



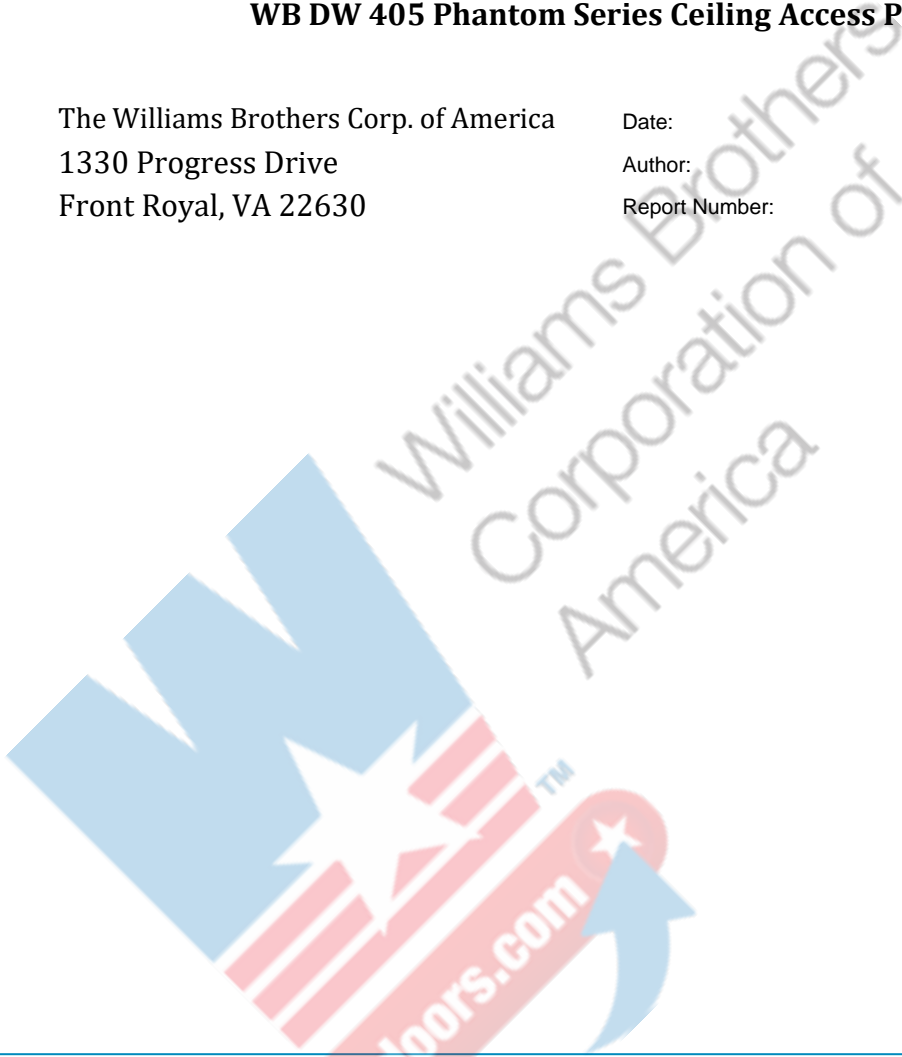
Element Materials Technology
 662 Cromwell Avenue
 St Paul, MN
 55114-1720 USA

P 651 645 3601
 F 651 659 7348
 T 888 786 7555
 info.stpaul@element.com
 element.com

SOUND TRANSMISSION TESTING CONDUCTED ON A WB DW 405 Phantom Series Ceiling Access Panel

The Williams Brothers Corp. of America
 1330 Progress Drive
 Front Royal, VA 22630

Date: February 12, 2025
 Author: Shaun Montgomery
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Sound Transmission Class Testing (ASTM E90)

INTRODUCTION:

This report presents results of acoustical testing of a WB DW 405 Phantom Series Ceiling Access Panel. This testing was requested by The Williams Brothers Corporation of America and was completed on January 14, 2025.

