intertek
Total Quality. Assured.

THERMA-TRU CORPORATION

ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK
ASTM E90 SOUND TRANSMISSION LOSS TESTING ON A FIBERGLASS FOAM CORE FIRE DOOR, 3068

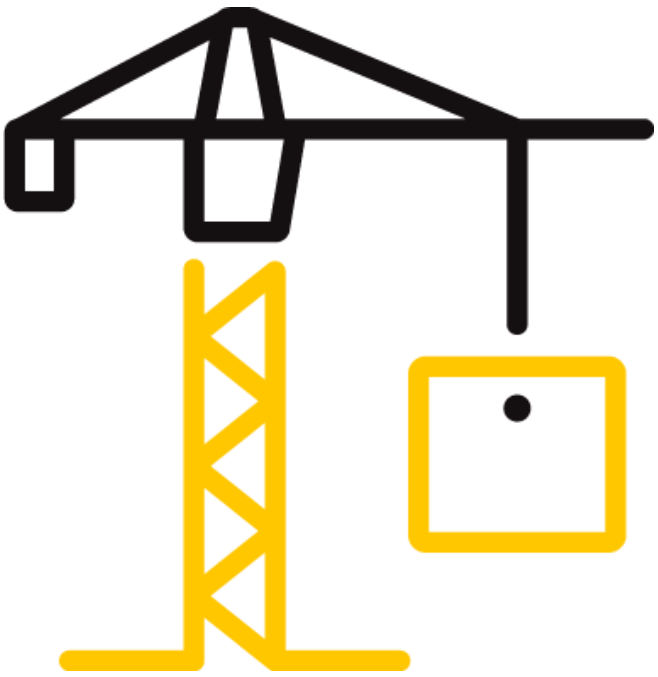
REPORT NUMBER
J4862.01-113-11-R0

TEST DATE
05/23/19

ISSUE DATE
07/02/19

PAGES
18

DOCUMENT CONTROL NUMBER
RT-R-AMER-Test-2756 (01/24/19)



130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR THERMA-TRU CORPORATION
Report No.: J4862.01-113-11-R0
Date: 07/02/19

REPORT ISSUED TO

THERMA-TRU CORPORATION
6214 Monciova 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:**	Todd D. Kister
TITLE:	Technician Team Leader Acoustical Testing	**TITLE:**	Laboratory Manager Acoustical Testing
SIGNATURE:	Digitally Signed by: Zachary Golden	**SIGNATURE:**	Digitally Signed by: Todd D. Kister
DATE:	07/02/19	**DATE:**	07/02/19

ZPG:jmcs

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR THERMA-TRU CORPORATION
Report No.: J4862.01-113-11-R0
Date: 07/02/19

SECTION 2
SUMMARY OF TEST RESULTS

OPTION A

SERIES/MODEL	Fiberglass Foam Core Fire Door
TYPE	3068 with 1" hinge stile

TEST CONDITION	Inoperable (Sealed with duct seal on both sides)
DATA FILE NO.	J4862.01A
STC	24
OITC	25

TEST CONDITION	Operable
DATA FILE NO.	J4862.01A1
STC	24
OITC	24

OPTION B

SERIES/MODEL	Fiberglass Foam Core Fire Door
TYPE	3068 with 4" hinge stile

TEST CONDITION	Inoperable (Sealed with duct seal on both sides)
DATA FILE NO.	J4862.01B
STC	24
OITC	25

TEST CONDITION	Operable
DATA FILE NO.	J4862.01B1
STC	24
OITC	24

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

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 (2012), *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*

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.

