



Evaluation of Fascia/Grille Assembly and Component Retention

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 standard describes how to evaluate the retention of components within a fascia assembly, and retention of fascia assemblies to the vehicle.

1.2 Applicability. This standard applies to all fascias and their component parts. Retention is evaluated at ambient temperature. The fascia gap and flush dimensions to the vehicle, when subjected to a simulated solar exposure, are evaluated in GMW15308. Fascia dimensional stability at cold and hot temperatures is evaluated in GMW15719. Air deflector durability is evaluated in GMW15874.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW15308	GMW15874	GMW16742
GMW15719	GMW16061	GMW17503

2.3 Additional References.

- Component Technical Specification (CTS)
- Bumper, Fascia and Grills Subsystem Technical Specification (SSTS)

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.

3.2.1 Tension/compression force gauges (200 N).

3.2.2 Force gauge application pads (2 cm², 4 cm² and 30 cm²).

3.2.3 Gap and flush measurement tools.

3.2.4 Torque wrench.

3.2.5 Drill motor and 10 mm drill bit.

3.3 Test Vehicle/Test Piece.

3.3.1 For vehicle level tests, a complete vehicle equipped with production intent fascia assemblies, including all components is required. Testing must occur with fascia mounted to vehicle with production intent parts and all

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relevant nearby components. Vehicle level tests are the responsibility of the GM Validation Engineer (VE). See Table 1 for vehicle level designations.

3.3.2 For component level tests, production intent fascia assemblies including all components are required. Testing must occur on a fascia assembly gauge, checking fixture, environmental cubing fixture, or buck, which properly constrains the fascia to datum as identified by Geometric Dimensioning and Tolerancing (GD&T). Component level tests are the responsibility of the Tier 1 supplier/manufacturing source. See Table 1 for component level designations.

Table 1: Typical Arrangement of Retention Forces

Point	Retention Force	Vehicle or Component
1	Front fascia to fender at wheel opening	Vehicle
2	Front fascia to fender near headlamp	Vehicle
3	Front fascia to headlamp	Vehicle
4	Rear fascia to body side outer at wheel opening	Vehicle
5	Rear fascia to body side outer near tail lamp	Vehicle
6	Grille to fascia	Component
7	Fascia upper to fascia lower	Component
8	Fog and signal lamps	Component
9	Reflectors	Component
10	Fog lamp bezels and accent pieces	Component
11	Body on frame tow hook cover	Component
12	Headlamp wash system/cover/nozzles	Component
13	Park assist sensor	Component
14	License plate brackets	Component
15	Step pad	Component
16	Trailer hitch cover	Component
17	Retaining tether strap for the towing lug cover	Component
18	Release Force – tow hook cover	Component
19	Closing Force – tow hook cover	Component
20	Exhaust tip decorative bezel	Component
21	Rear bumper rear end carrier cover	Component
22	Temperature sensor	Component
23	License plate lamp	Component
24	Front/Rear camera or camera delete cover	Component
25	Welded brackets	Component
26	Wire harness	Component
27	Emblem retention	Component
28	Emblem peel	Component

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29	Energy absorber	Component
30	Engine heater plug	Component
31	Skid Plate	Component
32	Grille bezel and accent pieces	Component

3.4 Test Time.

Calendar time: 1 d

Test time: 2 h

Coordination time: 6 h

3.5 Test Required Information. Not applicable.

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

4 Procedure

4.1 Preparation.

4.1.1 Before the test, verify all of the assembly and component part release levels or change levels. Record this information on Appendix A, Data Sheet A1 for vehicle level tests and on Appendix A, Data Sheet A2 for component level tests.

4.1.2 Inspect all of the fasteners and joints for correct installation and absence of damage. Correct any discrepancies or note them on Data Sheet A1 for vehicle level tests and on Data Sheet A2 for component level tests.

4.1.3 Drill 10 mm holes at appropriate pull locations before installing fascia on vehicle or fixture/buck. Take care to ensure the tension gauge hook engages only the component being tested. Larger clearance holes in components located behind/near test point may be required to ensure force is applied to only the component being tested. See Figure 1.