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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:

	<u>STC</u>	<u>def</u>	<u>OITC</u>
Baseline Test:			
Filler wall value	63	30	49
<hr/>			
Test 6:			
WB DW 405 Phantom Series Ceiling Access Panel	62	29	50

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 a WB DW 405 Phantom Series Ceiling Access Panel. The sample consisted of a 30” x 30” x 5/8” piece of drywall with a 24” x 24” x 5/8” cutout in the center of the sample.

Wall Construction:

The test wall was constructed using two separate walls separated by a ¾" space: Source room and Receive room. The Source room wall was constructed with nominal 2" x 4" wood studs placed 16" O.C., R-13 fiberglass insulation, two layers of 5/8" drywall, and a layer of Durock® cement board, all seams were sealed with duct tape. Receive room was constructed with nominal 2" x 8" wood studs placed 16" O.C., R-19 fiberglass insulation, and two layers of 5/8" drywall, all seams were sealed with duct tape.

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(22), "Determination of Sound Transmission Class." The actual transmission loss at each frequency was calculated by the following equations:

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

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), "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(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:

Acoustic Lab Calibrated Test Equipment For STC Tests

Item Description	ID #	Manufacturer/Model	Serial #	Calibration Due	Location
1/2" Pressure Condenser Microphone	PT-162-216	BSWA/MP253	450005	10/2/2025	Source Chamber
1/2" Pressure Condenser Microphone	PT-162-075	GRAS/40AD	19220-1244	5/20/2025	Reverberation Chamber
Microphone Calibrator	PT-162-226	Norsonic/1256	125626796	10/2/2025	N/A
Data Acquisition Module	PT-162-107	National Instruments/NI9234	1735986-1893EB3	8/8/2025	Control Center
Temp and Humidity Transmitter	PT-162-077	Dwyer Instruments/Series RH	M90714-E4SV-Y	6/7/2025	Reverberation Chamber
Temp and Humidity Transmitter	PT-162-079	Dwyer Instruments/Series RH	M93237-E09W-A	6/7/2025	Source Chamber

TEST RESULTS: BASELINE

SOUND TRANSMISSION LOSS ASTM E90

General Information

Project No.:	ESP042978P-3
Customer:	WB Doors
Test Date:	01-11-2025
Specimen ID:	Baseline Wall Test
Specimen Description:	Standard Full Wall Baseline Value 108.25" W x 96.12" H - 72.26 ft²
Specimen (depth-weight):	14" - lbs
Operator:	SJM

Data Table

	TL (dB)	deficiencies	95% CI
80	35	-	2.16
100	35	-	2.58
125	48	0	2.03
160	51	0	1.78
200	50	3	0.78
250	52	4	0.84
315	52	7	0.76
400	54	8	0.48
500	59	4	0.40
630	62	2	0.41
800	64	1	0.31
1000	67	0	0.44
1250	67	0	0.35
1600	66	1	0.29
2000	70	0	0.28
2500	73 #	0	0.38
3150	70 #	0	0.27
4000	67 #	0	0.25
5000	67 #	-	0.28