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

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	65125*	05/18
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	65126*	05/18
Data Acquisition Card	National Instruments	PXI-4462	Data Acquisition Card	63763-3*	04/18
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64902	12/18
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	64903	05/18
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	65103	03/19
Source Room Microphone	PCB Piezotronics	378C20	Microphone and Preamplifier	65905	03/19
Source Room Microphone	PCB piezotronics	378C20	Microphone and Preamplifier	65906	03/19
Receive Room Microphone	PBC Piezotronics	378B20	Microphone and Preamplifier	64907	12/18
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64908	12/18
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64909	12/18
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64910	12/18
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64911	01/19
Receive Room Environmental Indicator	Comet	T7510	Receive Room	64915	01/19
Source Room Environmental Indicator	Comet	T7510	Source Room	64914	03/19
Microphone Calibrator	Larson Davis	CAL200	Acoustical Calibrator	INT00852	09/18

**- 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

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR THERMA-TRU CORPORATION
Report No.: J4862.01-113-11-R0
Date: 07/02/19

SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Kurt A. Golden	Intertek B&C
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.

Intertek B&C will store samples of test specimens for four years.

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.

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR THERMA-TRU CORPORATION
Report No.: J4862.01-113-11-R0
Date: 07/02/19

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.

SECTION 9
SPECIMEN DESCRIPTION

	FRAME
SIZE	37-1/2" by 82"
THICKNESS	4-9/16"
CORNERS	Butted
FASTENERS	Screws
SEAL METHOD	Sealant
MATERIAL: HEAD AND JAMBS	Wood
MATERIAL: SILL	Aluminum
REINFORCEMENT	N/A
THERMAL BREAK MATERIAL	N/A
DAYLIGHT OPENING SIZE	N/A

LEAF SIZE
36" wide by 79-1/2" high by 1-11/16" thick

LEAF LAYERS (OUTSIDE TO INSIDE)	LAYER DESCRIPTION (MATERIAL AND THICKNESS)
1	0.090" Fiberglass
2	1-1/2" Polystyrene foam
3	0.090" Fiberglass

N/A-Not Applicable

OPTION A
There was 1" by 1-1/2" engineered wood reinforcing the hinge stile and bottom rail and 4" by 1-1/2" engineered wood reinforcing the lock stile and top rail.

OPTION B
There was 1" by 1-1/2" engineered wood reinforcing bottom rail and 4" by 1-1/2" engineered wood reinforcing the hinge stile, lock stile and top rail.

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR THERMA-TRU CORPORATION
Report No.: J4862.01-113-11-R0
Date: 07/02/19

	TYPE	QUANTITY	LOCATION
WEATHERSTRIP	Therma-Tru Long Reach foam-filled	1 Row	Head and lock jamb
	Q-Lon® p/n QEBD-825 foam-filled	1 Row	Hinge jamb
	Therma-Tru double bulb PVC door bottom	1 Row	Bottom rail
HARDWARE	Hinge	3	Hinge stile
	Lock assembly set	1	Lock stile
	Keeper	2	Keeper jamb
DRAINAGE	Sloped sill	1	Sill

OPTION	TOTAL WEIGHT (lbs)	AVERAGE WEIGHT (lbs/ft^2)
A	81	3.79
B	85	3.98

Photographs are included in Section 11.

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

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR THERMA-TRU CORPORATION

Report No.: J4862.01-113-11-R0
Date: 07/02/19

SECTION 10

TEST RESULTS

J4862.01A DATA (INOPERABLE CONDITION)

