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Super Therm® — Vibration Damping Performance

ASTM E756 · VTEC Laboratories Report #100-9046 · Tested June 11, 2026

Super Therm® was tested by VTEC Laboratories under **ASTM E756** using the Oberst cantilever-beam method to measure how effectively the coating dissipates vibrational energy. The governing metric is the **Material Loss Factor (MLF)** — the higher the value, the more vibration energy the coating converts to heat and removes from the panel. Applied as a thin 0.1-inch layer, Super Therm delivered an MLF of **0.134 to 0.224** across all seven resonant modes tested (at 69.9°F), with damping strengthening as frequency rose. Any MLF above roughly 0.1 is considered effective damping, so the coating performed well across the entire range.

Mode	Frequency (Hz)	CLF	E (psi)	MLF
2	115.6	0.016	9.85E+04	**0.134**
3	324.2	0.020	9.77E+04	**0.165**
4	636	0.024	9.93E+04	**0.197**
5	1053.8	0.025	1.00E+05	**0.203**
6	1576	0.028	1.05E+05	**0.217**
7	2209.2	0.028	1.03E+05	**0.222**
8	2954.6	0.030	1.11E+05	**0.224**

CLF = Composite Loss Factor · MLF = Material Loss Factor

WHERE THIS MAKES A DIFFERENCE

- **Data centers.** Fan-driven CRAC/CRAH units, ductwork, and generator/UPS enclosures resonate and radiate noise as capacity scales. A thin coat of Super Therm on this sheet metal reduces panel "drumming," cutting radiated noise and easing property-line and OSHA worker-exposure pressure.
- **EV & battery systems.** Near-silent electric drivetrains make panel resonance stand out. Damping battery enclosures, motor housings, and body panels improves NVH in one of the fastest-growing manufacturing sectors.
- **HVAC & mechanical equipment.** Rooftop units, air handlers, and chiller housings — damping the sheet metal lowers radiated noise and reduces vibration-driven fatigue on panels and welds.
- **Renewable energy.** Wind-turbine nacelles and solar/battery inverter and transformer cabinets carry constant vibration; damping controls noise near occupied areas and extends component life.
- **Industrial & transportation.** Machine guards, hoppers, conveyor panels, and rail-car and marine bulkheads are classic damping targets for noise control and durability.

Scope: ASTM E756 measures structure-borne vibration damping (panel and enclosure resonance) — not airborne sound absorption or room echo. Companion ASTM E90/E413 transmission-loss testing (VTEC #100-2251) documents Super Therm's contribution to airborne transmission loss, giving a two-part acoustic story: damp the source panels (E756), and block the airborne path (E90).

10835 W. 78th Street • Shawnee, Kansas 66214 • Phone: 913-962-4848; Fax: 913-962-6767
Website: www.spicoatings.com Email: sales@spicoatings.com

ASTM E756
FOR
SUPERIOR PRODUCTS INTERNATIONAL II, INC
ON
SUPER THERM
VTEC #100-9046
TESTED: JUNE 11, 2026

VTEC Laboratories Inc.

June 11, 2026

Client: Superior Products International II, Inc.
10835 W 78th Street
Shawnee, KS 66214

Attention: Juli Pritchett

Subject:

Measure vibration-damping properties of materials per ASTM E756 specification.

Test Details:

Unit Option:	English (in - lb - sec)
Test Procedure:	Cantilevered
Beam Type:	Oberst
Boundary Conditions:	Cantilevered
Length (in):	10.03
Width (in):	0.5
Material Classification:	Metal

Disclaimer:

This test result alone does not assess the fire hazard of the material, or a product made from this material, under actual fire conditions. Consequently, the results of this test alone are not to be quoted in support of claims with respect to the fire hazard of the material or product under actual fire conditions. The results when used alone are only to be used for research and development, quality control and material specifications.

