



Adhesive Primer Time Link-Up Test, Stationary Glass

1 Scope

This standard describes a test procedure to determine the length of time necessary for a specific primer or adhesion promoter to link-up and/or cure to specific substrates.

1.1 Material Description. Primer or adhesion promoter.

1.2 Symbols. Not applicable.

1.3 Applicability. Primers intended to be tested under this procedure will generally be used for, but not restricted to, glass bonding adhesive system applications, e.g., Body Primer on painted metal, Glass Primer on glass or Ceramic Enamel (blackout) on glass, primer on Polyvinyl Chloride (PVC) encapsulated glass. Primers and substrates may also pertain to other trim bonding such as metal and plastic trim panels, appliques and moldings.

1.4 Remarks. This method may involve hazardous materials, operations and equipment. This method does not intend to address all the safety problems associated with its use. It is the responsibility of the user of this method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW3059

GMW14270

GMW14829

2.3 Additional References. None.

3 Requirements

3.1 Requirements on Test Specimens. Not applicable.

3.2 Equipment Required.

3.2.1 Test substrate based upon candidate primer. All test panel dimensions and materials are to be defined in the associated report.

3.2.2 Appropriate candidate primer.

3.2.3 Draw down bar capable of applying a 125 μm wet film thickness.

3.2.4 Razor knife.

3.2.5 Roll of 25 mm wide tape (Permacel Number 99, 3M8981, 3M898 or equivalent).

3.2.6 Clock or suitable timer.

3.3 Test Procedure.

3.3.1 Apply a 125 μm $\times$ 60 mm $\times$ 250 mm wet film of primer to the center of the painted test panel. Use a draw down bar capable of applying a 125 μm wet film thickness.

3.3.2 After five (5) minutes at 23 $^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and 30% Relative Humidity (RH) (record actual temperature and relative humidity), cut an X into the primer film with the razor knife. Ensure that the razor knife also penetrates the test substrate under the primer film. The area of the X should fill a rectangle of approximately 25 mm² $\times$ 60 mm². Reference, GMW14829, Tape Adhesion Test for Paint Finishes.

3.3.3 Apply a strip of 25 mm wide tape transversely to the primer film directly over the X-scribe. Allow an additional 75 mm to 100 mm of tape on one side to provide a loose tail to grasp when removing the tape. Use firm finger pressure to be slicked down/wet-out tape over the X in order to achieve intimate contact with the primer film.

3.3.4 With the test substrate secure, immediately pull the tape from the panel at an approximate 90 degree angle with a firm, jerking motion. Record the amount of primer that is pulled off the panel on the tape. The amount removed should be approximated based upon the relation to the rectangular area created around the X. Report the amount as a Percent (%) relative to this rectangular area.

3.3.5 The steps in 3.3.2 through 3.3.4 shall be repeated at 15 minute intervals from time zero (0) until the primer no longer peels from the test substrate. The time it takes for the primer to no longer be peeled from the test substrate is recorded and reported as the link-up time.

3.4 Report. Report the following data (3.4a through 3.4d):

- a. Candidate primer material with material supplier name, product code, lot number and expiration date.
- b. Test substrate to include number and size of panels. Define all layers of coated/painted panels.
- c. Amount of primer pulled off the panel on tape as a percentage related to the X rectangular area.
- d. Time to complete link-up when 100% adhesion of the primer is achieved.

4 Manufacturing Process

Not applicable.

5 Rules and Regulations

5.1 Legal Regulations. All materials must satisfy applicable laws, rules, regulations and recommendations valid in the country of usage.

5.2 Language. In the event of conflict between the English and domestic language, the English language shall take precedence.

5.3 Inspection and Rejection. Samples of components or materials released to a GM material specification shall be tested for conformity with the requirements of this material specification and approved by the responsible Engineering department prior to commencement of delivery of bulk supplies.

A new approval must be received for any changes, e.g., properties, manufacturing process, location of manufacture, etc. If not otherwise agreed, all testing and documentation normally required for initial release must be completed.

It is the responsibility of the supplier to inform the customer in a timely manner, without solicitation, and to include documentation of all modifications of materials and/or processes and to apply for a new release.

5.4 Material Safety Data Sheets/Safety Data Sheets (MSDS/SDS). For new product submissions, or when a change in chemical composition of an existing product has occurred, a complete copy of the Material Safety Data Sheet/Safety Data Sheet must be submitted in compliance with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) requirements or other country-specific MSDS/SDS requirements.

5.5 All materials supplied to this standard must comply with the requirements of the International Material Data System (IMDS) and GMW3059, **Restricted and Reportable Substances**.

6 Approved Sources

Materials supplied to this specification must be approved by General Motors.

The appropriate GM Materials Engineering Department (Product Engineering or Manufacturing Engineering) must confirm materials as meeting the requirements of this specification. Only materials/sources listed in the GM Materials Approved Source List under this standard number have been qualified by Engineering as meeting the requirements of this standard.

Engineering qualifications of an approved source are required for this standard. Only sources listed in the GM Materials File (i.e., GM SupplyPower) under this standard number have been qualified by engineering as meeting the requirements of this standard. To access this list, reference GMW14270 for latest location.