Source Room

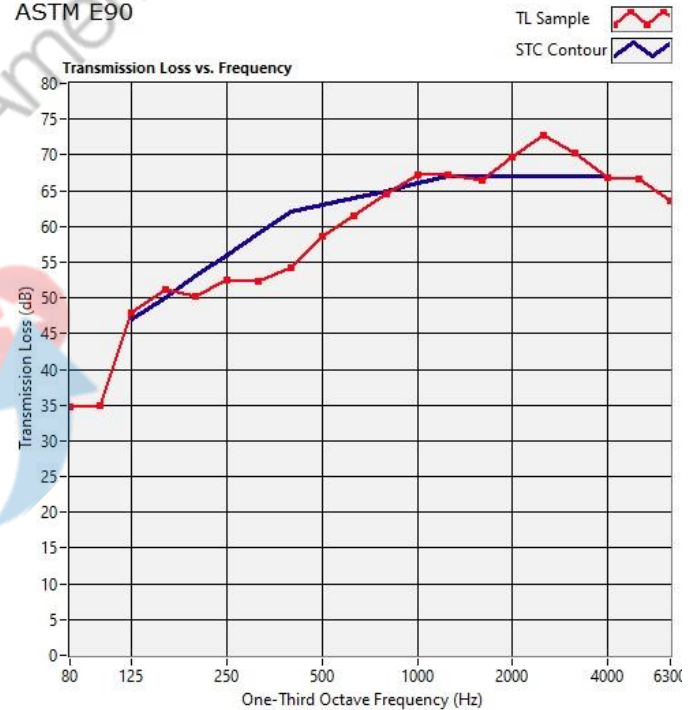
Temperature	21.4 °C
R.H.	49 %

Receive Room

Temperature	20.9 °C
R.H.	49 %

ATM

974 hPa



STC Rating

63

deficiencies

30

OITC

49

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

TEST RESULTS: WB DW 405 Phantom Series Ceiling Access Panel:

SOUND TRANSMISSION LOSS

ASTM E90

General Information

Project No.:	ESP042978P-6
Customer:	WB Doors
Test Date:	01-14-2025
Specimen ID:	WB DW 405
Specimen Description:	Phantom Series Ceiling Access Panel Access Door 108.25" W x 96.12" H - 72.26 ft²
Specimen (depth-weight):	3/4" - TBD lbs
Operator:	SJM

Data Table

	TL (dB)	deficiencies	95% CI
80	34	-	2.46
100	38	-	1.95
125	48	0	1.81
160	51	0	1.79
200	49	3	0.65
250	51	4	0.56
315	52	6	0.71
400	54	7	0.59
500	58	4	0.41
630	60	3	0.30
800	63	1	0.42
1000	66	0	0.32
1250	66	0	0.25
1600	65	1	0.27
2000	68	0	0.38
2500	72 #	0	0.35
3150	70 #	0	0.51
4000	67 #	0	0.21
5000	67 #	-	0.38

Source Room

Temperature

20.9 °C

R.H.

47 %

Receive Room

Temperature

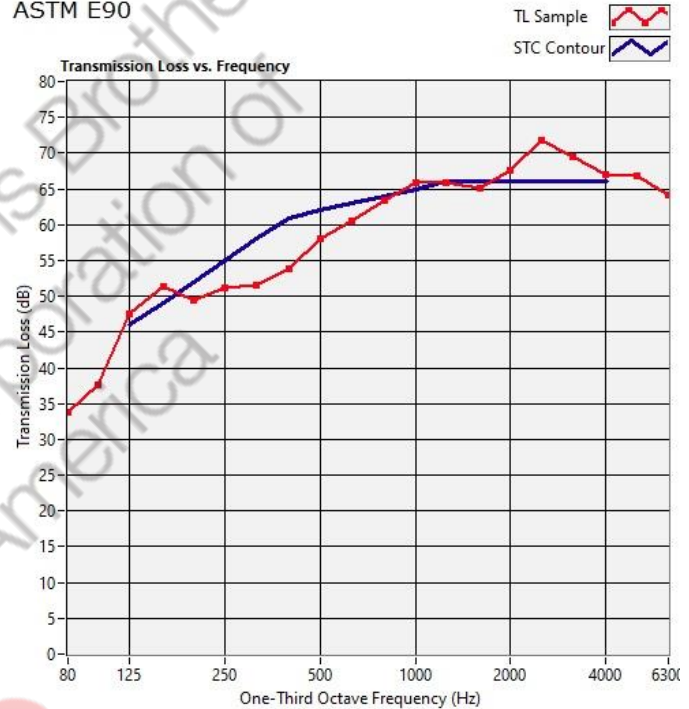
20.2 °C

R.H.

50 %

ATM

998 hPa



STC Rating

62

deficiencies

29

OITC

50

background < 5.0 below receive room

* 95% Confidence Interval exceeded

Shaun Montgomery
Senior Fenestration Technician
Fenestration Department
651-659-7260
Shaun.montgomery@element.com




TESTING CERT #98.03

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