

TEST REPORT

for

Spirit Acoustics Inc.
103 Sparta Rd., Unit D 3
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Herbert J Morgan III / 908-508-0050

Sound Attenuation of Suspended Ceiling Test ASTM E 1414 / E1414 M-16 / E413-16

On


Speech Guard Ceiling Overlay System Acoustical Light Hoods Ceiling Tile Backers

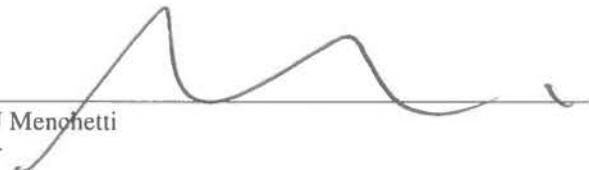
Report Number: NGC 6020011

Assignment Number: G-1718

Test Date: 10/15/2020

Report Approval Date: 10/26/2020

Submitted by: 
Anthony J. Rivers
Test Technician

Reviewed by: 
Robert J. Menchetti
Director

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Revision Summary:

Date	SUMMARY
Approval Date: 10/26/2020	Original issue date: 10/26/2020 Original NGCTS report: NGC 6020011

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Test Method: This test method explicitly with the American society of testing materials standard test method for airborne and soundboard attenuation between rooms sharing a common ceiling Plano Dash designation

Specimen Designation: Ceiling panel samples identified by client as, Speech Guard Drop Tile Overlay System. This sample was described by the client as: (4) Four - SGS Acoustical Light Hoods, SGS 5/16 in. damping layer Shield Guard Tile Backers over all tiles.

Grid System Description: Suspended ceiling system consisting of nominal 610mm x 1213mm x 31.8mm (24 in. x 48 in. x 1.25 in.) lay-in ceiling panels. The T-grid system was Armstrong Prelude XL Exposed Tee System. Main tee part number ARM7301. Cross tee part number ARMXL7348. Tee cross number ARMXL7328. All mains and tees had a 23.8mm (15/16 in.) wide face. (4) Four - Lithonia 2PM3N2x4NY recessed fixtures.

The specimen was sealed with caulk between the grid face and the top of the dividing partition. The metal grid system was installed continuous at the dividing partition.

Ceiling panels were observed to consist of:

Face Finish: Perforated and Fissured with latex paint finish.
Panel Core: Square Mineral Fiber ceiling tile measured at 603.25mm x 1212.85mm x 17.5mm (23-3/4 in. X 47-3/4 in. X .625 in.)
Backing Layer: Damping layer plus layer of 5/16 in. composite tile backer
Overall Thickness: 23.8mm (.9375 in.).
Weight: 15.3 kg/m² (1.06 PSF)
Panel Size: 603.25mm x 1212.85mm (23-3/4 in. x 47-3/4 in.)

Light Hoods were observed to consist of:

Face Finish: Black polyester
Light Hood Core: Molded fiberglass measured at 787.4mm x 1397 x 228.6mm (31 in. x 55 in. x 9 in.)
Overall Thickness: 25.4mm (1 in.)
Weight: .482kg/m² (98.72 PSF)
Light Hood Size: at 787.4mm x 1397 x 228.6mm (31 in. x 55 in. x 9 in.)

Ceiling Test Area: 26 sq. meters
Suspension System Type: IE
Data Normalization: The 'direct method' of measuring the receiving room absorption was used
Preconditioning: Minimum 24 hours at 70°F, 55% R.H.
Test Results: The results of the test are given on pages 4 and 5.

