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SOUND TRANSMISSION TESTING CONDUCTED ON
EverKem Diversified Products, Sound Seal 90 SS90

EverKem Diversified Products
120 Regent Drive
Winston Salem, NC 27103

Date:	5/29/2024
Author:	Shaun Montgomery
Report Number:	ESP042289P

Customer PO#: Signed Quote

ACCREDITED
TESTING CERT #98.03

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Ear Controlled Data

Sound Transmission Class Testing (ASTM E90)

INTRODUCTION:

This report presents the results of acoustical testing of EverKem Diversified Products, Sound Seal 90. This testing was requested by Mr. Jason Lynch and was completed on January 18th, 2024.

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The results stated in this report represent only the specific construction and acoustical conditions present at the time of the test. Measurements performed in accordance with this standard on nominally identical constructions and acoustical conditions may produce different results.

TEST RESULTS SUMMARY:

	STC	def	OITC
Test 1: Complete Test Wall w/ ½" Perimeter Gap Open	*28*	*19*	*31*
Test 2: ½" Perimeter Gap Filled w/ Sound Seal 90 SS90	*61*	*25*	*50*
Test 3: ½" Perimeter Gap Filled w/ Sound Seal 90 SS90(Cured 24 hrs.)	*62*	*25*	*51*

Tabular and graphical presentations of the data are presented under "TEST RESULTS" below.

SPECIMEN DESCRIPTION:

Test #1 – Test of Base Wall

The base wall was constructed with two (2) walls separated by a 1" air space. The Source side wall was built with 3 5/8" x 1 ½" steel studs, 24" o/c and insulated with R-11 Fiberglass Insulation. Three (3) layers of 5/8" Type X gypsum was attached to the steel studs using 1 7/8" clear zinc self-drilling screws. The Termination side wall was built with 3 5/8" x 1 ½" steel studs and insulated with R-11 Fiberglass Insulation. Three (3) layers of 5/8" Type X gypsum was attached using 1 7/8" clear zinc self-drilling screws. A 1/8" spacer was placed 18" o/c around the entire perimeter of the steel stud track to produce a 1/8" gap between the base wall and the test wall frame. A ½" gap was maintained between the gypsum board and the test opening around the entire perimeter.

Note: This assembly was tested to display the degree of sound reduction with 'Open' penetrations through the wall.

Test #2 – 1/2" Gap filled w/ SS90

Provided Metacaulk SAS90 was applied to the ½" gap around the perimeter of the base wall using a 4" petty knife. The Metacaulk was allowed to set for one hour after application.

Test #3 – 1/2" Gap filled w/ SS90 (Cured 24 hrs.)

The provided SS90 was allowed to cure for 24 hours, and the test was repeated with no other changes made to the test wall.

TEST PROCEDURE

Sound Transmission Test

The tests were conducted according to ASTM E90-09 (Reapproved 2016), "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission of Building Partitions and Elements." Detailed test procedures, data for flanking limit tests, repeatability measurements and reference specimen tests are available on request. The STC value was obtained by applying the Transmission Loss (TL) values to the STC reference contour of ASTM: E413(22), “Determination of Sound Transmission Class.” The actual transmission loss at each frequency was calculated by the following equations:

$$TL = NR + 10 \log S - 10 \log A2$$

where: TL = Transmission Loss (dB)
NR = Noise Reduction (dB)
S = Surface area common to both sides (sq. ft.)
A2 = Sound absorption of the receiving room with the sample in place (sabins)

OITC Procedure

ASTM:E1332-22, "Standard Classification for Rating Outdoor-Indoor Sound Attenuation", was followed in every respect. Basically, the OITC was calculated by using the sound transmission loss values in the 80 to 4000 Hz range as measured in accordance with ASTM E-90(09). These transmission loss data are then used to determine the A-weighted sound level reduction of the specimen for the reference source spectrum specified in Table 1 of ASTM E1332(22). The appropriate calculations were made to determine the OITC value. TL measurements were obtained in a single direction, from Source Room to the Receiving room. The source room has a volume of 2948-ft3 (83-m3) and the receiving room has a volume of 5825-ft3 (165-m3).

