

THERMA-TRU CORPORATION ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK

ASTM E90 SOUND TRANSMISSION LOSS TESTING ON A
FG FULL LITE WITH MINIBLINDS, 3080 HIGH PERFORMANCE LEAF WITH FIBERGLASS SKIN

REPORT NUMBER

L1152.02-113-11-R1

TEST DATE

06/25/20

ISSUE DATE

07/06/20

REVISION 1 DATE

04/12/22

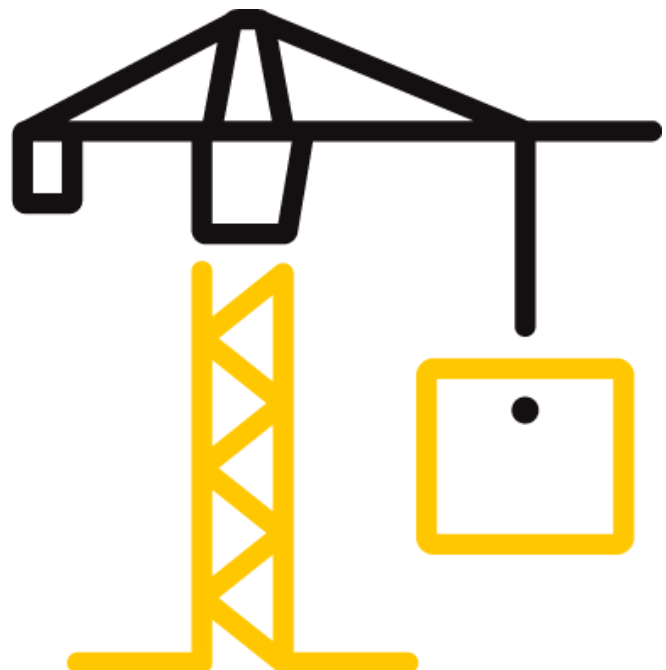
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TEST REPORT FOR THERMA-TRU CORPORATION

Report No.: L1152.02-113-11-R1

Revision 1 Date: 04/12/22 Date: 07/06/20

REPORT ISSUED TO

THERMA-TRU CORPORATION

6214 Monclova Road
Maumee, Ohio 43537

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Therma-Tru Corporation to conduct a sound transmission loss test. Results obtained are tested values and were secured by using the designated test methods. The complete test data is included herein. The client provided the test specimen. All measurements were conducted in the HT test chambers at Intertek B&C located in York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Intertek B&C will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period.

For INTERTEK B&C:

COMPLETED BY:	Zachary P. Golden	REVIEWED BY:	Kurt A. Golden
TITLE:	Technician Team Leader Acoustical Testing	TITLE:	Senior Project Lead Acoustical Testing
SIGNATURE:		SIGNATURE:	
DATE:	04/12/22	DATE:	04/12/22

ZPG:jmcs

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SECTION 2

SUMMARY OF TEST RESULTS

SERIES/MODEL	FG full lite with miniblinds
TYPE	3080 High performance leaf with fiberglass skin
DESCRIPTION	1" IG (1/8" tempered, 3/4" air space, 1/8" tempered)
TEST CONDITION	Inoperable (sealed with duct seal on both sides)

OPTION L1152.01B

MINIBLINDS CONDITION	Miniblinds up
DATA FILE NO.	L1152.01B
STC	32
OITC	27

OPTION L1152.01B2

MINIBLINDS CONDITION	Miniblinds down and closed
DATA FILE NO.	L1152.01B2
STC	32
OITC	27

SECTION 3

TEST METHODS

The specimens were evaluated in accordance with the following:

ASTM E90-09 (2016), *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*

ASTM E413-16, *Classification for Rating Sound Insulation*

ASTM E1332-16, *Standard Classification for Rating Outdoor-Indoor Sound Attenuation*

ASTM E2235-04 (2020), *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*

COMMENTS

Whether the tested door system utilizes wood or composite stile edges, the ratings would remain unchanged.

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SECTION 4

SPECIMEN INSTALLATION

A sound transmission loss test was initially performed on a filler wall.

