

**LABORATORY MEASUREMENT  
USING TEST METHOD ASTM C423-99a OF  
SOUND ABSORPTION COEFFICIENTS OF  
TC-417 GP SPRAY-ON TREATMENT**

Prepared for:

**THERMACOUSTIC INDUSTRIES INTERNATIONAL LTD.**  
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Prepared by:

**THE UNIVERSITY OF ALBERTA  
MECHANICAL ENGINEERING ACOUSTICS AND NOISE UNIT**

**JOB NUMBER: 01-06-A  
20 AUGUST 2001**

*C. Barra*  
20 Aug. '01

UNIVERSITY OF ALBERTA  
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EDMONTON, ALBERTA, CANADA

DETERMINATION OF NOISE REDUCTION COEFFICIENT (NRC)  
ACCORDING TO ASTM STANDARD: C423-90a

DATE: 31 July 2001  
CLIENT: ThermaCoustic Industries Ltd.

TEST NO: 1  
TEST PERFORMED BY:  
Corjan Buma, P.ENG.

REVERB ROOM VOLUME: 228.3621 Cubic Meters  
MICROPHONE PLACED AT 7 FIXED POSITIONS

ENVIRONMENT:	TIME	DATE	TEMP(C)	RH(%)	ATMOSPHERIC PRESSURE (KPa)
# 1 EMPTY ROOM:	18:42	07-31-01	18.80	58.25	93.18 (700.8 mm Hg @ 21.0 C)
# 7 EMPTY ROOM:	19:28	07-31-01	18.70	59.14	93.18 (700.8 mm Hg @ 21.0 C)
# 1 SAMPLE ROOM:	17:02	07-31-01	18.54	57.75	93.18 (700.7 mm Hg @ 19.9 C)
# 7 SAMPLE ROOM:	18:03	07-31-01	18.50	58.98	93.18 (700.7 mm Hg @ 19.9 C)

TEST SAMPLE SURFACE AREA : 6.764 Sq m [ 2.447 m wide by 2.764 m high]  
MOUNTING CONFIGURATION : 'A'

TEST SAMPLE DESCRIPTION :  
Sound Absorption Data of TC-417 GP Specimen; nominal thickness 2 inches

FREQ (Hz)	EMPTY RT60 (sec)	SAMPLE RT60 (sec)	TOTAL METRIC SABINE	ABSORB COEFF	COEFF UNCERTAINTY (+/-)
50	2.40	2.39	0.25	0.04	0.60
63	2.38	2.19	1.14	0.17	0.81
80	3.71	3.07	2.07	0.31	0.20
100	3.52	2.79	2.83	0.42	0.20
125	4.15	2.97	3.52	0.52	0.09
160	4.75	3.16	3.94	0.58	0.15
200	5.63	3.21	4.98	0.74	0.11
250	5.54	3.06	5.41	0.80	0.05
315	5.41	2.83	6.25	0.92	0.09
400	5.35	2.65	7.06	1.04	0.07
500	5.10	2.49	7.57	1.12	0.05
630	4.84	2.47	7.34	1.08	0.06
800	4.66	2.40	7.45	1.10	0.04
1000	4.18	2.31	7.17	1.06	0.04
1250	3.85	2.21	7.13	1.05	0.06
1600	3.63	2.14	7.06	1.04	0.03
2000	3.41	2.05	7.20	1.07	0.03
2500	3.13	1.95	7.12	1.05	0.05
3150	2.80	1.81	7.25	1.07	0.03
4000	2.36	1.61	7.23	1.07	0.03
5000	1.92	1.39	7.19	1.06	0.04

NRC = 1.00