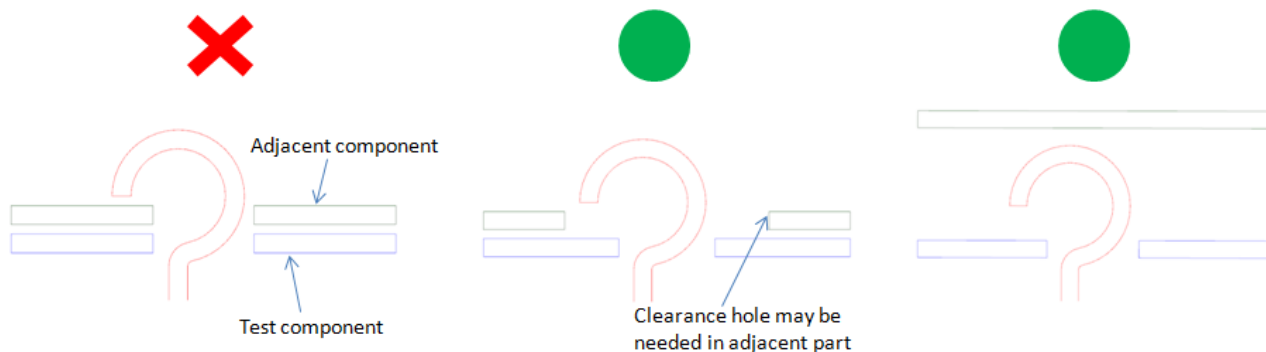


Figure 1: Tension Gauge Hook Engagement Examples

4.2 Conditions.

4.2.1 Environmental Conditions. Perform measurements at $23\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$.

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.

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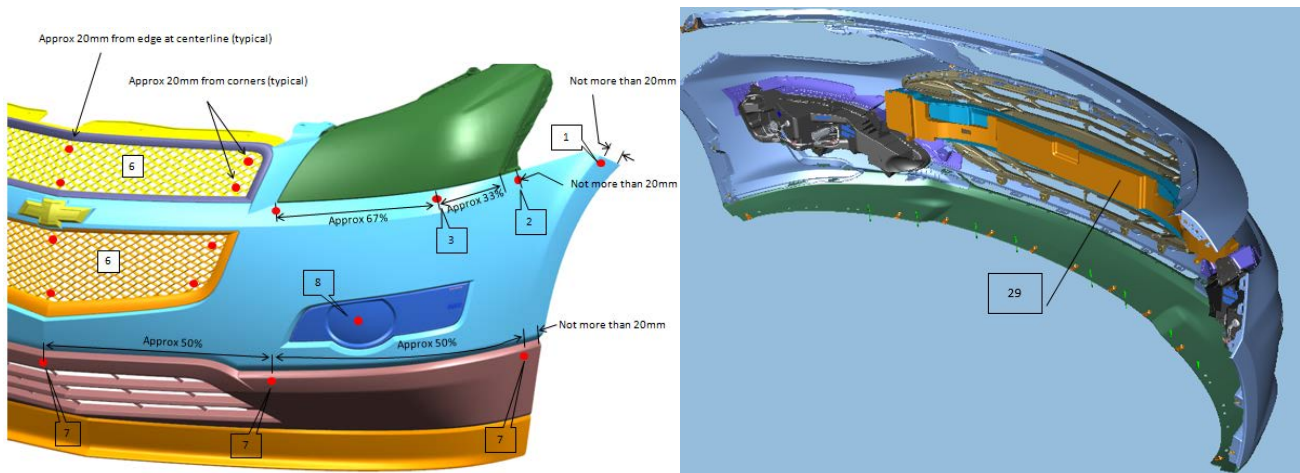


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4.3 Instructions.

4.3.1 Retention Measurement Locations. The Design Release Engineer (DRE) and the Validation Engineer (VE) shall determine the final number and location of fascia measuring points based on part size, styling geometry and component content. Suggested number and locations are shown in Figure 2 through Figure 7. Retention tests are specified following Figure 7.