The specimen plug was removed from the filler wall assembly. The specimen was placed on an isolation pad in the test opening. Duct seal was used to seal the perimeter of the specimen to the test opening on both sides. The interior side of the specimen, when installed, was approximately 1/4" from being flush with the receive room side of the filler wall. A stethoscope was used to check for any abnormal air leaks around the test specimen prior to testing. Operable portions of the test specimen, if any, were cycled at least five times prior to testing.

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**SECTION 5
EQUIPMENT**

The equipment listed below meets the requirements of the test methods stated in Section 3 of this report.

INSTRUMENT	MANUFACTURER	MODEL	DESCRIPTION	ASSET #	CAL DATE
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	63763-3*	04/20
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	65125*	05/20
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	65126*	05/20
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64902	10/19
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	65968	01/20
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	65103	03/20
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	64905	03/20
Source Room Microphone	PCB piezotronics	378C20	Microphone and Preamplifier	64906	03/20
Receive Room Microphone	PBC Piezotronics	378B20	Microphone and Preamplifier	64907	01/20
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64908	01/20
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64909	01/20
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64910	01/20
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64911	10/19
Receive Room Environmental Indicator	Comet	T7510	Receive Room	64915	01/20
Source Room Environmental Indicator	Comet	T7510	Source Room	64914	02/20
Microphone Calibrator	Norsonic	1251	Acoustical Calibrator	Y002919	04/20

*- Note: The calibration frequency for this equipment is every two years per the manufacturer's recommendation.

TEST CHAMBER

	VOLUME	DESCRIPTION
RECEIVE ROOM	234 m ³	Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor
SOURCE ROOM	207 m ³	Stationary diffusers only Temperature and humidity controlled

	MAXIMUM SIZE	DESCRIPTION
TL TEST OPENING	4.27 m wide by 3.05 m high	Vibration break between source and receive rooms

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SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Zachary P. Golden	Intertek B&C

SECTION 7

TEST PROCEDURE

The sensitivity of the microphones was checked before measurements were conducted.

The transmission loss values were obtained for a single direction of measurement.

Two background noise sound pressure level and five sound absorption measurements were conducted at each of five microphone positions.

Two sound pressure level measurements were made simultaneously in receive and source rooms at each of five microphone positions.

The air temperature and relative humidity conditions were monitored and recorded during all measurements.

Data for flanking limit tests, repeatability measurements, and reference specimen tests are available upon request.

The specimen was returned per the client's request.

SECTION 8

ACOUSTICAL TEST CALCULATIONS

Transmission loss (TL) at each 1/3 octave frequency is the average source room sound pressure level minus the average receive room sound pressure level, plus, 10 times the log of the specimen area divided by the sound absorption of the receive room with the sample in place.

STC Rating

To obtain the Sound Transmission Class (STC), read the TL of the contour curve at 500 Hz. The sum of the deficiencies below the contour curve must not exceed 32. The maximum deficiency at any one frequency must not exceed 8.

OITC Rating

The Outdoor-Indoor Transmission Class (OITC) is calculated by subtracting the logarithmic summation of the TL values from the logarithmic summation of the A-weighted transportation noise spectrum stated in ASTM E1332.

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SECTION 9

SPECIMEN DESCRIPTION

COMMENTS

The SMC skins with foam fill leaf was 36" by 96" and 1-3/4" thick with a day light opening size 21-1/2" by 74-1/2" and weight 95 lbs. Per the client's request, the contents of the door leaf are proprietary.

MEASURED OVERALL INSULATION GLASS UNIT THICKNESS	0.986"
SPACER TYPE	Aluminum

	EXTERIOR SHEET	GAP	INTERIOR SHEET
MEASURED THICKNESS	0.119"	0.746"	0.121"
MUNTIN PATTERN	N/A	N/A	N/A
MATERIAL	Tempered	Air*	Tempered
LAMINATE MATERIAL	N/A	N/A	N/A

GLAZING METHOD	Channel
GLAZING MATERIAL	Foam tape
GLAZING BEAD MATERIAL	NA

	TYPE	QUANTITY	LOCATION
WEATHERSTRIP	No weatherstrip		
HARDWARE	Lockset assembly	1	Lock rail
	Dead bolt	1	Lock rail
	Miniblinds	1	Air space between glass
DRAINAGE	No drainage		

TOTAL WEIGHT (lbs)	AVERAGE WEIGHT (lbs/ft²)
95	3.98

* - Stated per Client/Manufacturer, N/A-Not Applicable

COMMENTS

Whether the tested door system utilizes wood or composite stile edges, the ratings would remain unchanged.