SPECIMEN AREA	1.98 m²	**RECEIVE TEMP.**	21.1 °C	**SOURCE TEMP**	21.1 °C
TECHNICIAN	Zachary Gol	**RECEIVE HUMIDITY**	48%	**SOURCE HUMIDIT**	48%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION (m²)	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	43.7	5.9	103	78	22	1.76	-
100	38.6	6.0	104	79	20	1.61	-
125	42.5	7.0	105	78	21	1.40	0
160	47.1	5.7	107	81	22	0.69	0
200	43.5	5.2	106	81	21	0.67	0
250	42.8	5.5	103	75	23	0.66	0
315	38.6	5.8	102	74	24	0.40	0
400	33.2	6.0	101	71	25	0.48	0
500	27.4	6.2	102	69	28	0.32	0
630	25.7	5.9	102	68	29	0.33	0
800	24.9	6.1	100	66	29	0.19	0
1000	23.2	6.2	101	66	30	0.31	0
1250	24.9	6.8	100	64	30	0.16	0
1600	22.9	7.1	99	64	30	0.26	0
2000	21.9	7.7	100	71	23	0.37	5
2500	19.2	8.8	100	73	20	0.25	8
3150	18.1	10.4	99	62	30	0.16	0
4000	14.2	12.9	97	50	39	0.42	0
5000	11.3	16.5	97	45	43	0.29	-
STC RATING		24	*(Sound Transmission Class)*				
DEFICIENCIES		13	*(Sum of Deficiencies)*				
OITC RATING		25	*(Outdoor-Indoor Transmission Class)*				

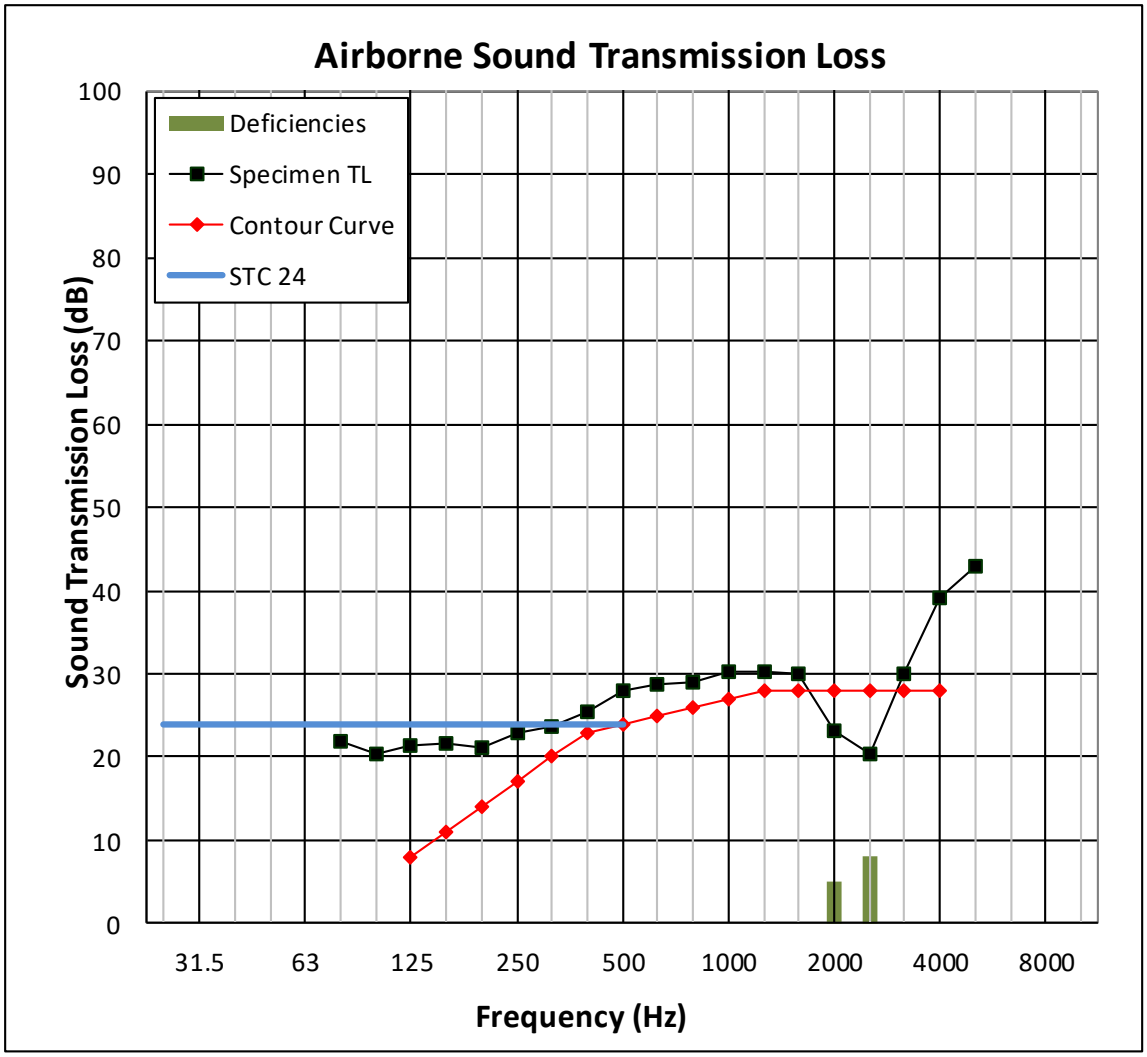
Notes: *1) Receive Room levels less than 5 dB above the Background levels are red.*
2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR THERMA-TRU CORPORATION
Report No.: J4862.01-113-11-R0
Date: 07/02/19