Note: Approx = Approximately

Figure 2: Typical Retention Force Application Points (1, 2, 3, 6, 7, 8 and 29)

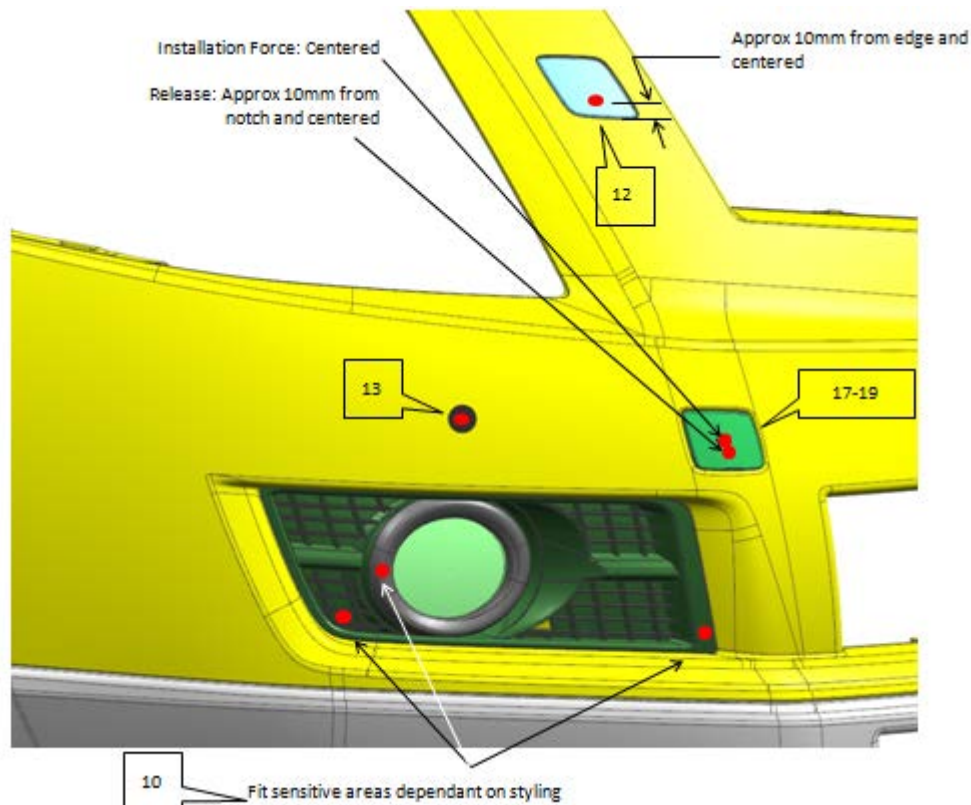


Figure 3: Typical Retention Force Application Points (10, 12, 13, 17, 18 and 19)

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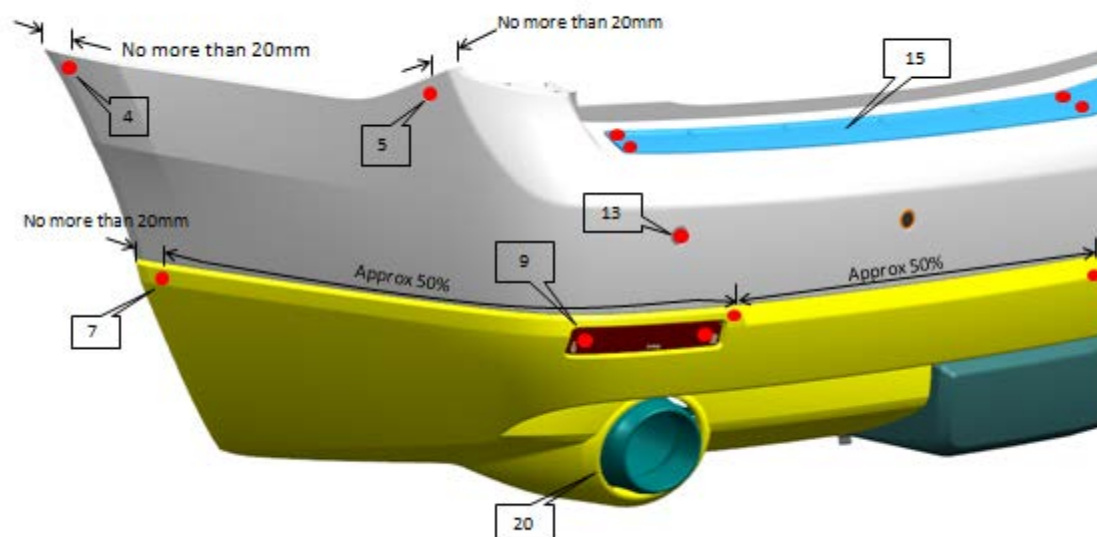