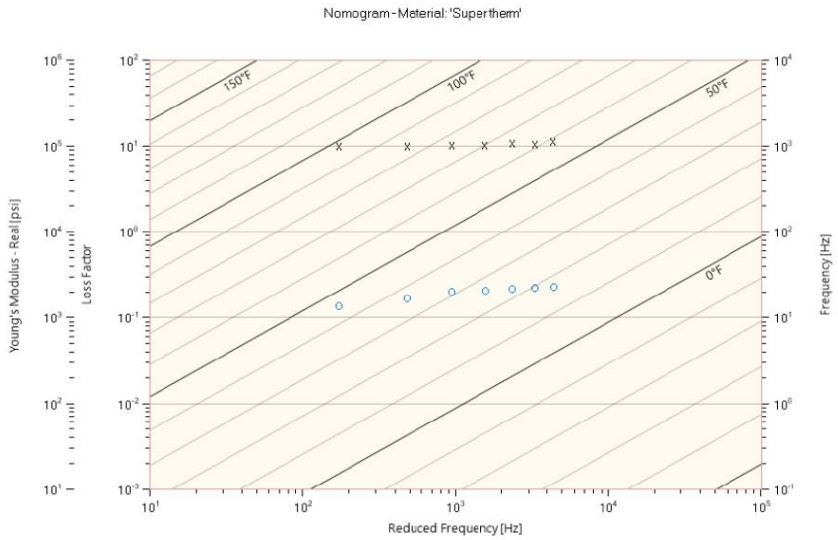
VTEC #100-9046 SUPERIOR PRODUCTS INTERNATINAL II, INC. ASTM E756

Test Results:

Beam Layer	Type	Thickness (in)	Material	Density (lb/in3)
1	Viscoelastic	0.1	Super Therm®	0.0369
2	Constraining (base beam)	0.0633	128539	0.284

Temperature (°F)	Mode	Frequency (Hz)	CLF	E (psi)	MLF
69.9	2	115.6	0.016	9.846E+04	0.134
69.9	3	324.2	0.020	9.766E+04	0.165
69.9	4	636	0.024	9.926E+04	0.197
69.9	5	1053.8	0.025	1.001E+05	0.203
69.9	6	1576	0.028	1.046E+05	0.217
69.9	7	2209.2	0.028	1.033E+05	0.222
69.9	8	2954.6	0.030	1.107E+05	0.224

*Note: CLF = Composite Loss Factor and MLF = Material Loss Factor



Neil Schultz
Executive Director

Amirudin Rahim
Technical Director

Super Therm® — Airborne Sound Transmission (STC) Performance

ASTM E90 / E413 · VTEC Laboratories Report #100-2251 · Tested November 22, 2005

Super Therm® was evaluated by VTEC Laboratories under **ASTM E90** (airborne sound transmission loss), with results classified per **ASTM E413** as a **Sound Transmission Class (STC)** rating — a measure of how well a wall assembly blocks airborne sound from passing through it; the higher the number, the more sound is stopped. Three sheetrock-and-steel-stud wall assemblies were tested, differing only in how much Super Therm was applied. STC rose from **38 to 41** as coating coverage increased, confirming that Super Therm adds measurable transmission loss to a wall assembly. For reference, STC 40 is roughly the point at which loud speech through a wall is reduced to a faint murmur.

VTEC Report	Wall Configuration	STC
#100-2251-1	Sheetrock coated on one side	**38**
#100-2251-2	Sheetrock coated on exterior faces	**39**
#100-2251-3	Sheetrock coated on both sides	**41**

How to read this: *STC belongs to the complete wall assembly (sheetrock + steel studs + Super Therm). The coating is a documented contributor, adding roughly 3 STC points as coverage increased.*

WHERE THIS MAKES A DIFFERENCE

- **Data-center mechanical rooms.** Coated partition and enclosure walls help contain CRAC/chiller and generator noise so it doesn't cross into white space, offices, or reach the property line.
- **Compressor & genset buildings.** Coated cladding assemblies reduce airborne noise breakout to the fenceline, where community and permit limits apply.
- **Equipment-adjacent occupied spaces.** Coated partitions between mechanical rooms and control rooms, offices, or nearby residences raise the barrier's transmission loss.
- **Industrial equipment enclosures.** Coated barrier panels around pumps, blowers, and compressors help keep airborne noise contained inside the enclosure.