J4862.01A GRAPH (INOPERABLE CONDITION)



intertek
Total Quality. Assured.

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR THERMA-TRU CORPORATION

Report No.: J4862.01-113-11-R0
Date: 07/02/19

J4862.01A1 DATA (OPERABLE CONDITION)

SPECIMEN AREA	1.98 m²	**RECEIVE TEMP.**	21.2 °C	**SOURCE TEMP**	21.2 °C
TECHNICIAN	Zachary Gol	**RECEIVE HUMIDITY**	48%	**SOURCE HUMIDIT**	48%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION (m²)	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	42.4	5.7	103	78	22	1.72	-
100	37.0	5.0	104	80	21	1.53	-
125	40.3	6.2	105	79	21	1.37	0
160	45.0	5.3	106	81	21	0.89	0
200	41.6	5.2	106	81	21	0.78	0
250	40.8	5.5	102	76	22	0.61	0
315	37.7	5.9	103	74	23	0.29	0
400	29.5	6.1	101	72	25	0.38	0
500	24.7	6.2	102	70	27	0.42	0
630	23.2	6.0	102	69	28	0.44	0
800	23.8	6.2	100	67	28	0.24	0
1000	22.1	6.4	101	68	28	0.37	0
1250	24.3	6.9	100	66	28	0.12	0
1600	24.1	7.3	99	65	28	0.16	0
2000	23.3	7.8	100	71	23	0.30	5
2500	20.0	9.0	100	73	20	0.19	8
3150	18.7	10.3	99	62	30	0.14	0
4000	15.7	13.0	97	54	35	0.29	0
5000	13.3	16.6	97	50	38	0.30	-
STC RATING		24	*(Sound Transmission Class)*				
DEFICIENCIES		13	*(Sum of Deficiencies)*				
OITC RATING		24	*(Outdoor-Indoor Transmission Class)*				

