

# Johns Manville Technical Center Acoustical Laboratories

Contract Report 500-1569 (A98-088)

July 31, 1998

Subject:

**Random Incidence Absorption of Whisper Wall Acousticloud  
Baffle**

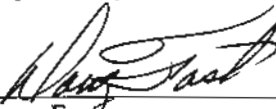
For

**Whisper Walls  
10957 E. Bethany  
Aurora, CO 80014**

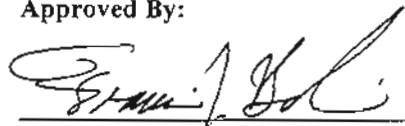
Submitted by:

**Johns Manville Technical Center  
P. O. Box 625005  
Littleton, CO 80162-5005**

Reported By:

  
\_\_\_\_\_  
Doug Fast  
Associate Research Technologist  
Materials Performance Technology

Approved By:

  
\_\_\_\_\_  
Francis J. Babineau  
Acoustics Laboratory Engineer  
Materials Performance Technology

Approved By:

  
\_\_\_\_\_  
Richard A. Christjansen  
Director  
Materials Performance Technology



NOTE: THE CONTENT OF THIS REPORT RELATES ONLY TO THE ITEMS TESTED AND THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE PRIOR CONSENT OF THE ISSUING LABORATORY. USE OF THIS REPORT TO CLAIM PRODUCT ENDORSEMENT BY NVLAP OR ANY AGENCY OF THE U.S. GOVERNMENT IS PROHIBITED.

Accredited by Department of Commerce, National Voluntary Laboratory Accreditation Program for Selected Test Methods for Acoustics.

## INTRODUCTION

A series of measurements were made on July 31, 1998 at the Johns Manville Technical Center (JMTC) Acoustical Laboratories to determine the random incidence sound absorption of an Acousticloud baffle, provided by Whisper Wall. Measurements were made in full accordance with the requirements of current ASTM standard test methods C 423-90a.

## TEST SPECIMEN

The specimen submitted for testing was delivered on July 31, 1998 and is described by the client as follows:

Acousticloud baffle:                   Casing-Whisper Walls 2.0 in. polymer baffle extrusion, 48.0 in. x 96.0 in. x 2.0 in. nominal dimensions.  
  Core-Acoustitherm 600 fiberglass core  
  Covering-standard 100% polyester panel fabric.   Total system wt. = 44.0 lb.

## TEST METHOD

The tests were conducted in full accordance with the American Society of Testing and Materials (ASTM) methods C 423-90a, "Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method".

### C 423-90a:

The specimen was tested in a Type H mounting. As required by the test method, the sample was suspended at least 1.5 m away from any vertical surface and not parallel to a wall, as required by ASTM E 795-93.

### Test Chambers

The JMTC reverberation rooms are constructed of 305 mm [12 inch] thick, reinforced concrete and is surrounded by 203 mm [8 inch] thick solid concrete block walls which are spaced from the reinforced concrete walls a distance of 203 mm [8 inches]. The large reverberation room has interior dimensions of 8.66 m [28 feet-5 inches] in length by 5.49 m [18 feet] in width with a height of 6.71 m [22 feet] for a total volume of 319 cubic meters [11,253 cubic feet].

### Instrumentation

All sound pressure levels were measured using a Brüel and Kjær ½" type 4143 condenser microphone operating on a Brüel and Kjær type 3923 rotating microphone boom. The microphone was calibrated immediately before all measurements were started using Brüel and Kjær type 4220 pistonphone with output corrected for local barometric pressure.



NOTE: THE CONTENT OF THIS REPORT RELATES ONLY TO THE ITEMS TESTED AND THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE PRIOR CONSENT OF THE ISSUING LABORATORY. USE OF THIS REPORT TO CLAIM PRODUCT ENDORSEMENT BY NVLAP OR ANY AGENCY OF THE U.S. GOVERNMENT IS PROHIBITED.

Accredited by Department of Commerce, National Voluntary Laboratory Accreditation Program for Selected Test Methods for Acoustics.

The microphone was connected to a Norwegian Electronics type NE-830 digital frequency analyzer which was configured to average the microphone output over multiple sample/decay periods. Measurements were made at the third-octave bands covering a center frequency range of from 100 to 5,000 Hz. The rate of sound field decay was determined by making a regressive fit to the average of 10 ensembles of 5 decays each.