Scope: ASTM E90/E413 measures airborne transmission loss through a wall assembly — not structure-borne vibration damping or room absorption. Companion ASTM E756 testing (VTEC #100-9046) documents Super Therm's source-side vibration damping, giving a two-part acoustic story: damp the source panels (E756), and block the airborne path (E90). STC values reflect the complete coated assembly. Provided for project submittal and product-acceptance use.

STC TESTING
FOR
SUPERIOR PRODUCTS INTERNATIONAL II
ON SUPERTHER
SINGLE WALL EXTERIOR COATED
VTEC #100-2251-1
TESTED: NOVEMBER 22, 2005

VTEC Laboratories Inc.

December 9, 2005

Client: Superior Products International II
10835 W. 78th Street
Shawnee, KS 66214

Attn: J.E. Pritchett

Subject: Measure sound transmission loss per ASTM E90, "Standard Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions."

Determine sound transmission class per ASTM E413, "Standard Classification for Determination of Sound Transmission Class."

DISCLAIMER:

This is a factual report of the results obtained from the laboratory test of sample products. The results may be applied only to the products tested and should not be construed as applicable to other similar products of the manufacturer. The report is not a recommendation or disapprobation by VTEC Laboratories Inc., of the material tested. While this report may be used for obtaining product acceptance, it may not be used in advertising.

NOTICE:

VTEC Laboratories Inc., will not be liable for any loss or damage resulting from the use of the data in this report, in excess of the invoice. This report pertains to the sample tested only. Such report shall not be interpreted to be a warranty, either expressed or implied as to the suitability or fitness of said sample for such uses or applications, as the party contracting for the report may apply such sample.

I. INTRODUCTION

The sound transmission loss of a partition in a specified frequency band is the ratio, expressed on the decibel scale, of the airborne sound power incident on the partition to the sound power transmitted by the partition and radiated on the other side. The ratio of two like quantities proportional to power of energy is expressed on the decibel (dB) scale by multiplying its common logarithm by ten.

II. TEST METHOD

The measurements were made in accordance with ASTM E90, "Standard Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions." The sound transmission class, STC, was determined in accordance with ASTM E413, "Standard Classification for Determination of Sound Transmission Class."

III. TEST SPECIMEN

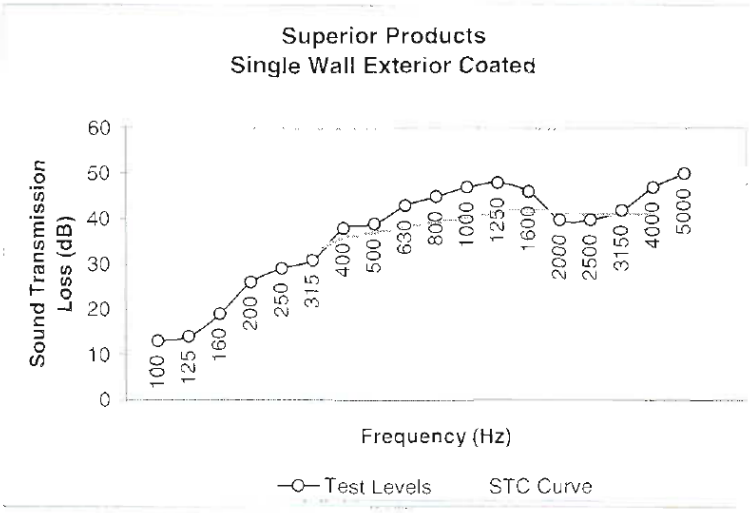
The test specimen was a sheetrock and steel stud wall 8' by 8' by 5-7/8" thick, consisting of 3-1/2" "Supertherm" Batch 081805B coated steel studs, with 5/8" thick sheet rock on both sides. The sheetrock toward the source room was coated with Supertherm Batch 081805B. The wall was installed for testing in an 8' by 8' test opening between the source room and the receiving room. After the walls were installed, the crack around the perimeter of the wall and the crack between the sheet rock panels were sealed with "Duxseal". The wall was submitted for testing by VTEC Laboratories Inc., and was identified as "Test Wall no. 1, Single Wall Exterior Coated". The weight of the specimen was 297 pounds. The test area was 64 square feet.