TEST EQUIPMENT:

Item Description	ID#	Manufacturer/Model	Serial #	Cal. Due	Location
1/2" Pressure Condensor Mic	PT-162-075	GRAS/40AD	19220-1244	3/3/2024	Reverberation Chamber
1/2" Pressure Condensor Mic	PT-162-216	BSWA/MP253	450005	6/9/2024	Source Chamber
Microphone Calibrator	PT-162-226	Norsonic/1256	125626769	6/15/2024	N/A
Data Acquisition Module	PT-162-107	National Instruments/NI9234	1735986-1893EB3	6/16/2024	Control Center
Temp/Humidity Sensor	PT-162-077	Dwyer/Series RH	M90714-e4SV-Y	6/6/2024	Reverberation Chamber
Temp/Humidity Sensor	PT-162-079	Dwyer/Series RH	m93237-E09w-A	6/6/2024	Source Chamber

Test Results:

SOUND TRANSMISSION LOSS
ASTM E90

General Information

Project No.:	ESP042289P-1
Customer:	EverKem Diversified Products
Test Date:	05-29-2024
Specimen ID:	Full Wall
Specimen Description:	No Sealant 108.00" W x 96.00" H - 72.00 ft²
Specimen (depth-weight):	" - lbs
Operator:	SJM

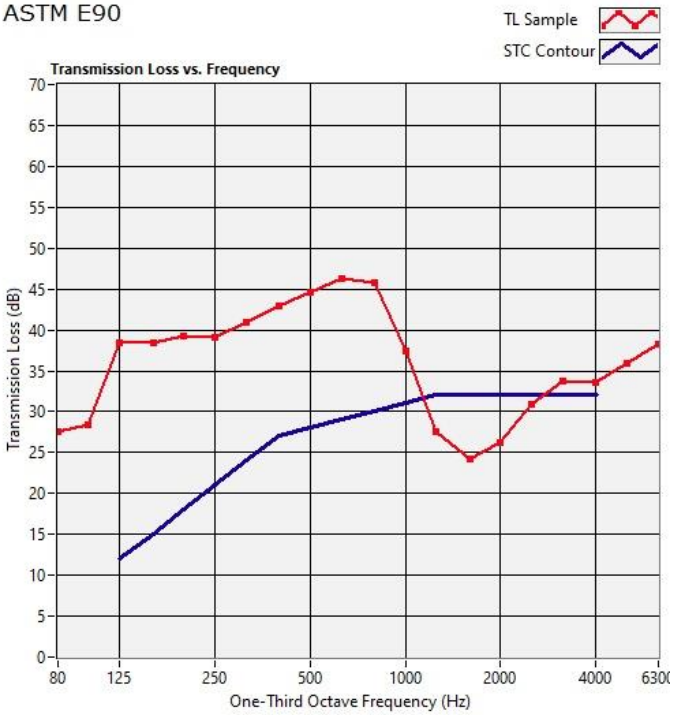
Data Table

	TL (dB)	deficiencies	95% CI
80	28	-	2.60
100	28	-	1.97
125	38	0	2.67
160	38	0	1.80
200	39	0	0.77
250	39	0	1.12
315	41	0	0.63
400	43	0	0.48
500	45	0	0.43
630	46	0	0.41
800	46	0	0.30
1000	37	0	0.38
1250	28	4	0.30
1600	24	8	0.35
2000	26	6	0.37
2500	31	1	0.35
3150	34	0	0.37
4000	34	0	0.36
5000	36	-	0.39

Source Room
Temperature 21.5 °C
R.H. 56 %

Receive Room
Temperature 21.1 °C
R.H. 56 %

ATM
987 hPa



STC Rating	deficiencies	OITC
28	19	31

\# background < 5.0 below receive room
* 95% Confidence Interval exceeded

Test Results:

SOUND TRANSMISSION LOSS
ASTM E90

General Information

Project No.:	ESP042289P-2
Customer:	EverKem Diversified Products
Test Date:	05-29-2024
Specimen ID:	Full Wall
Specimen Description:	Sound Seal 90 SS90 Filled 1/2" Gap with Sound Seal 90 SS90 108.00" W x 96.00" H - 72.00 ft²
Specimen (depth-weight):	" - lbs
Operator:	SJM

