apparatus and Materials Required

Test Cabinet

Refer to Figure 1 for the example test spray tank consisting of: (1) two stage pump; (2) heater with temperature control; (3) flow-pressure control valve; (4) pressure gauge; (5) wash solution reservoir; (6) spray nozzle; and, (7) sealer/adhesive test panel.

Spray Nozzle

Whirl-Jet type, 1/8 B5 316SS
Source: Spraying Systems Co.
(Spraying Systems Midwest, Inc.)
30701 W. 10 Mile Rd., Suite #200
Farmington, MI 48336, USA
Phone: 800-957-7729
Web: www.spray.com

Alkaline Cleaner Solution

At the time of releasing this laboratory method there are three (3) suppliers that are approved to provide automotive grade alkaline cleaner products. Below are listed North American locations and contact information:

Chemetall Americas Eastern Branch
675 Central Avenue
New Providence, NJ 07974
800-526-4473

Henkel Corporation
32100 Stephenson Highway
Madison Heights, MI 48071
248-583-9300

PPG Industries, Inc. Automotive Coatings
5875 New King Court
Troy, MI 48098
248-641-2000

An appropriate Ford materials engineer should be consulted before starting adhesive/sealer evaluation to determine which alkaline cleaner product should be used for testing.

Date	Action	Revisions	Rev. 3
2013 01 28	Revised	See Summary of Revisions	E. Kopic / B. Witkowski, NA
2000 12 11	Revised	Editorial – no technical change	A. Cockman
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Test Panels

Substrates: Cold Rolled Steel, Electro Galvanized Steel, Hot Dip Galvanized Steel, and Aluminum, 100 x 300 mm panels with applied sealer/adhesive.

Procedure

A. Preparation of Test Cabinet and Panels

1. In the test tank, prepare the alkaline cleaner per supplier's technical specification.
2. Install spray nozzle for test.
3. Heat solution to test temperature of 50 +/- 2 °C.
4. Prepare a draw down sealer/adhesive bead of 30 mm x 200 mm x 1.5 mm on the panel, Figure 2. Condition panels for 2 - 3 hours at room temperature prior to testing.
5. Turn on pump motor and adjust spray pressure to 105 +/- 14 kPa.
6. Allow wash solution temperature and spray pressure to stabilize; adjust pressure control as necessary.
7. Turn off spray motor and then install test panel (23 +/- 0.5 cm distance between test panel and nozzle).

B. Test and Evaluation of Panels

1. Run test for 2 minutes time period at above conditions then turn off pump motor and remove the test panel. Rinse the test panel with cold water for 30 seconds to wash off the cleaner solution.
2. Assess the test panel for effect of cleaner solution on sealer/adhesive. Test material should be unaffected by the test, exhibiting no edge loss or displacement.
3. Report:
 - Sealer/Adhesive identification including manufacturer, part number, etc.
 - Substrate type, and any other identification.
 - Conditioning procedure for test specimens prior to testing.
 - Type of lube on the test panels, and quantity in mass per unit area (e.g. g/m², mg/m², mg/ft², etc.).
 - Photograph the test panels before and after testing. For non-expendable materials, the adhesives/sealers on the test panels can be oven cured after the testing is completed, and presented for the review.

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.