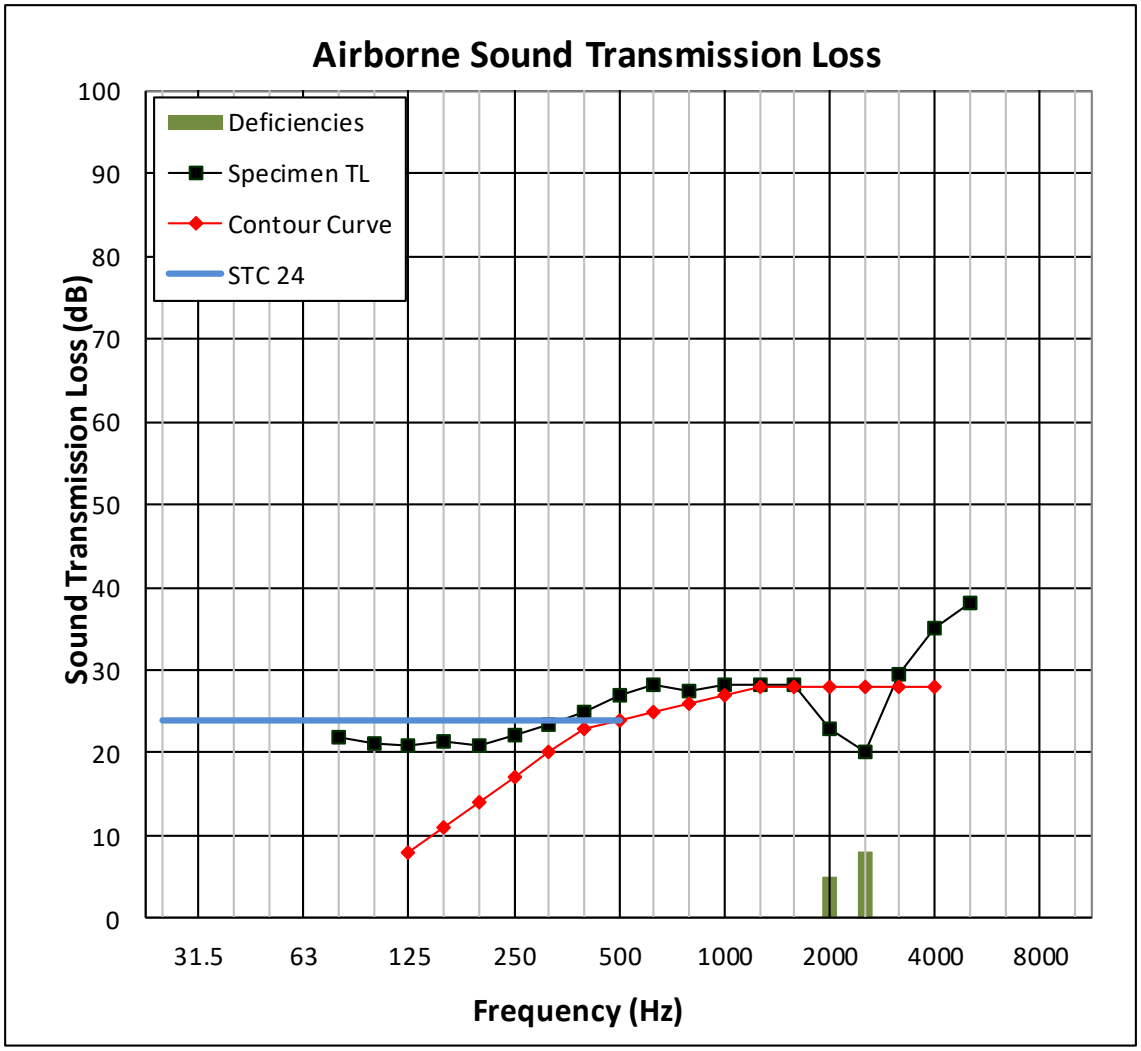
Notes: *1) Receive Room levels less than 5 dB above the Background levels are red.*
2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR THERMA-TRU CORPORATION
Report No.: J4862.01-113-11-R0
Date: 07/02/19

J4862.01A1 GRAPH (OPERABLE CONDITION)



intertek
Total Quality. Assured.

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR THERMA-TRU CORPORATION

Report No.: J4862.01-113-11-R0
Date: 07/02/19

J4862.01B DATA (INOPERABLE CONDITION)