### TEST RESULTS

The detailed results of the test, including third-octave band absorption data, absorption coefficient curves and 95% confidence intervals are presented as pages 4 and 5 of this document for the Whisper Wall Acousticloud baffle. The Noise Reduction Coefficient (NRC) value is shown below. Test data sheets of the system's performance, as printed by the test equipment, are kept on record within the laboratory.

**Whisper Wall Acousticloud Baffle**      **NRC = 0.80**  
**± NRC @ 95% C.L. = 0.035**



NOTE: THE CONTENT OF THIS REPORT RELATES ONLY TO THE ITEMS TESTED AND THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE PRIOR CONSENT OF THE ISSUING LABORATORY. USE OF THIS REPORT TO CLAIM PRODUCT ENDORSEMENT BY NVLAP OR ANY AGENCY OF THE U.S. GOVERNMENT IS PROHIBITED.

Accredited by Department of Commerce, National Voluntary Laboratory Accreditation Program for Selected Test Methods for Acoustics.



# Johns Manville Technical Center Acoustical Laboratories

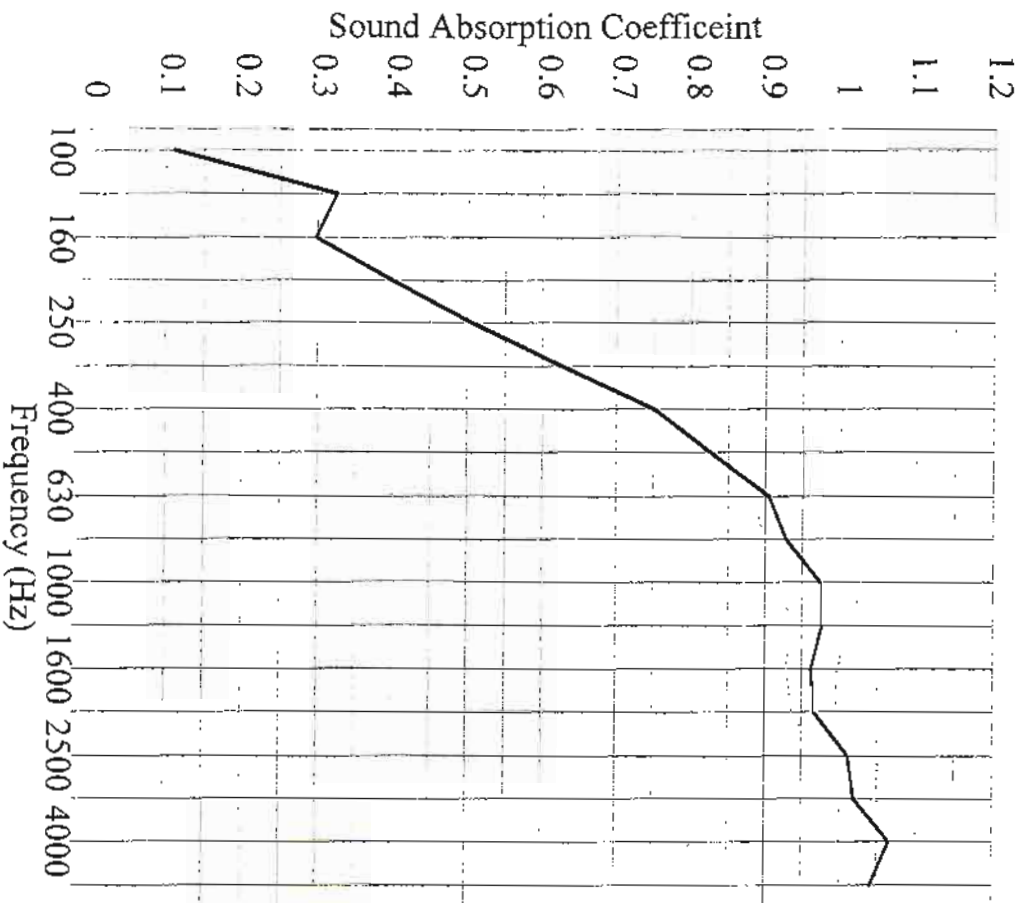
## Sound Absorption by ASTM C423

Test Date: 31-Jul-98

Sample ID: A98-088

Sample Description: Whisper Walls Acousticloud Baffle

NRC = 0.80



Dashed lines are ± 95% confidence limits

**NVLAP**

Accredited by the Department of Commerce,  
National Voluntary Laboratory Accreditation  
Program for selected test methods for acoustics.