VTEC #100-2251-1 SUPERIOR PRODUCTS STC

IV. RESULTS

Frequency (Hz)	TL	Deficiencies	Frequency (Hz)	TL	Deficiencies
100	13		800	45	0
125	14	-8	1000	47	0
160	19	-6	1250	48	0
200	26	-2	1600	46	0
250	29	-2	2000	40	-2
315	31	-3	2500	40	-2
400	38	0	3150	42	0
500	39	0	4000	47	0
630	43	0	5000	50	

Sound Transmissin Class, STC: 38



Neil Schultz
Executive Director

Amirudin Rahim
Technical Director

STC TESTING
FOR
SUPERIOR PRODUCTS INTERNATIONAL II
ON SUPERTHERM
EXTERIOR AND INTERIOR WALLS
BOTH COATED ON EXTERIOR SIDE
VTEC #100-2251-2
TESTED: NOVEMBER 22, 2005

VTEC Laboratories Inc.

December 9, 2005

Client: Superior Products
10835 W. 78th Street
Shawnee, KS 66214

Attn: J.E. Pritchett

Subject: Measure sound transmission loss per ASTM E90, "Standard Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions."

Determine sound transmission class per ASTM E413, "Standard Classification for Determination of Sound Transmission Class."

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I. INTRODUCTION

The sound transmission loss of a partition in a specified frequency band is the ratio, expressed on the decibel scale, of the airborne sound power incident on the partition to the sound power transmitted by the partition and radiated on the other side. The ratio of two like quantities proportional to power of energy is expressed on the decibel (dB) scale by multiplying its common logarithm by ten.

II. TEST METHOD

The measurements were made in accordance with ASTM E90, "Standard Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions." The sound transmission class, STC, was determined in accordance with ASTM E413, "Standard Classification for Determination of Sound Transmission Class."

III. TEST SPECIMEN

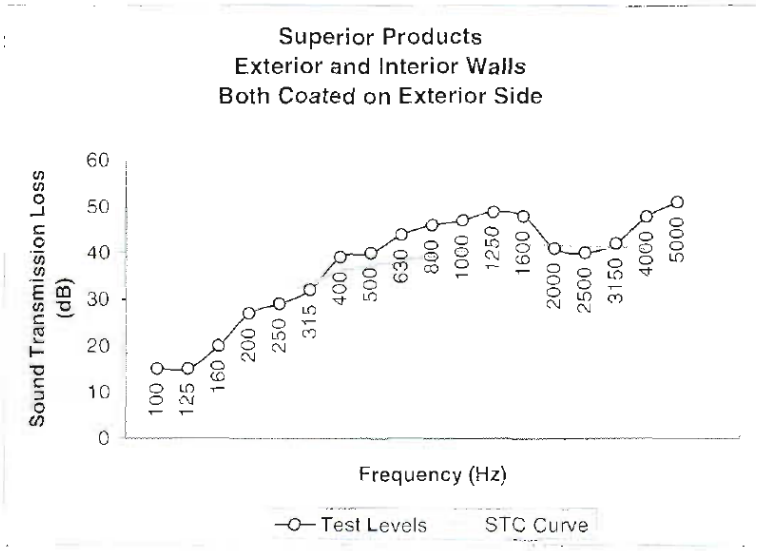
The test specimen was a sheetrock and steel stud wall 8' by 8' by 5-7/8" thick, consisting of 3-1/2" thick "Supertherm" Batch 081805B coated steel studs, with 5/8" thick sheet rock on the exterior side. The sheetrock on both sides of the wall were coated with Supertherm Batch 081805B. The wall was installed for testing in an 8' by 8' test opening between the source room and the receiving room. After the walls were installed, the crack around the perimeter of the wall and the crack between the sheet rock panels were sealed with "Duxseal". The wall was submitted for testing by VTEC Laboratories Inc., and was identified as "Test Wall no. 2, Exterior and Interior Walls Coated on exterior side". The weight of the specimen was 301 pounds. The test area was 64 square feet.