SPECIMEN AREA	1.98 m²	**RECEIVE TEMP.**	21.3 °C	**SOURCE TEMP**	21.2 °C
TECHNICIAN	Zachary Gol	**RECEIVE HUMIDITY**	49%	**SOURCE HUMIDIT**	48%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION (m²)	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	41.8	6.1	103	78	21	1.62	-
100	35.8	5.8	105	80	20	1.64	-
125	38.6	6.1	105	79	21	1.37	0
160	44.7	5.4	107	81	22	0.73	0
200	40.3	4.9	106	81	22	0.79	0
250	37.7	5.5	103	76	23	0.56	0
315	35.0	5.5	102	74	24	0.36	0
400	27.3	6.0	101	71	26	0.30	0
500	23.2	6.2	101	69	27	0.37	0
630	21.8	5.8	102	68	29	0.48	0
800	20.7	6.1	100	66	29	0.26	0
1000	17.8	6.4	101	66	30	0.32	0
1250	18.8	6.8	100	64	31	0.18	0
1600	17.1	7.1	99	64	30	0.17	0
2000	15.9	7.6	100	70	24	0.30	4
2500	12.8	8.8	100	73	20	0.22	8
3150	10.9	10.2	99	63	29	0.13	0
4000	9.8	12.7	97	50	39	0.31	0
5000	9.9	16.3	97	46	42	0.32	-
STC RATING		24	*(Sound Transmission Class)*				
DEFICIENCIES		12	*(Sum of Deficiencies)*				
OITC RATING		25	*(Outdoor-Indoor Transmission Class)*				

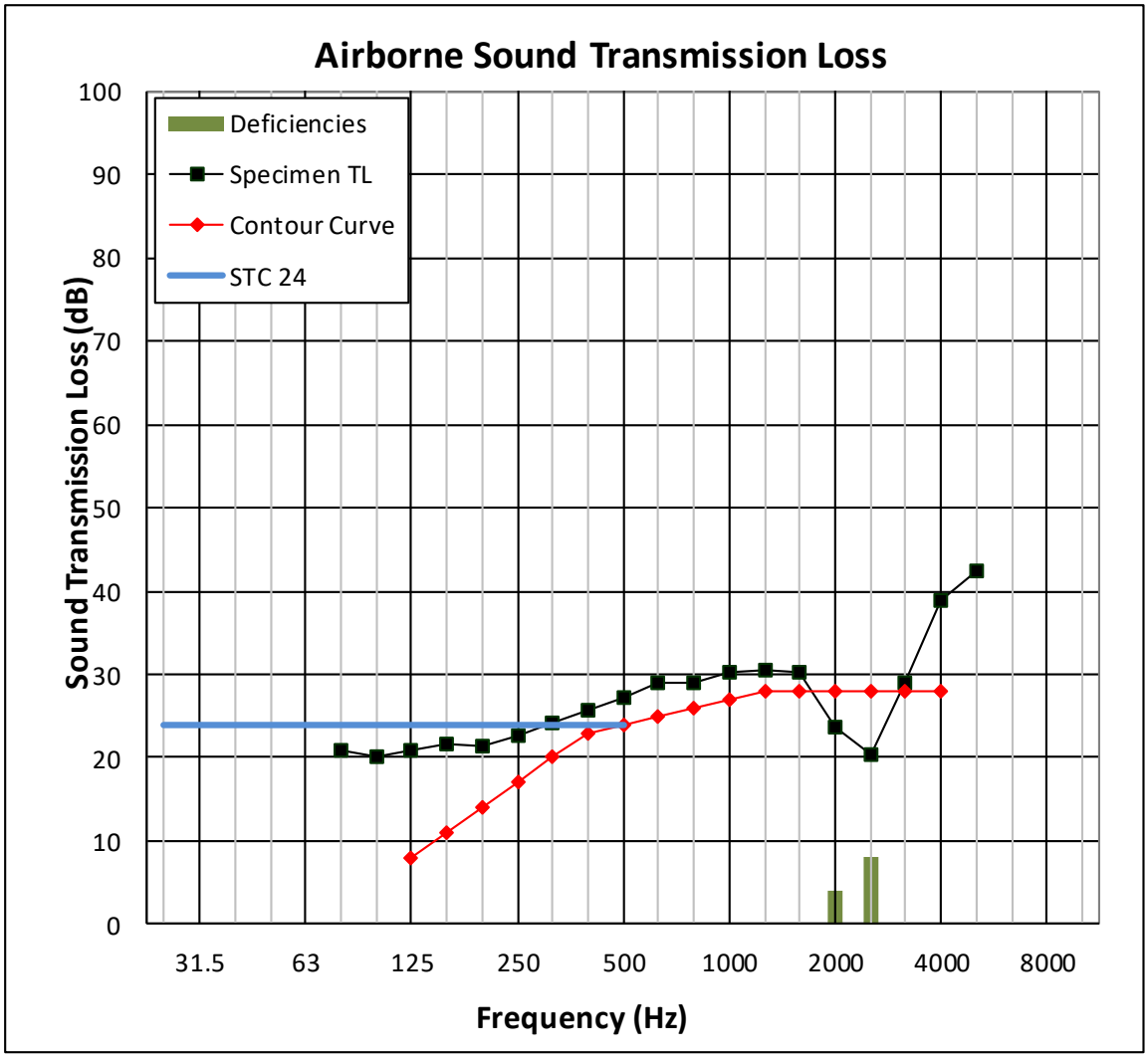
Notes: *1) Receive Room levels less than 5 dB above the Background levels are red.*
2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR THERMA-TRU CORPORATION
Report No.: J4862.01-113-11-R0
Date: 07/02/19