Data Table

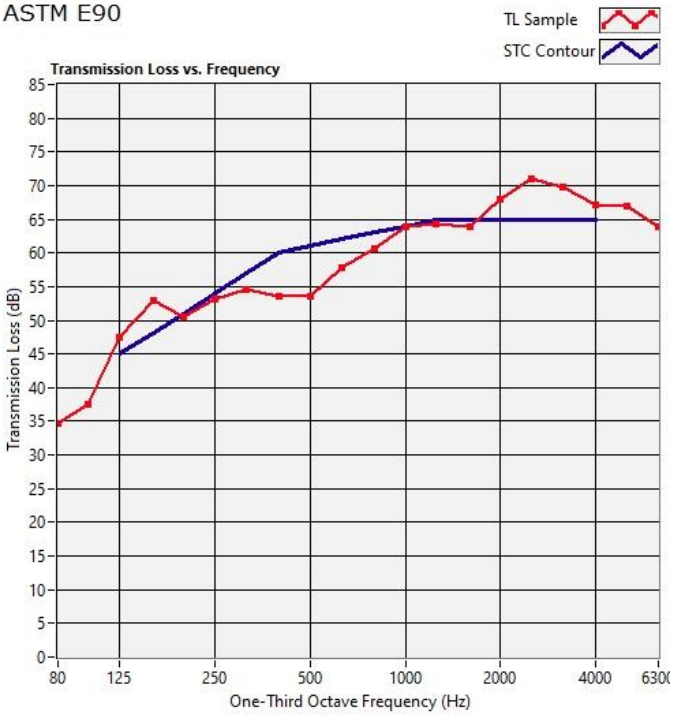
	TL (dB)	deficiencies	95% CI
80	35	-	2.50
100	37	-	1.88
125	48	0	1.90
160	53	0	1.94
200	50	1	0.88
250	53	1	0.95
315	55	2	0.63
400	54	6	0.61
500	54	7	0.55
630	58	4	0.40
800	61	2	0.31
1000	64	0	0.37
1250	64	1	0.38
1600	64	1	0.30
2000	68	0	0.28
2500	71	0	0.32
3150	70 #	0	0.30
4000	67 #	0	0.33
5000	67 #	-	0.51

background < 5.0 below receive room
* 95% Confidence Interval exceeded

Source Room
Temperature 21.9 °C
R.H. 49 %

Receive Room
Temperature 21.5 °C
R.H. 44 %

ATM 988 hPa



STC Rating	deficiencies	OITC
61	25	50

Ear Controlled Data

Test Results:

SOUND TRANSMISSION LOSS
ASTM E90

General Information

Project No.:	ESP042289P-3
Customer:	EverKem Diversified Products
Test Date:	05-29-2024
Specimen ID:	Full Wall
Specimen Description:	Sound Seal 90 SS90 Cured 24hrs Filled 1/2" Gap with Sound Seal 90 SS90 108.00" W x 96.00" H - 72.00 ft²
Specimen (depth-weight):	" - lbs
Operator:	SJM

Data Table

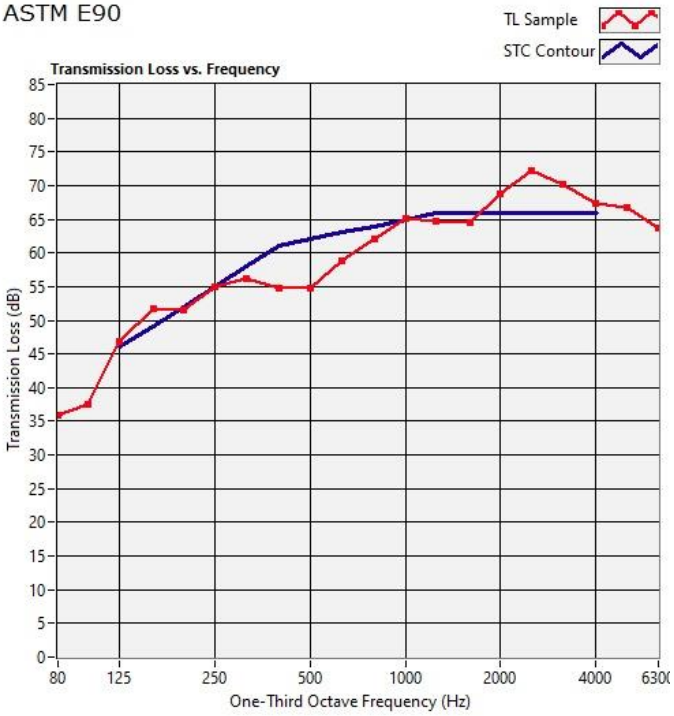
	TL (dB)	deficiencies	95% CI
80	36	-	2.80
100	38	-	2.38
125	47	0	2.47
160	52	0	2.03
200	51	1	0.88
250	55	0	0.84
315	56	2	0.53
400	55	6	0.48
500	55	7	0.38
630	59	4	0.46
800	62	2	0.38
1000	65	0	0.42
1250	65	1	0.40
1600	64	2	0.34
2000	69	0	0.29
2500	72 #	0	0.27
3150	70 #	0	0.23
4000	67 #	0	0.32
5000	67 #	-	0.31

background < 5.0 below receive room
* 95% Confidence Interval exceeded

Source Room
Temperature 22.0 °C
R.H. 45 %

Receive Room
Temperature 21.4 °C
R.H. 44 %

ATM 995 hPa



STC Rating	deficiencies	OITC
62	25	51

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