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Sound Attenuation by Suspended Ceiling							
Test: ASTM E 1414 - 16 / ASTM E 413 -16							
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Spec. Area [m²]: 12							
Source room				Receiving room			
Volume [m³]: 41.26		Rm Temp [°C]: 21		Volume [m³]: 41.26		Rm Temp [°C]: 25	
Humidity [%]: 53				Humidity [%]: 50			
Ceiling Attenuation Class CAC [dB] = 38							
Sum of Unfavorable Deviations [dB]: 22							
Maximum Unfavorable Deviation [dB]: 4				at 4 Hz			
Frequency [Hz]	D _{n,c} [dB]	L1 [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔD _{n,c}
100	23	101.4	81.6	45.5	3.3	-	0.762
125	28	98.8	73.6	53.6	2.9	-	0.632
160	30	93.7	66.2	48.8	2.4	-	0.648
200	34	98.7	67.2	43.2	2.6	-	0.374
250	31	96.8	69.0	46.5	3.2	2	0.200
315	32	95.7	65.4	46.9	1.8	3	0.173
400	34	94.0	61.3	44.8	1.3	1	0.200
500	37	95.6	59.4	47.2	0.8	1	0.141
630	38	94.8	56.4	46.9	-0.4	1	0.173
800	39	93.9	53.4	45.8	-1.5	-	0.100
1000	42	93.7	51.2	46.9	-0.5	1	0.100
1250	41	91.6	49.5	47.6	-1.1	3	0.100
1600	39	89.4	49.6	50.8	-0.8	4	0.100
2000	38	89.4	50.6	53.6	-0.8	2	0.100
2500	40	90.4	50.4	57.1	0.1	4	0.100
3150	38	88.8	50.5	60.0	-0.3	6	0.100
4000	36	87.7	51.0	64.5	-0.7	-	-
5000	34	86.1	50.6	71.4	-1.5	-	0.100

D_{n,c} = Normalized Ceiling Attenuation, dB
 L1 = Source Room Level, dB
 L2 = Receiving Room Level, dB
 d = Decay Rate, dB/second
 Δ D_{n,c} = Uncertainty for 95% Confidence Level

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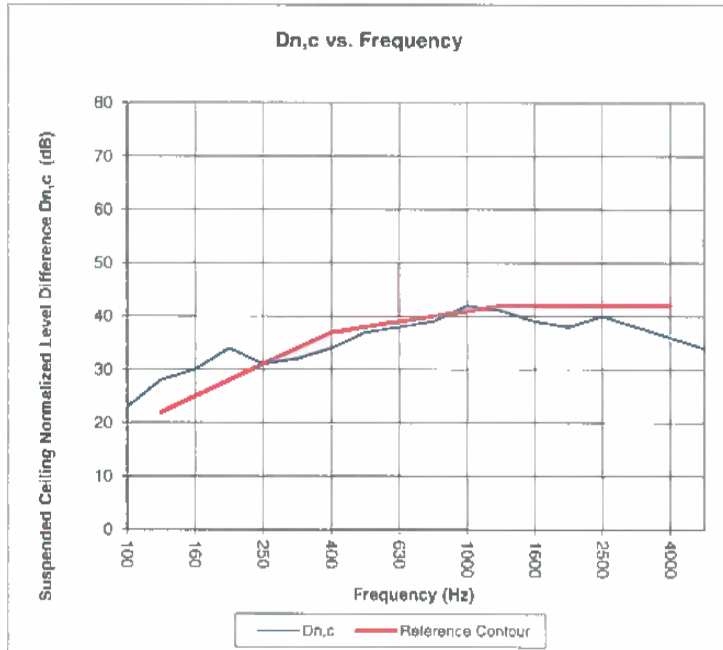
Sound Attenuation by Suspended Ceiling

Test: ASTM E 1414 - 16 / ASTM E 413 -16

Test Report: NGC6020011
 Test Date: 10/15/2020
 Specimen Size [m²]: 12

Ceiling Attenuation Class CAC [dB] = 38 dB

Frequency [Hz]	D _{n,c} [dB]	ΔD _{n,c}
100	23	0.762
125	28	0.632
160	30	0.648
200	34	0.374
250	31	0.200
315	32	0.173
400	34	0.200
500	37	0.141
630	38	0.173
800	39	0.100
1000	42	0.100
1250	41	0.100
1600	39	0.100
2000	38	0.100
2500	40	0.100
3150	38	0.100
4000	36	--
5000	34	0.100



* Due to high insulating value of specimen, background levels limit results at these frequencies.

D_{n,c} = Normalized Ceiling Attenuation, dB
 Δ D_{n,c} = Uncertainty for 95% Confidence Level

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