J4862.01B GRAPH (INOPERABLE CONDITION)



intertek
Total Quality. Assured.

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR THERMA-TRU CORPORATION

Report No.: J4862.01-113-11-R0
Date: 07/02/19

J4862.01B1 DATA (OPERABLE CONDITION)

SPECIMEN AREA	1.98 m²	**RECEIVE TEMP.**	21.3 °C	**SOURCE TEMP**	21.2 °C
TECHNICIAN	Zachary Gol	**RECEIVE HUMIDITY**	49%	**SOURCE HUMIDIT**	49%

FREQ (Hz)	BACKGROUND SPL (dB)	ABSORPTION (m²)	SOURCE SPL (dB)	RECEIVE SPL (dB)	SPECIMEN TL (dB)	95% CONFIDENCE LIMIT	NUMBER OF DEFICIENCIES
80	44.0	5.7	103	78	22	1.72	-
100	38.4	6.2	105	80	20	1.59	-
125	37.7	6.6	105	79	20	1.49	0
160	41.8	5.3	107	81	21	0.86	0
200	39.5	4.9	106	81	21	0.70	0
250	31.5	5.5	103	76	22	0.63	0
315	25.1	5.7	102	74	24	0.34	0
400	23.0	6.0	102	72	25	0.40	0
500	22.1	6.2	101	70	27	0.40	0
630	19.9	5.9	102	69	28	0.42	0
800	17.2	6.2	100	68	27	0.21	0
1000	24.1	6.4	101	68	28	0.39	0
1250	10.5	6.9	100	66	29	0.16	0
1600	8.9	7.3	99	65	29	0.13	0
2000	9.9	7.7	100	70	23	0.28	5
2500	8.3	8.8	100	73	20	0.21	8
3150	8.1	10.3	99	63	29	0.14	0
4000	8.7	12.8	97	54	35	0.26	0
5000	9.6	16.5	97	50	38	0.26	-
STC RATING		24	*(Sound Transmission Class)*				
DEFICIENCIES		13	*(Sum of Deficiencies)*				
OITC RATING		24	*(Outdoor-Indoor Transmission Class)*				

