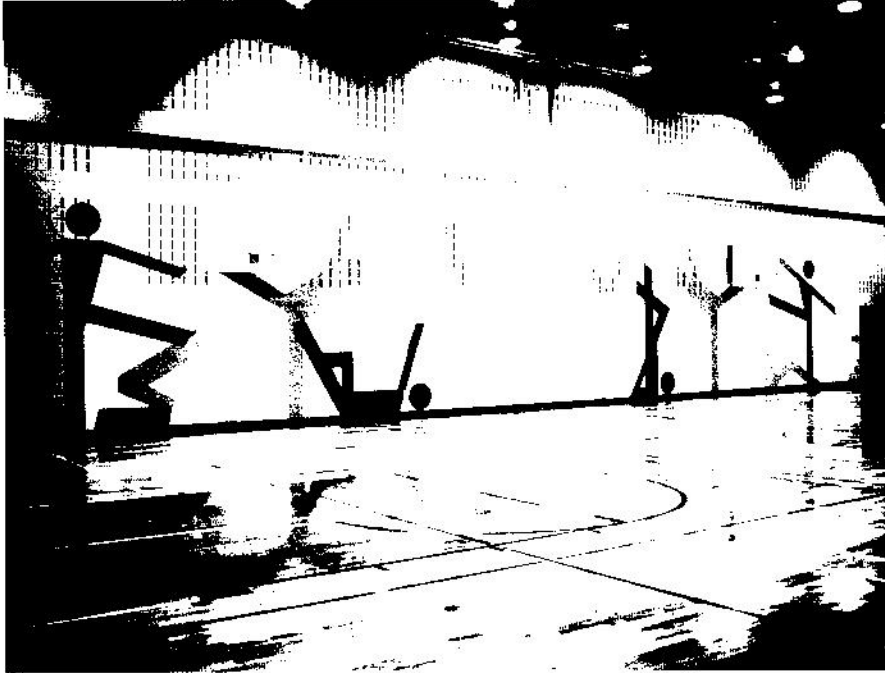


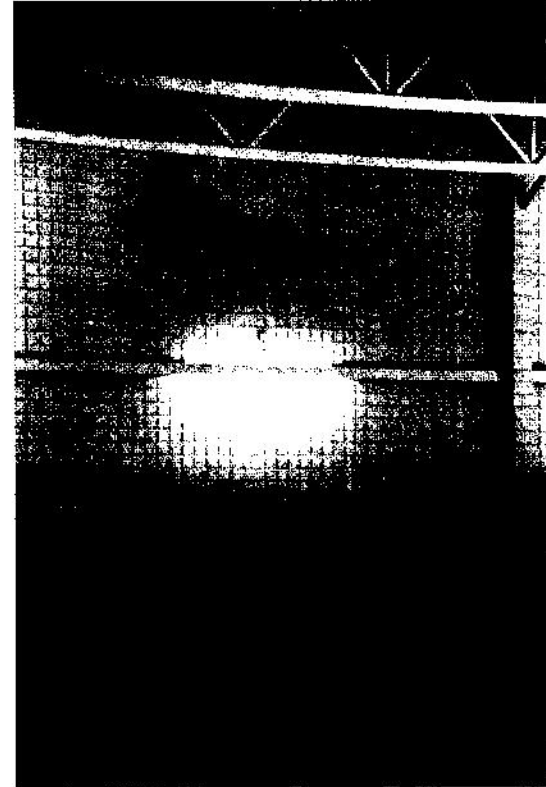
SOUNDBLOX®

PATENTED

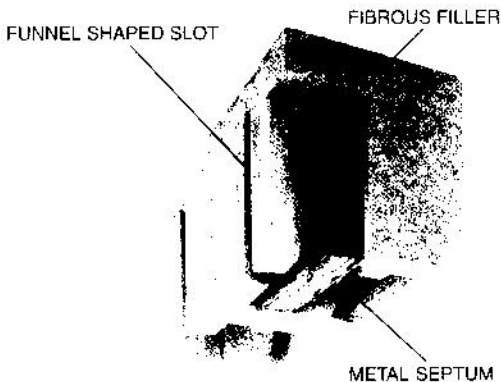
SOUND-ABSORBING STRUCTURAL MASONRY UNITS