Photographs are included in Section 11.

The client did not supply a report drawing of the test specimen.

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SECTION 10

TEST RESULTS

L1152.01B DATA

SPECIMEN AREA	2.22 m ²	RECEIVE TEMP.	22.5 °C	SOURCE TEMP	22.1 °C
TECHNICIAN	Zachary Gol	RECEIVE HUMIDITY	47%	SOURCE HUMIDIT	49%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION (m ²)	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	43.9	5.0	103	78	22	2.22	-
100	36.1	5.4	102	78	21	1.57	-
125	39.8	5.7	104	80	20	1.17	0
160	41.0	5.4	106	81	22	1.12	0
200	38.5	5.1	106	81	21	0.80	1
250	32.4	5.7	103	80	19	0.40	6
315	28.7	5.8	103	74	25	0.57	3
400	25.6	6.0	102	70	28	0.38	3
500	18.7	6.4	102	64	33	0.54	0
630	18.9	6.1	101	62	35	0.55	0
800	15.1	6.3	100	60	35	0.35	0
1000	13.8	6.7	102	64	33	0.35	2
1250	12.2	7.1	100	61	34	0.26	2
1600	8.9	7.6	99	66	28	0.21	8
2000	7.5	8.0	100	63	32	0.27	4
2500	7.0	9.0	101	53	41	0.18	0
3150	7.1	10.5	99	47	45	0.14	0
4000	7.8	13.1	97	53	36	0.14	0
5000	8.7	16.8	97	46	42	0.38	-
STC RATING	32 (Sound Transmission Class)						
DEFICIENCIES	29 (Sum of Deficiencies)						
OITC RATING	27 (Outdoor-Indoor Transmission Class)						