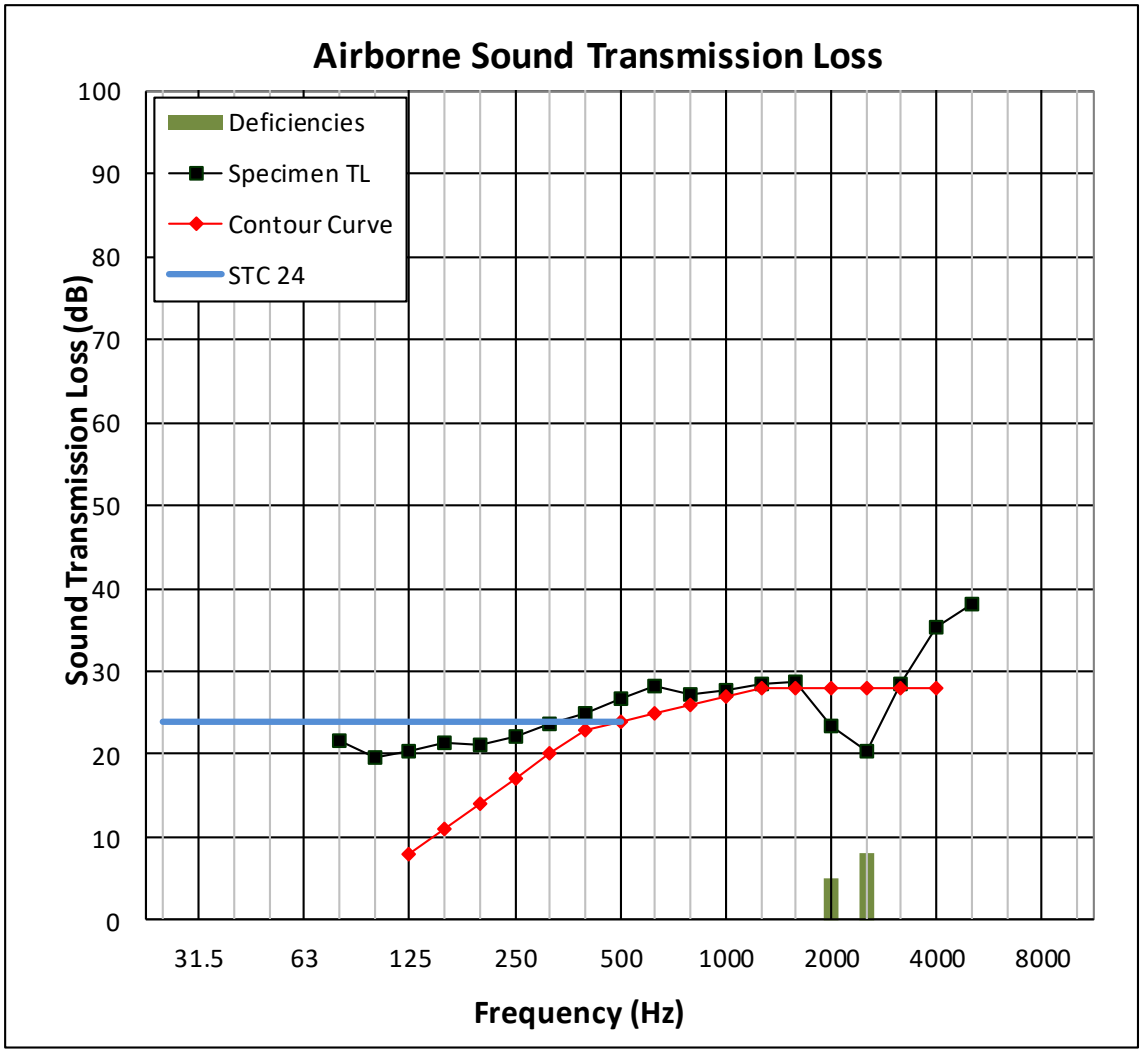
Notes: *1) Receive Room levels less than 5 dB above the Background levels are red.*
2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.
3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR THERMA-TRU CORPORATION
Report No.: J4862.01-113-11-R0
Date: 07/02/19

J4862.01B1 GRAPH (OPERABLE CONDITION)



130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

SECTION 11
PHOTOGRAPHS

Photo No. 1
Receive Room View of Installed Test Specimen

Photo No. 2
Source Room View of Installed Test Specimen

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

SECTION 12
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	07/02/19	N/A	Original Report Issue