



Partial Car Covers, Non-Woven Fabric Generic Qualification

1 Scope

1.1 Material Description. Materials qualified to this standard must meet the performance shown in Appendix A, Table A1. Suppliers must demonstrate the technology as being production capable to reduce undue risk prior to release in a production facility. Any material development issues, such as chemical or performance values that fall outside of specified ranges, shall be discussed with the appropriate material engineer for resolution. Material must successfully complete a production trial in a target facility prior to release for other facilities.

1.2 Symbols. Not applicable.

1.3 Applicability. This standard covers the requirements for non-woven fabric designed to protect exterior paint from damage caused by iron particles that fall on the vehicle during rail shipment and other environmental damage. These covers use a self-adhesive tape along edges and corners. It is applied at ambient temperatures on clean, dry surfaces.

This standard applies to covers designed to protect painted surfaces on finished vehicles.

1.4 Remarks. See 5.1 and 5.2.

2 References

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

2.1 External Standards/Specifications.

ASTM D6862 SAE J2527

2.2 GM Standards/Specifications.

GMW3002	GMW3059	GMW14729	GMW16170
GMW3008	GMW14270	GMW14873	GMW17024
GMW3011			

2.3 Additional References.

 None.

3 Requirements

The non-woven fabric color should be white or other if deemed acceptable by the approving region. Trimming shall be demonstrated. The adhesive tape must not transfer or disturb the paint film. There shall be no damage to any current production paints or to any other components of the vehicle (i.e., glass, rubber, plastics, etc.,) from contact with the properly applied partial cover.

3.1 Initial Submission Requirements. As part of the initial submission package, the following information shall be provided.

3.1.1 Complete material identification by code, batch, general chemical composition and physical description.

3.1.2 Material Safety Data Sheets.

3.1.3 Cover thickness range and the recommended method for measuring the film for testing and quality control.

3.1.4 Supplier shall provide detailed application and removal instructions. Ease of application and removal shall be demonstrated by the manufacture.

3.1.5 Provide the minimum thickness of the non-woven fabric. Adhesive tape specified can be 50 µm minimum thick. For the adhesive tape, there shall be no transfer of adhesive to the paint upon removal of the protective cover.

3.1.6 Material disposal requirements and all other health and safety concerns/control methods.

3.1.6.1 Health and Safety. The non-woven fabric shall meet all local and federal standards.

3.1.6.2 Prohibited Ingredients. Silicone and Benzene.

3.2 Physical Requirements.

3.2.1 Chemical Fingerprint. GM may conduct analysis of the materials supplied to this specification. Analysis may also be performed on representative panels. The analysis established for initial approval shall constitute a reference standard and shall be part of the submission package. Information on the technology's ingredient formulation ranges and key manufacturing control characteristics shall be provided as part of the submission package. If a product change is proposed that is outside the technology formulation limits, the responsible engineer shall be notified. All ingredient ranges, key manufacturing control limits, and certificate of analysis ranges must pass standard gage repeatability and reproducibility requirements.

3.2.2 Delivery Documentation. The supplier shall be responsible for submitting a certificate of analysis with each batch of material arriving at the point of use.

3.2.3 Mini-Submissions. Some approvals will require mini-submissions when only minor changes are made to previously approved cover materials. Tests may be added or deleted according to the type and amount of material modifications. These shall be determined prior to testing by agreement between the supplier and responsible engineers.

3.2.4 Sample Size. The number of samples for each test shall be one (1), unless the responsible engineer and the supplier agree on a different number for specific tests, prior to the start of testing. All substrates, pretreatments, and coating layers shall be fully identified with source, product code, batch number, bake description and film build.

3.2.5 Storage Requirements. The materials approved to this standard shall be stable for 365 days, at 10 °C to 30 °C (50 °F to 85 °F), as defined by the ability to pass all initial test requirements after 365 days storage in the application facility (i.e., assembly plant). If there is any disagreement with these requirements, the supplier must contact the responsible engineer.

3.3 Processing Requirements. The application temperature shall be > 15 °C (> 60 °F). Application surface must be clean and dry.

3.4 Performance Requirements. The partial cover system, which is defined as both the fabric and the combination of fabric and adhesive, must meet the requirement of this standard. Fabrics used in the construction of the partial cover shall be approved to GMW17024.

3.4.1 Test panels will have two (2) film strips per panel (see Figure 1 for example), one to be removed and evaluated by the test laboratory and one to be removed and evaluated by the responsible engineer. Alternative sample preparation shall be agreed upon with the responsible engineer. There shall be no cracking, paint swelling, hazing, discoloration, distortion, or adhesion loss to the paint finish or pronounced edge effects caused by the partial car cover. The degree of protection is measured by a subjective scale.

Where:

- Zero (0) = No effect (etching) from contaminants.
- One (1) = Trace/slight effect.
- Two (2) = Moderate effect.
- Three (3) = Pronounced/severe effect.

3.4.1.1 Reversibility of Damage. All tests outlined in 3.4.

- If necessary, 24 h ± 1 h at Room Temperature.
- If necessary, 2 h ± 5 minutes at 60 °C ± 3 °C (140 F ± 5 °F).
- If necessary, 30 minutes ± 5 minutes at 80 °C ± 3 °C (176 °F ± 5 °F).