Consumer Solutions

Field Adhesion Testing for Protective Glazing Applications

DOWSIL™



Dow recommends that field adhesion testing be completed on all protective glazing applications. It is essential in these applications that the appropriate sealant bite for specific system requirements be achieved. In many cases, the bead will be a triangular fillet-type bead rather than a standard weatherseal bead. In such cases, modify the test as appropriate for the design being considered.

In this application, the sealant is a single component of a multi-component system. This adhesion test procedure only verifies the adhesion of the sealant to the window frame materials and protective film, and should not be substituted for overall system performance testing. This type of statement or positioning should be included in all corresponsdence relating to field adhesion testing in protective glazing applications.

Standard Field Adhesion Test

The field adhesion test is a simple screening procedure that may help detect application problems such as improper cleaning, use of improper primer, poor primer application or improper joint configuration. As a check for adhesion, a simple hand pull test is required at the job site after the sealant is fully cured (usually within 7 to 21 days). Field adhesion testing should be documented using the Field Adhesion Testing Log. It is suggested that five tests for the first 1000' (300 meters) and one test per 1000' (300 meters) thereafter be submitted or one test per floor per elevation. The hand pull test procedure is as follows:

a. Make a knife cut across the joint.

b. Make cuts along each side of the joint approximately 3" (75 mm) long.

c. Place a 1" (25 mm) mark on the sealant tab as shown in the illustration.

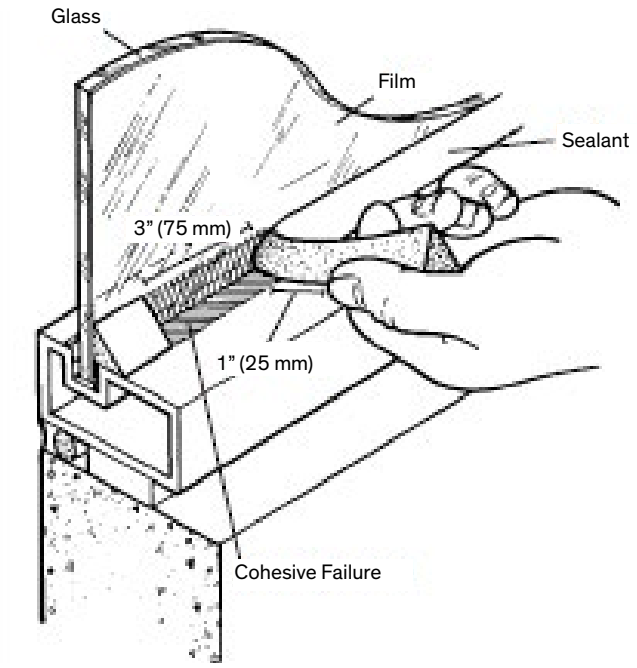
d. Grasp a 2" (50 mm) piece of sealant firmly just beyond the 1" (25 mm) mark and pull at a 90° angle.

e. If dissimilar substrates are being sealed, check the adhesion of sealant to each substrate separately. This is accomplished by extending the cut along one side of the joint, checking adhesion to the opposite side, and then repeating for the other surface.

f. Pass/fail criteria for each sealant are shown in the table on the next page. If the sealant does not pass according to the guidelines provided, consult your local Dow Project Manager or Distributor Representative.

g. Inspect the joint for complete fill. The joint should not have voids, and joint dimensions should match those shown in the weathersealing details (see "Joint Design" in the *Dow Americas Technical Manual*, Form No. 62-1112). Your Dow Project Manager can assist in determining when corrective action is required.

h. Record the test results in a Field Adhesion Testing Log. An example is provided later in this section. This log will need to be retained as a part of Dow's warranty procedure. Some building officials may also require it.



Field Adhesion Test – Weatherseal Joint

NOTE: When a sealant is used to weatherseal between two dissimilar substrates, the sealant adhesion to each side of the joint should be individually tested. (See step e.)

Field Adhesion Hand Pull Test Criteria

DOWSIL™ Building Sealant	Adhesion Requirements
DOWSIL™ 795 Silicone Building Sealant	Cohesive failure: no adhesion loss
DOWSIL™ 995 Silicone Structural Sealant	Cohesive failure: no adhesion loss

Sealant Repair in Adhesion Test Area

Repair the sealant pulled from the test area by applying new sealant to the test area. Assuming good adhesion was obtained, use the same application procedure to repair the areas as was used to originally seal it. Care should be taken to ensure that the original sealant surfaces are clean and that the new sealant is in contact with the original sealant.

Documentation

A suggested log is provided on the following page. In the event of a warranty claim or inspection, it must be available for review by Dow and/or the local building official.

Therefore, it is suggested that logs be kept together with the project files. A hard-cover logbook may be preferential to copies of the logs suggested here. A quality assurance engineer should be responsible for documenting these data on a job-to-job basis. All curtainwall units must be numbered so the sealant installation dates, sealant lot numbers, and quality assurance testing can be obtained from the project log.

Dow will be happy to assist you during the implementation of this quality control program. If you have any questions, contact your local Dow Project Manager.

Field/Shop Adhesion Testing Log

Project								
Sealant								
Sealant Lot #/Color								
Primer (if applicable)								
Date Applied	**Applied by (initials)**	**Test Date**	**Test Location (Elevation, Unit Number, etc.)**	**Primed (Y/N) Primer Lot#**	**Sealant Color and Lot #**	**Acceptable Joint Fill (Y/N)**	**Acceptable Adhesion (Y/N) and % Elongation**	**Comments Tester Initials**

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow's sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

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