Figure 4: Typical Retention Force Application Points (4, 5, 7, 9, 13, 15 and 20)

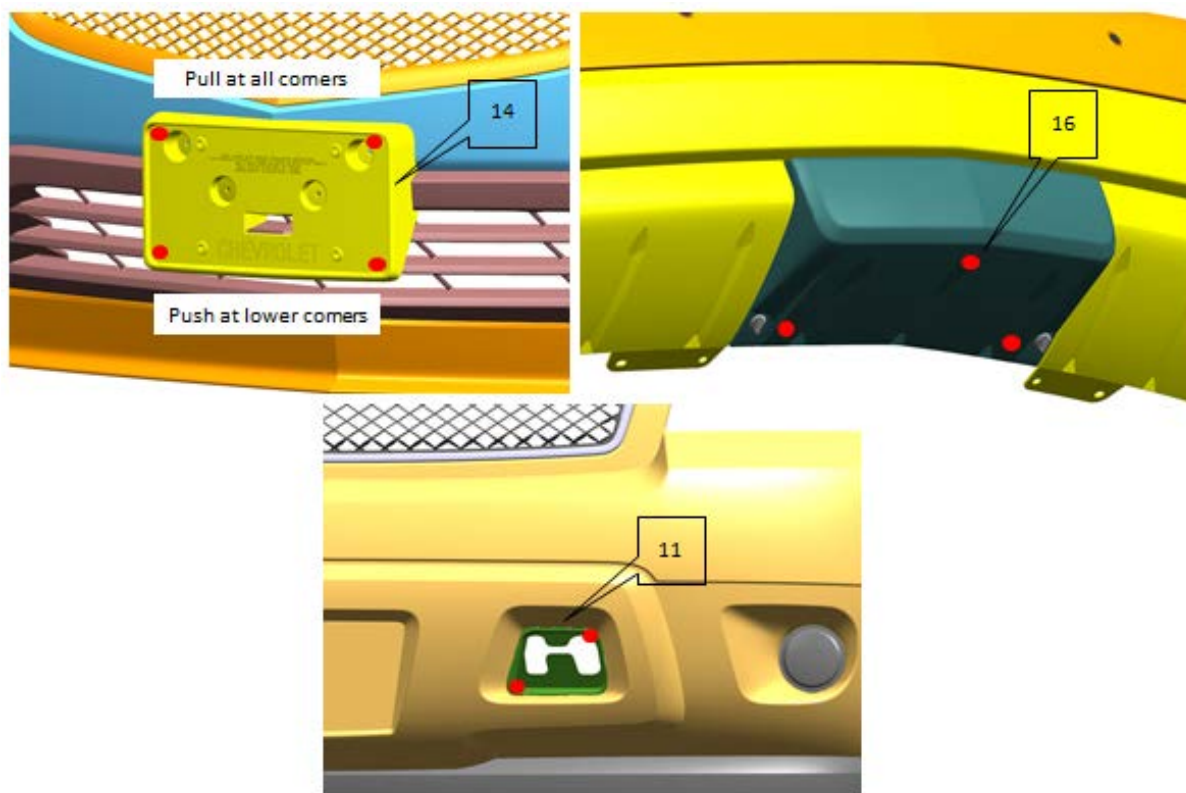


Figure 5: Typical Retention Force Application Points (11, 14 and 16)

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