



Multi-Piece Applique Retention Test

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. The purpose of this procedure is to determine if a multi-piece applique meets the retention requirements of the Subsystem Technical Specification (STS).

1.2 Applicability. This test procedure is to be used for multi-piece appliques which utilize snap attachments between the Class A and Class B part (see Figure 1).

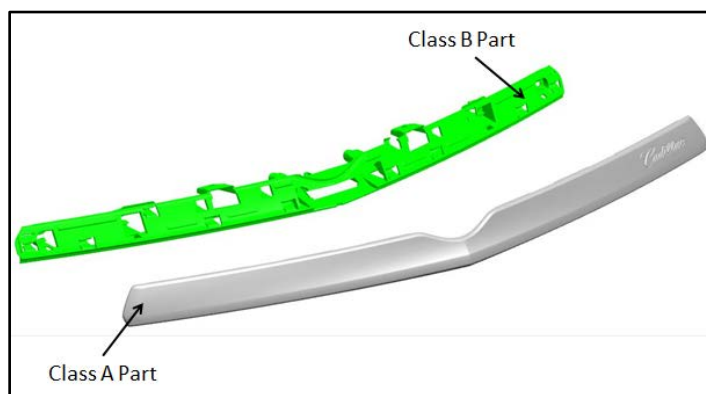


Figure 1: Example of Multi-Piece Applique

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW3221

3 Resources

3.1 Facilities.

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.

Note: The following items are typically required to perform this test. Other equipment may be substituted at the discretion of the testing facility as long as it provides the same data with equivalent accuracy and is approved by the requesting GM Engineer.

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3.2.1 Fixture.

3.2.1.1 Test Supports. The test part must be securely fastened to supports that represent part attachment to the vehicle. If available, the mating sheet metal may be used to support the part during test.

3.2.2 Instrumentation.

3.2.2.1 Tension Tester. Tension tester with > 250 N load capability.

3.2.2.2 Handheld Force Gauge. A handheld force gauge with > 250 N load capability may be used if approved by the design release engineer (DRE) and subsystem validation engineer (SVE). In cases where the handheld force gauge is used, pull as slowly and consistently as possible to minimize variation.

3.2.2.3 Force Recording Equipment. Force recording equipment with > 250 N capability.

3.2.2.4 Tension Tester Attachments.

3.2.2.4.1 A hook attachment is required for the pull-off test.

3.2.2.4.2 An attachment per Figure 2 is required for the peel test.

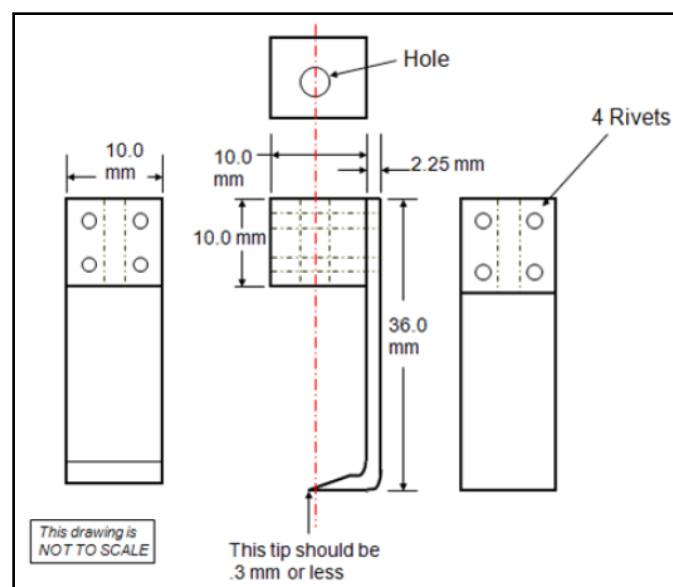


Figure 2: Diagram of Tip for Peel Test

3.2.3 Miscellaneous Tools.

3.2.3.1 Torque Wrench. A torque wrench is required to confirm that the minimum torque is used for the vehicle level attachments.

3.2.3.2 Drill and No. 58 Drill Bit. A drill with a No. 58 drill bit is required to drill holes in the Class A part.

3.2.3.3 One (1) mm Steel Wire. Steel wire with an approximate diameter of 1 mm is routed between the Class A and Class B parts and through the holes drilled in the Class A part per 3.2.3.2.

3.3 Test Vehicle/Test Piece.

3.3.1 Test Piece. The applique assembly is to be a production-representative part with the correct finish.

3.3.2 Sample Size. A sample size of three (3) parts is required for this test.

3.3.3 Conditioning. Condition to GMW3221, Code A.

3.4 Test Time.

Calendar time: 1 d

Test time: 4 h

Coordination time: 4 h

3.5 Test Required Information. The peak pull-off and peel force to separate the Class A and Class B parts of the multi-piece applique assembly.

3.6 Personnel/Skills. Prior experience in setting up and running similar tests and experience in the use of the referenced test equipment is critical to achieving the estimated times shown in 3.4.

4 Procedure

4.1 Preparation.

4.1.1 Before the test, verify the assembly part release or change level. Record this information on Data Sheet A1. The supplier shall work with the GM requesting engineer to comprehend these requirements.

4.1.2 Pull-Off Test.

4.1.2.1 Hole Locations. With a No. 58 drill bit, drill holes through only the Class A part of the applique assembly in between all snap attachments. Holes must be positioned between Class A and Class B snap attachment features (see Figure 3 and Figure 4).

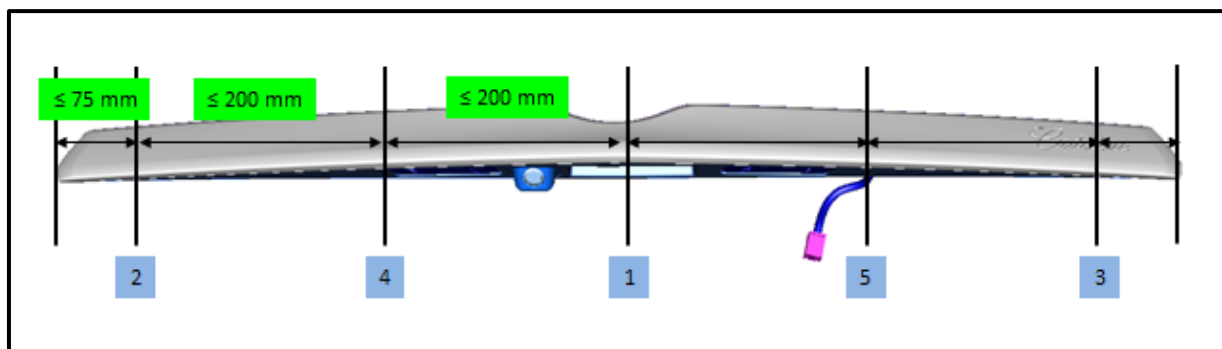


Figure 3: Hole Locations

4.1.2.2 Wire Routing. Route 1 mm steel wire through all holes drilled in 4.1.2.1 and around the force gauge (see Figure 5).



Figure 4: Hole Locations on A-side Part