



Sound Transmission Loss - Flat Stock Evaluation Test Procedure

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. To measure the Sound Transmission Loss of a flat stock material in a standardized fixture and in an opening between a reverberation room and anechoic room.

1.2 Applicability. This procedure applies to any flat stock material to be tested between a reverberation room and anechoic room. This procedure can be used for development and/or validation of the Sound Transmission Loss performance.

1.3 Remarks. The Sound Transmission Loss (STL) Master Test Procedure, GMW14173, shall be referenced for more detailed information corresponding to the following procedure.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW14173

3 Resources

3.1 Facilities. Wholly contained in GMW14173.

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. Wholly contained in GMW14173.

3.3 Test Vehicle/Test Piece. The test piece consists of the material and sheet metal (if appropriate) to simulate the performance of the material in vehicle. The material and sheet metal (if appropriate) should be a piece of flat stock that is cut to fit the test fixture. See Appendix A for a typical glass flat stock STL fixture setup.

3.4 Test Time.

Calendar time: 2 d to 3 d

Test hours: 4 h to 8 h

Coordination hours: 1 h to 2 h

3.5 Test Required Information. Wholly contained in GMW14173.

3.6 Personnel/Skills. Wholly contained in GMW14173.

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4 Procedure

4.1 Preparation.

4.1.1 Test Specimen Preparation. The sample shall be mounted in a frame fixture with sealed edges. For materials other than glass, the test specimen panel shall be prepared in the test fixture per GMW14173 Section 4.1.1. See Appendix A, Figures A1 thru A7 for pictures of a typical glass material STL fixture.

4.2 Conditions. All conditions are wholly contained in GMW14173.

4.2.1 Environmental Conditions. Reference GMW14173.

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. Wholly contained in GMW14173.

5 Data

5.1 Calculations. Wholly contained in GMW14173.

5.2 Interpretation of Results. Verify whether Subsystem Technical Specification requirements are achieved, when appropriate.

5.3 Test Documentation. The data shall be recorded in one-third octave bands.

6 Safety

This standard may involve hazardous materials, operations, and equipment. This standard does not propose to address all the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

7 Notes

7.1 Glossary. Wholly contained in GMW14173.

7.2 Acronyms, Abbreviations, and Symbols.

STL Sound Transmission Loss

8 Coding System

This standard shall be referenced in other documents, drawings, etc., as follows:

Test to GMW14618

9 Release and Revisions

This standard was originated in October 2005. It was first approved by Noise & Vibration Integration in November 2005. It was first published in November 2005.

Issue	Publication Date	Description (Organization)
1	NOV 2005	Initial publication.
2	OCT 2010	Added reference to GMW14173 in paragraph 4.1.1 to detail how to prepare the test specimen in the test fixture. (Global N&V Airborne Noise VPO Team)
3	SEP 2015	Five Year Refresh. (Global N&V Airborne Noise VPO Team)

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