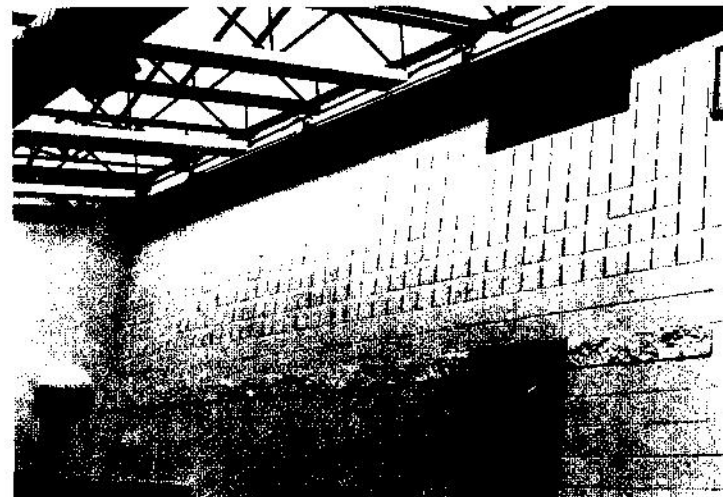
John XXIII High School, Calgary, Alberta
Architects: The Leblond Partnership



Max Bell Center, Calgary, Alberta
Architects: John D. Rule



IT'S WHAT YOU DON'T SEE IN
SOUNDBLOX® UNITS
THAT MAKES THE
BIG DIFFERENCE



Daysland Junior High School, Daysland, Alberta
Architects: Wood, Gardner, O'Neil, O'Neil



WESTERN NOISE CONTROL LTD.
1-800-661-7241

INTRODUCTION TO WNC

Western Noise Control Ltd. has been supplying acoustic correction and noise control products since 1974. We have worked with Architects, Engineers and Designers to control noise levels in a wide variety of applications through the incorporation of **SOUNDBLOX®**. Millions of these "sound absorbing masonry units" are in place throughout Canada and much of the world today.

INTRODUCTION TO SOUNDBLOX®

SOUNDBLOX® units offer a **durable, attractive, efficient, and cost effective** medium for acoustical correction and noise control. They are made with the same materials as regular masonry units which provide long lasting durability. They can be painted with murals or surfaced with glazing to suit any decor. The "Helmholtz Resonance" Cavity design ensures excellent sound absorption and their in-place cost is comparable to that of ordinary masonry unit construction with retrofit acoustical products.

ACOUSTIC PERFORMANCE

In many situations **SOUNDBLOX® can eliminate the need to use other, separately installed, acoustical materials.** They derive their excellent sound absorption from a patented cavity-slot construction. The cavities are closed at the top and the slots allow the closed cavities to act as damped (Helmholtz) resonators. This design offers enhanced low frequency absorption. **SOUNDBLOX®** do not rely on their surface finish for sound absorption properties. They can be painted or glazed without hindering the acoustic performance.

The amount of sound absorbed by properly installed **SOUNDBLOX®** is increased dramatically when the Acoustic Inserts (metal septum / fibrous fillers) are incorporated into the resonator cavities. In effect, the specially designed metal septa, which reflect the higher frequencies but transmit the lower frequencies, create two resonators in each block cavity where only one existed before. Tuned to different frequencies, the **dual resonators** in combination with the **funnel shaped slots** provide higher levels of sound absorption across a wider range of frequencies.

SOUNDBLOX® - SOUND ABSORPTION COEFFICIENTS

SIZE	TYPE	FREQUENCY IN HERTZ (Hz)						NRC
		125	250	500	1000	2000	4000	
10 cm	R	.19	.83	.41	.38	.42	.40	.50
10 cm	RF	.20	.88	.63	.65	.52	.43	.65
15 cm	R	.62	.84	.36	.43	.27	.50	.50
15 cm	RF	.39	.99	.65	.58	.43	.45	.65
20 cm	R	.97	.44	.38	.39	.50	.60	.45
20 cm	RF	.70	.77	.61	.48	.44	.41	.60
20 cm	RSCF	.50	1.00	1.06	.66	.56	.72	.80
20 cm	RSRF	.70	.77	.61	.48	.44	.41	.60
25 cm	R	.19	.83	.41	.38	.42	.40	.50
25 cm	RF	.20	.88	.63	.65	.52	.43	.65
25 cm	RSCF	.18	.64	1.02	.72	.80	.58	.80
30 cm	R	.19	.83	.41	.38	.42	.40	.50
30 cm	RF	.20	.88	.63	.65	.52	.43	.65
30 cm	RSCF	.18	.64	1.02	.72	.80	.58	.80

The sound absorption values shown above were determined in accordance with ASTM Designation C423-66 by Geiger and Hamme Acoustical Laboratories.

