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SOUND TRANSMISSION TESTING CONDUCTED ON
A Karp STC 2424 Access Door
Installed in one side of an STC 64 wall

Karp Associates, Inc.
260 Spagnoli Road
Melville, NY 11747

Date:	August 21, 2015
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Report Number:	ESP020589P-1

ACCREDITED

Ear Controlled Data

This Page Alone is not a complete report

Sound Transmission Class Testing (ASTM E90)

INTRODUCTION:

This report presents results of acoustical testing of New Acoustical Access Door. This testing was requested by Karp Associates Inc. and was completed on August 10, 2015.

This report must not be reproduced except in full without the approval of Element Materials Technology. The test results contained in this report pertain only to the specific assemblies tested and not necessarily to all similar constructions.

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
Baseline Test: Filler wall value	*64*	*26*	*53*
Test 1: Access Door tested as received (Operable)	*64*	*26*	*52*

Determination:

The sample maintained the wall assemblies STC value of 64, when installed as per the manufacturer's instructions with an acoustic (green glue) adhesive (one side of the wall open for installing the sample) and the edges sealed with mastic putty.

Tabular and graphical presentations of the data are presented under "TEST RESULTS" below. Individual wall constructions are listed below.

SPECIMEN DESCRIPTION:

The specimen was identified as Karp's STC 2424 Acoustical Access Door. The sample consisted of a steel frame, a steel door, and an operating hardware. It measured approximately 24"x24" and weighed 31.8lbs. A 1/16" foam strip was applied to the door frame.

Wall Construction:

The test wall was constructed using two separate walls: Source Room and Receive Room. The Source Rooms wall was constructed with nominal 2x4 wood studs, R-13 Fiberglass insulation, two layers of 5/8" drywall, and a layer of Durarock concrete panels, all seams were sealed with acrylic caulk. Receive room was constructed with nominal 2x8 wood studs, R-19 fiberglass insulation, and two layers of 5/8" drywall, all seams were caulked.

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The test sample was framed into the source wall opening using a 2x4 buck and sealing the perimeter with duct seal. The receive wall did not have a corresponding opening, wall was left unopened.

TEST PROCEDURE

Sound Transmission Test

ASTM:E90(09), "Laboratory Measurement of Airborne Sound Transmission of Building Partitions," was followed in every respect. The STC value was obtained by applying the Transmission Loss (TL) values to the STC reference contour of ASTM: E413(10), "Determination of Sound Transmission Class." The actual transmission loss at each frequency was calculated by the following equations:

$$TL = NR + 10 \log S - 10 \log A_2$$

where: TL = Transmission Loss (dB)
NR = Noise Reduction (dB)
S = Surface area common to both sides (sq. ft.)
A_2 = Sound absorption of the receiving room with the sample in place (sabins)

OITC Procedure

ASTM:E1332(10), "Determination of Outdoor-Indoor Transmission Class", 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(10). 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-ft^3 (83-m^3) and the receiving room has a volume of 5825-ft^3 (165-m^3).

TEST EQUIPMENT:

Item Description	ID #	Manufacturer/Model	Serial #	Calibration Due	Location
1/2" Pressure Condenser Microphone	PT-162-095	BSWA/MP253	450007	9/16/15	Source Chamber
1/2" Pressure Condenser Microphone	PT-162-108	Gras/46AD	167994	12/5/15	Source Chamber
Microphone Calibrator	PT-162-076	Norsonic/1251	29144	5/12/16	N/A
Data Acquisition Module	PT-162-107	National Instruments/NI9234	195551B-01L	9/25/15	Control Center
Temp and Humidity Transmitter	PT-162-077	Dwyer Instruments/Series RH	M90714-E4SV-Y	6/4/16	Reverberation Chamber
Temp and Humidity Transmitter	PT-162-079	Dwyer Instruments/Series RH	M93237-E09W-A	6/4/16	Source Chamber

TEST RESULTS: BASELINE

SOUND TRANSMISSION LOSS
ASTM E90

General Information

Project No.:	ESP020589P-1
Customer:	Karp Associates
Test Date:	08-10-2015
Specimen ID:	Baseline
Specimen Description:	Wall Test 108.40" W x 96.50" H - 72.64 ft²
Specimen (depth-weight):	" - lbs
Operator:	PAD

