



Methods of Test for Sound Deadener Pads; Test for Low Temperature Resistance

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 method shall be used to determine the resistance to low temperature of baked deadener pads.

Low temperature resistance as determined by this test method shall be defined as the ability of a baked deadener material to withstand impact forces at specified low temperatures.

1.2 Applicability. All the baked on preformed acoustic damper pads.

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.

GMW2 GMW3221

2.3 Additional References.

None.

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 Test apparatus for conditioning to GMW3221, Code A.

3.2.2 Tests shall be performed using specially prepared test panels, the test panel size is 250 mm × 50 mm minimum × 1 mm ± 0.2 mm, made from GMW2 M-ST-S. The panels shall be prepared per 4.3.5.

3.2.3 Any forced-air drying oven capable of maintaining the specified temperatures within the specified tolerances.

3.2.4 Refrigerator capable of maintaining -25 °C to ± 3 °C.

3.2.5 Steel plate; 250 mm × 200 mm × 10 mm minimum.

3.2.6 Xylene or equivalent solvent.

3.3 Test Vehicle/Test Piece.

3.3.1 The test pieces; 250 mm ± 0.5 mm × 50 mm ± 0.5 mm x thickness of deadener pad, shall be taken at various points from the available material. The direction of sampling is unimportant.

3.3.2 For initial sample approval and arbitration purposes, at least three (3) test pieces shall be tested. For routine quality control, at least one (1) test piece shall be tested.

3.4 Test Time.

Calendar time: 2 days

Test time: 0.5 hours

Coordination time: 2 hours

3.5 Test Required Information. See 5.3.

3.6 Personnel/Skills. Test technician with skills to run tests to requirements.

4 Procedure

4.1 Preparation. Test pieces shall be conditioned to GMW3221 Code A.

4.2 Conditions.

4.2.1 Environmental Conditions. Not applicable.

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 The prepared test panels shall be cleaned with xylene (or equivalent) and allowed to dry.

4.3.2 The conditioned test pieces shall be placed on the cleaned test panels and subjected to the baking conditions specified (see 4.3.5).

4.3.3 The test assembly produced shall be allowed to cool to $-25\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$ for 16 h to 24 h.

4.3.4 The test assembly shall be removed from the refrigerator and immediately dropped from the specified height of 0.5 m onto the steel plate, ensuring that the steel test panel faces downward.

4.3.5 Baking Conditions. Unless otherwise indicated, the baking conditions in Table 1 shall apply to the test pieces.

Table 1: Baking Conditions

Bake Description	Minimum (Time at Metal Temperature)	Maximum (Time at Metal Temperature)
Standard Process - Paint Shop (Use for Material Type 1 thru Type 5)	15 minutes at $125\text{ }^{\circ}\text{C}$ ^{Note 1} ($257\text{ }^{\circ}\text{F}$) ^{Note 1}	60 minutes at $190\text{ }^{\circ}\text{C}$ ^{Note 2} ($374\text{ }^{\circ}\text{F}$) ^{Note 2}
Non-Compressed Three (3)-Wet Process - Paint Shop (Use for Material Type 1A thru Type 5A)	Three (3)-Wet 10 minutes at $140\text{ }^{\circ}\text{C}$ ($285\text{ }^{\circ}\text{F}$) ^{Note 3}	Three (3)-Wet 20 minutes at $163\text{ }^{\circ}\text{C}$ ($325\text{ }^{\circ}\text{F}$) ^{Note 3}

Note 1: Represents the minimum bake for a Low Bake, Solventborne Primer Surfacer.

Note 2: Represents the maximum bake for a High Bake, Powder Primer Surfacer.

Note 3: Represents the minimum/maximum bake for a Three (3)-Wet Sealer Oven.

5 Data

5.1 Calculations. Not applicable.

5.2 Interpretation of Results.

5.2.1 After impact, the test assembly shall be allowed to return to $+23\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$ and examined with the naked eye for cracking, delamination, etc.