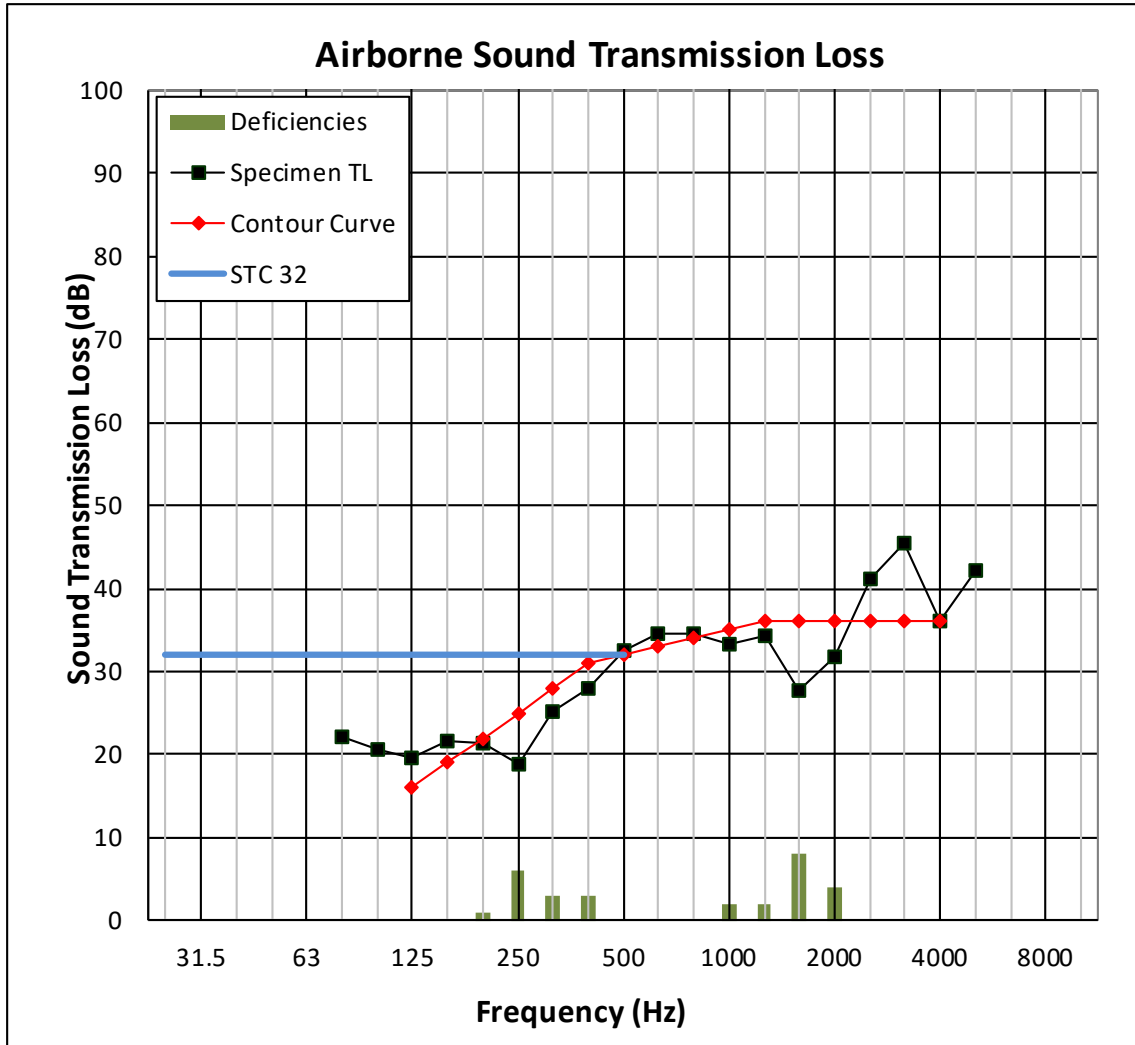
- Notes:**
- 1) Receive Room levels less than 5 dB above the Background levels are red.
 - 2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
 - 3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

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L1152.01B GRAPH



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L1152.01B2 DATA

SPECIMEN AREA	2.22 m ²	RECEIVE TEMP.	23.3 °C	SOURCE TEMP	22.9 °C
TECHNICIAN	Zachary Gol	RECEIVE HUMIDITY	46%	SOURCE HUMIDITY	47%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION (m ²)	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	41.0	5.6	103	77	22	2.05	-
100	36.7	5.5	102	77	21	1.55	-
125	37.7	5.7	104	80	20	1.07	0
160	40.5	5.4	106	80	22	1.02	0
200	39.0	5.1	106	81	21	0.72	1
250	34.0	5.6	103	81	18	0.39	7
315	29.0	6.0	103	74	25	0.57	3
400	26.6	6.1	103	70	28	0.45	3
500	22.1	6.6	102	64	33	0.55	0
630	19.3	6.2	102	61	36	0.52	0
800	15.6	6.4	100	60	35	0.36	0
1000	12.5	6.6	102	64	33	0.35	2
1250	11.1	7.1	100	61	34	0.28	2
1600	8.3	7.5	99	66	28	0.17	8
2000	8.0	8.1	100	63	32	0.28	4
2500	7.5	9.0	101	53	41	0.19	0
3150	7.6	10.5	99	46	46	0.13	0
4000	8.1	13.1	97	50	39	0.09	0
5000	8.9	16.8	97	45	43	0.38	-
STC RATING	32 (Sound Transmission Class)						
DEFICIENCIES	30 (Sum of Deficiencies)						
OITC RATING	27 (Outdoor-Indoor Transmission Class)						

