



Flame Resistance Test for Adhesives and Sealers

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 test procedure intends to determine the flame resistance of adhesives and sealers located in or near a welding operation.

1.2 Applicability. This test procedure may be used for body shop adhesives and sealers.

1.3 Remarks. None.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

None

2.3 Additional References.

Relevant Adhesive and/or Sealer Material Specification

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 Clean (no forming lubricant present) cold rolled steel (CRS) panels.

3.2.2 Bunsen burner with natural gas flame (liquid propane gas (LPG) or butane are also acceptable fuels).

3.2.3 Movable test rig to position panel (with test material) and bunsen burner with flame.

3.3 Test Vehicle/Test Piece. The test piece dimensions are a 2.5 mm x 35 mm x 130 mm long bead applied to a cleaned cold rolled steel (CRS) panel of 250 mm x 100 mm, unless otherwise specified or agreed upon by the GM approving engineer.

3.4 Test Time.

Calendar time: 1 day

Test time: 2 hours

Coordination time: 1 hour

3.5 Test Required Information. See 4.3.7 and 5.3.

3.6 Personnel/Skills. Test technician capable of running this test per the requirements.

4 Procedure

4.1 Preparation. See 4.3.

4.2 Conditions.

4.2.1 Environmental Conditions. The test shall be performed 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.

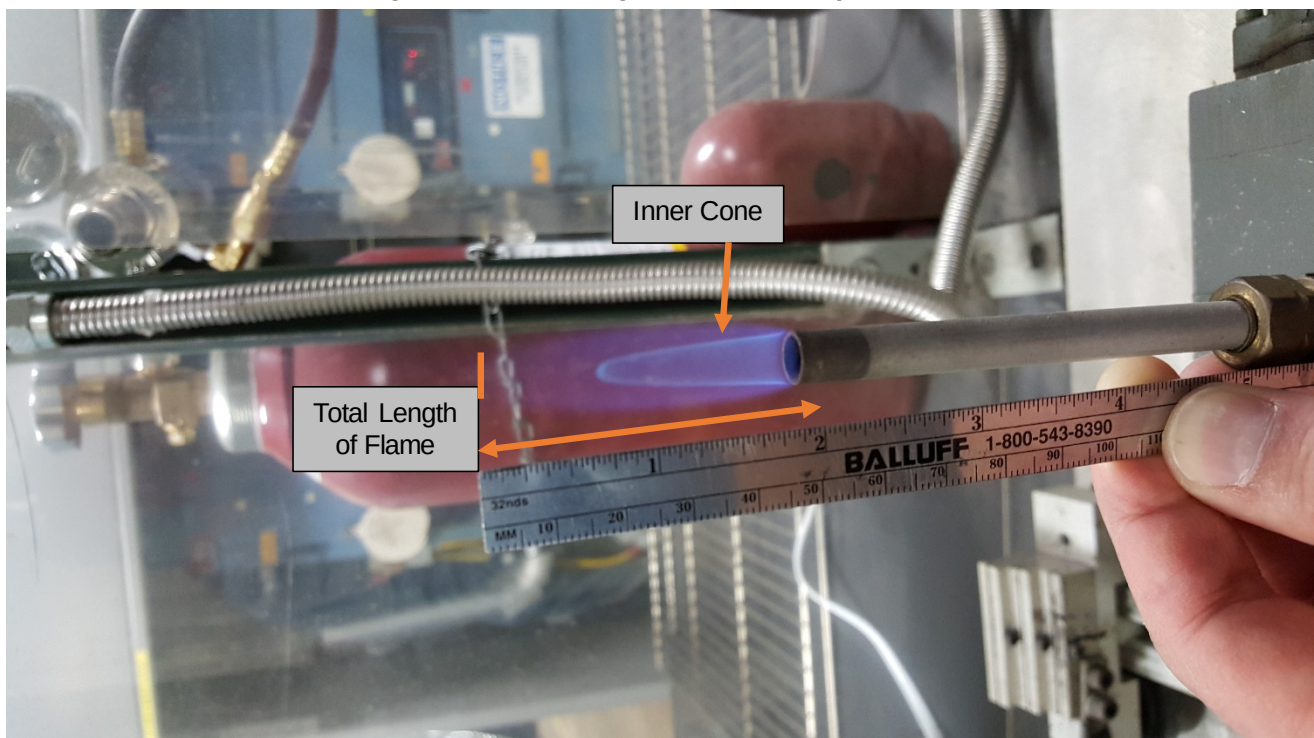
4.3 Instructions.

4.3.1 Apply a 2.5 mm x 25 mm x 130 mm long bead on the CRS test panel.

4.3.2 Air dry sample for 30 minutes.

4.3.3 Adjust gas flow to have a 50 mm high flame. Air flow shall be adjusted to get two (2) distinct inner and outer blue cones. See Figure 1.

Figure 1: Flame Length and Cone Requirement



4.3.4 With the sample panel held in a vertical orientation, position the flame, in a way, so that the inner cone touches the test piece perpendicular to the panel and at the edge of the bead and turn the drive motor on (see Figure 2). Flame rate of travel shall be a uniform 25.5 mm/s. The flame travels across the width of the bead for ~1 s and off for 1 s at both ends of travel. Travel per pass is ~51 mm. The flame may also be held stationary with the panel moving across the flame.