Data Table

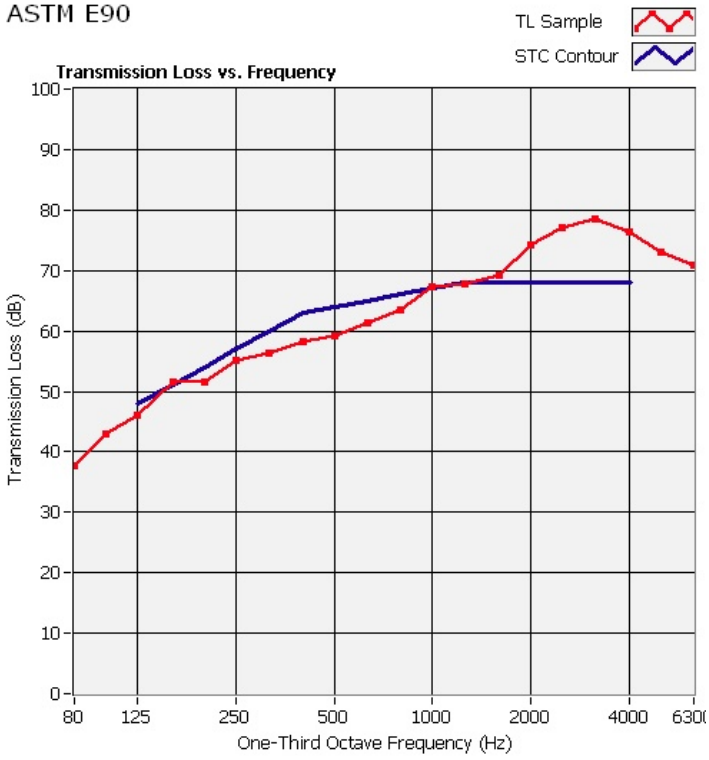
	TL (dB)	deficiencies	95% CI
80	38	-	2.04
100	43	-	2.01
125	46	2	2.51
160	52	0	1.87
200	52	2	1.14
250	55	2	1.06
315	56	4	0.73
400	58	5	0.64
500	59	5	0.51
630	61	4	0.46
800	64	2	0.41
1000	67	0	0.66
1250	68	0	0.65
1600	69	0	0.52
2000	74	0	0.36
2500	77	0	0.42
3150	79 #	0	0.45
4000	76 #	0	0.48
5000	73 #	-	0.36

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

Source Room
Temperature 22.2 °C
R.H. 61 %

Receive Room
Temperature 22.0 °C
R.H. 61 %

ATM
980 hPa



STC Rating	deficiencies	OITC
64	26	53

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TEST RESULTS: Test 1

SOUND TRANSMISSION LOSS
ASTM E90

General Information

Project No.:	ESP020589P-1
Customer:	Karp Associates
Test Date:	08-10-2015
Specimen ID:	STC 2424
Specimen Description:	Access Door Access Door 108.40" W x 96.50" H - 72.64 ft²
Specimen (depth-weight):	3" - 31.8 lbs
Operator:	PAD

Data Table

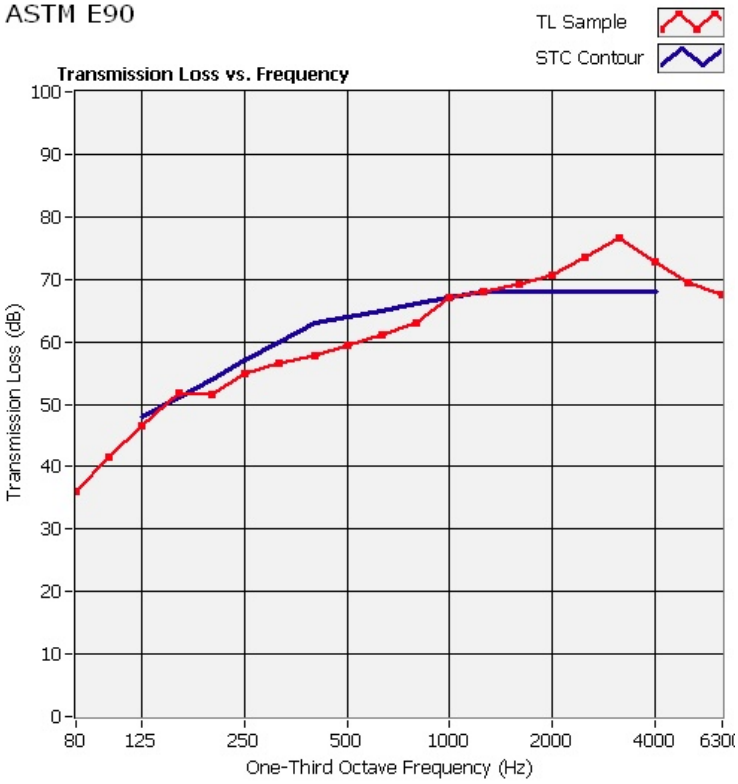
	TL (dB)	deficiencies	95% CI
80	36	-	2.35
100	41	-	2.24
125	47	1	1.82
160	52	0	2.54
200	51	3	1.21
250	55	2	0.80
315	57	3	0.67
400	58	5	0.59
500	59	5	0.43
630	61	4	0.47
800	63	3	0.51
1000	67	0	0.53
1250	68	0	0.48
1600	69	0	0.43
2000	71	0	0.35
2500	73	0	0.32
3150	77 #	0	0.29
4000	73 #	0	0.22
5000	69 #	-	0.36

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

Source Room
Temperature 22.4 °C
R.H. 62 %

Receive Room
Temperature 22.3 °C
R.H. 60 %

ATM
981 hPa



STC Rating	deficiencies	OITC
64	26	52

Ear Controlled Data