



Repair Procedure for SMC

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. This procedure describes the requirements of repair systems for Sheet Molding Compound (SMC).

1.2 Applicability. Parts made with SMC.

1.3 Remarks. All materials supplied to this standard must comply with GMW3059, **Restricted and Reportable Substances**, including the requirement to submit a full material composition disclosure to GM via the International Material Data System (IMDS).

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

9984434 GMW3059 GMW17892

2.3 Additional References.

Varnish Makers and Painter (VM&P) naphtha available at www.kleanstrip.com/product/vmp-naphtha

3 Resources

3.1 Facilities. Material test laboratory.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.2 Equipment.

3.2.1 Varnish Makers and Painter (VM&P) naphtha.

3.2.2 Clean white cheesecloth.

3.2.3 Sander.

3.2.4 Three Hundred Twenty (320) grit paper.

3.2.5 Mechanical pencil.

3.2.6 Clean air line, oil free.

3.2.7 Procedure 1 Only. See 4.3.1.

3.2.7.1 Filler, body, 2-component polyester.

3.2.8 Procedure 2 Only. See 4.3.2.

3.2.8.1 Adhesive, 2-component, Epoxy.

3.2.9 Procedure 3 Only. See 4.3.3.

3.2.9.1 Epoxy Coating per GMW17892.

3.2.10 Small roller pan (optional).

3.2.11 Firm roller.

3.3 Test Vehicle/Test Piece. Any non-structural SMC panel.

3.4 Test Time.

Calendar time: 0.5 d

Test time: 4 h

Coordination time: 1 h

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Laboratory competency and familiarity with epoxy usage and SMC handling.

4 Procedure

4.1 Preparation. See individual procedures in 4.3.

4.2 Conditions.

4.2.1 Environmental Conditions. Test at laboratory ambient or as described in the individual procedures in 4.3.

4.2.2 Test Conditions. Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

4.3 Instructions.

4.3.1 Procedure 1. Used for the cosmetic repair of scratches, gauges, large pits, chips, etc. using a 2-component polyester body putty.

4.3.1.1 Wipe defect area with VM&P naphtha and cheesecloth. Dry off with clean dry (oil free) compressed air for 20 s.

4.3.1.2 Use filler, body, 2-component polyester. A ratio color chart should be developed so that operators can validate correct mixing techniques.

4.3.1.3 Apply repair material with a flexible plastic applicator into defect from two (2) directions using medium to hard hand pressure to displace air trapped in the defect.

4.3.1.4 The final coat of repair material should have a thin (< 1 mm) layer of material covering the defect area.

4.3.1.5 The material at the proper ratio will cure in 5 minutes at 25 °C. If a heat gun is used, sanding should not be started until the defect area is at room temperature (never sand hot).

4.3.1.6 Sanding of repaired area must be done with 320 grit paper. If an orbital sander is used, caution should be taken to not tip the sander.

4.3.2 Procedure 2. Cosmetic repair for very small pits and scratches that require a less viscous material to flow in and seal using a 2-component epoxy material.

4.3.2.1 Wipe the defect area using VM&P naphtha and a cheesecloth. Dry off with clean dry (oil free) compressed air for 20 s.

4.3.2.2 Use adhesive, 2-component, epoxy material.

4.3.2.3 Heat defect area to approximately 80 °C and apply adhesive to defect area. The lower viscosity of the epoxy provides better penetration into the defect area.

4.3.2.4 A final coat of approved epoxy material should be spread over the defect and heat cured at approximately 105 °C for 15 minutes.

4.3.2.5 After the panel has cooled to room temperature, sand with 320 grit paper. If an orbital sander is used, caution should be taken to not tip the sander.

4.3.3 Procedure 3. Edge sealing of SMC. This is required in areas of the part where there are reversed shears in the tool, or excessive sanding occurs during deflashing operations.

Note: Use rubber gloves and work in a well ventilated area while performing this procedure.

4.3.3.1 Blow dust off the edge to be air sealed using clean dry (oil free) compressed air.