VTEC #100-2251-2 SUPERIOR PRODUCTS STC

IV. RESULTS

Frequency (Hz)	TL	Deficiencies	Frequency (Hz)	TL	Deficiencies
100	15		800	46	0
125	15	-8	1000	47	0
160	20	-6	1250	49	0
200	27	-2	1600	48	0
250	29	-3	2000	41	-2
315	32	-3	2500	40	-3
400	39	0	3150	42	-1
500	40	0	4000	48	0
630	44	0	5000	51	

Sound Transmissin Class, STC: 39



Neil Schultz
Executive Director

Amirudin Rahim
Technical Director

STC TESTING
FOR
SUPERIOR PRODUCTS INTERNATIONAL II
ON SUPERTHERM
EXTERIOR AND INTERIOR WALLS
BOTH COATED BOTH SIDES
VTEC #100-2251-3
TESTED: NOVEMBER 22, 2005

VTEC Laboratories Inc.

December 9, 2005

Client: Superior Products International II
10835 W. 78th Street
Shawnee, KS 66214

Attn: J.E. Pritchett

Subject: Measure sound transmission loss per ASTM E90, "Standard Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions."

Determine sound transmission class per ASTM E413, "Standard Classification for Determination of Sound Transmission Class."

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I. INTRODUCTION

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II. TEST METHOD

The measurements were made in accordance with ASTM E90, "Standard Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions." The sound transmission class, STC, was determined in accordance with ASTM E413, "Standard Classification for Determination of Sound Transmission Class."

III. TEST SPECIMEN

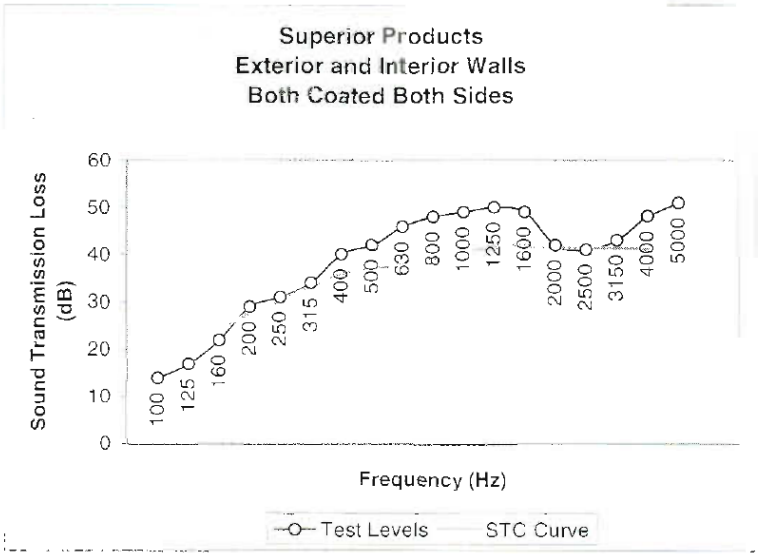
The test specimen was a sheetrock and steel stud wall 8' by 8' by 5-7/8" thick, consisting of 3-1/2" thick "Supertherm" Batch 081805B coated steel studs, with 5/8" thick sheet rock on both sides. The sheetrock on both sides of the wall were coated with Supertherm Batch 081805B. The wall was installed for testing in an 8' by 8' test opening between the source room and the receiving room. After the walls were installed, the crack around the perimeter of the wall and the crack between the sheet rock panels were sealed with "Duxseal". The wall was submitted for testing by VTEC Laboratories Inc., and was identified as "Test Wall no. 3, Exterior and Interior Walls Coated on both sides". The weight of the specimen was 309 pounds. The test area was 64 square feet.

VTEC #100-2251-3 SUPERIOR PRODUCTS STC

IV. RESULTS

Frequency (Hz)	TL	Deficiencies	Frequency (Hz)	TL	Deficiencies
100	14		800	48	0
125	17	-8	1000	49	0
160	22	-6	1250	50	0
200	29	-2	1600	49	0
250	31	-3	2000	42	-3
315	34	-3	2500	41	-4
400	40	0	3150	43	-2
500	42	0	4000	48	0
630	46	0	5000	51	

Sound Transmissin Class, STC: 41



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