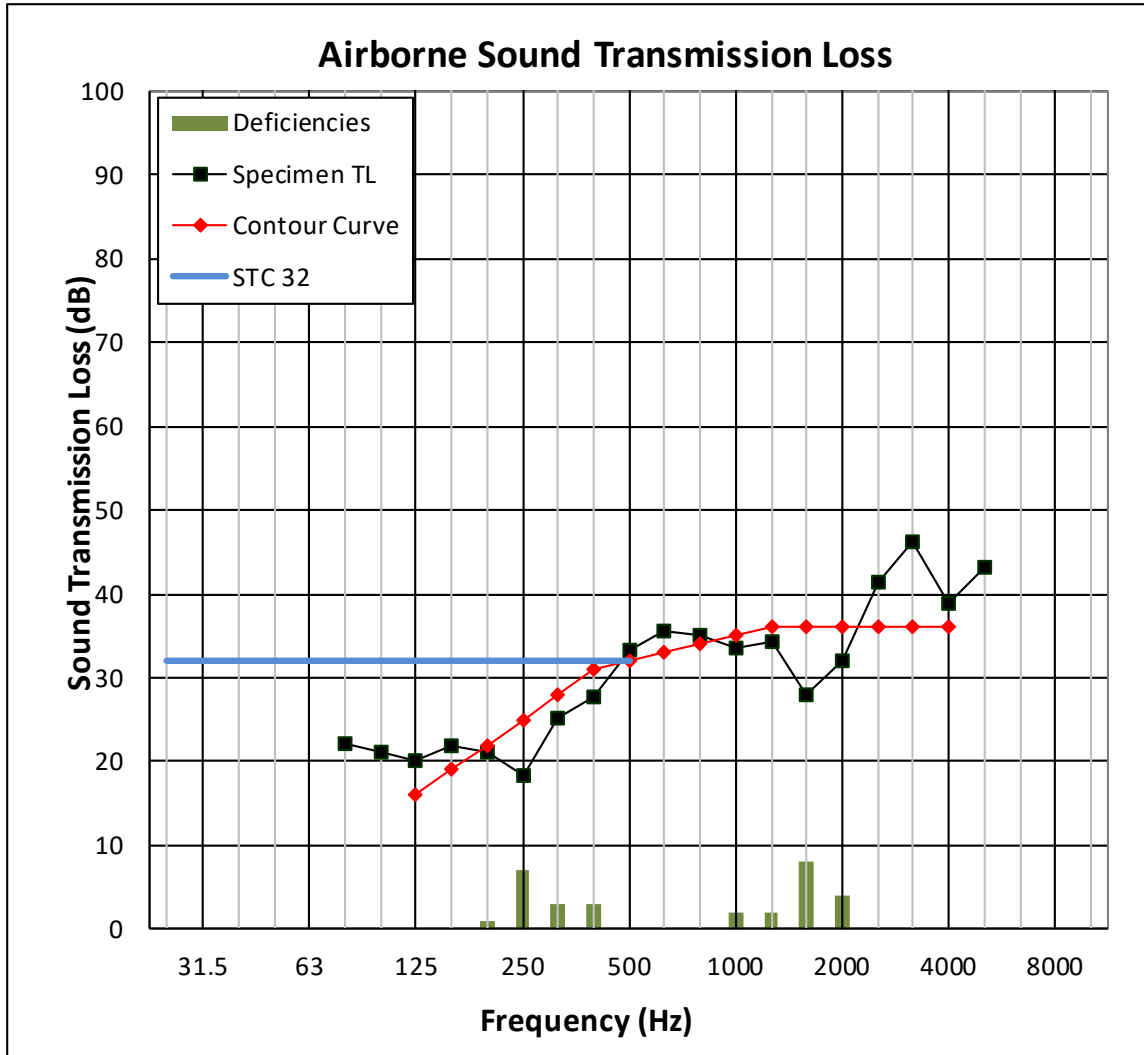
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L1152.01B2 GRAPH



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SECTION 11

PHOTOGRAPHS



Photo No. 1

Receive Room View of Installed Test Specimen L1152.01B



Photo No. 2

Source Room View of Installed Test Specimen L1152.01B

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Photo No. 3

Receive Room View of Installed Test Specimen L1152.01B2



Photo No. 4

Source Room View of Installed Test Specimen L1152.01B2

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SECTION 12

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	07/06/20	N/A	Original Report Issue
1	04/12/22	3, 7	Added Comments
1	04/12/22	All	Reformatted and changed total number of pages from 13 to 14