SOUND TRANSMISSION LOSS CHARACTERISTICS

SOUND TRANSMISSION CLASS (STC): 53

(Measured for a wall constructed of 20 cm Type RF Soundblox® units)

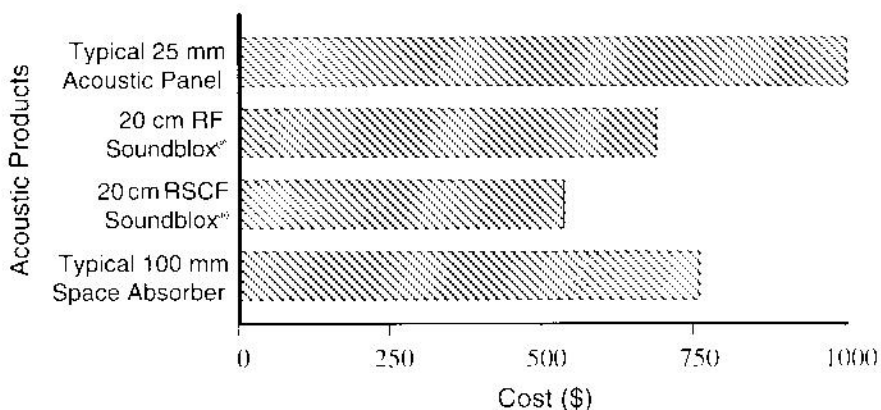
Frequency (Hertz)	125	250	500	1000	2000	4000
STL (dB)	36	44	50	54	58	56

Using the same test method (NCMA-TEK 69B, KAL 369-5-66), ordinary hollow concrete blocks show an STC rating of 46. Thus, **SOUNDBLOX®** walls have markedly **better sound transmission loss** than walls constructed of ordinary blocks of the same dimensions.

COST AND ACOUSTIC COMPARISONS

SOUNDBLOX® are installed conventionally, **without added labour**, making their **in-place cost low** when compared with many other acoustical materials. When compared to the additional supply and labour cost of installing an acoustical product in front of an ordinary masonry wall, the over-all cost of a **SOUNDBLOX®** wall is comparatively less and still offers the same acoustic performance. The chart below shows this comparison.

COST OF DIFFERENT PRODUCTS PROVIDING THE SAME ABSORPTION



WESTERN NOISE CONTROL LTD. 1-800-661-7241

STRUCTURAL PERFORMANCE

SOUNDBLOX® meet CSA standard A165.1-1964, for hollow load-bearing concrete masonry units. Therefore, SOUNDBLOX® can be incorporated wherever ordinary hollow masonry blocks are used.

Rugged durability permits the use of SOUNDBLOX® units in walls of industrial plants, gymnasiums, etc. where acoustical treatment is often most advantageously placed. This is usually impractical using soft, non-durable materials.

TYPES AND USES

The original **Type A-1** series Soundblox® has narrow slots and unfilled cavities. It provides excellent sound absorption at 125 Hz.

The **Type R** series Soundblox® are not provided with Acoustic Inserts. Unlike the **Type A-1** this version has wide funnel-shaped slots that direct sound into the specially designed "Helmholtz Resonance" cavities which increase the overall acoustical absorption.

The **Type RF** series Soundblox® are provided with Acoustic Inserts that are inserted into the Helmholtz Resonance cavities. The Acoustic Inserts are made of a fibrous material bonded to a specially designed thin metal septum. Essentially the inserts divide the cavities acoustically and provide better sound absorption over all the major sound frequencies. In some cases the NRC value is increased from .50 to .65.

The 20 cm **Type R** and **Type RF** SOUNDBLOX® units have their maximum sound absorption at low frequencies which can be very advantageous in areas such as industrial plants, natatoriums, mechanical equipment rooms, fan rooms, transformer stations, etc., where low frequencies are dominant.

Due to the rear thru-chamber design and knock-outs, the 25 / 30 cm **Type R**, **Type RF**, and **Type RSCF** Soundblox® can be horizontally and vertically reinforced and thus may be used in situations requiring high load bearing capacity.

The **Type RSCF** series is a design of Soundblox® that offers an enhanced sound absorption rating (NRC value) of .80 or greater. This sound absorption value is similar to that of a typical 25mm acoustical panel. Soundblox® Masonry Units are part of the building structure so their supplied and installed cost is comparatively less. The 20 cm **Type RSCF** Soundblox® uses a sequential design with 4 chambers. The 25 / 30 cm **Type RSCF** Soundblox® uses a sequential design with 3 chambers to increase the NRC value without affecting the structural ability.

FIRE PERFORMANCE

Fire Endurance. Fire testing in accordance with ASTM E-119 requirements show fire endurance ratings of up to 3 hours + for load-bearing walls built with SOUNDBLOX® units. Specific details will be supplied upon request.

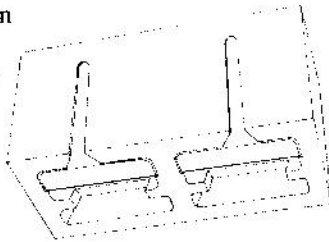
SOUNDBLOX® FIRE RATINGS

Soundblox® Size (cm)	Equivalent Thickness (mm)	Fire Rating (hours)
10	69	3/4
15	96	1+
20	120	2
25	133	2
30	149	3

Fire ratings are based on the requirements of the 1985 National Building Code, appendix B-Fire performance ratings, supplement to the National Building Code-Chapter 2. The ratings shown are conservative values. Actual fire tests have significantly exceeded these values.

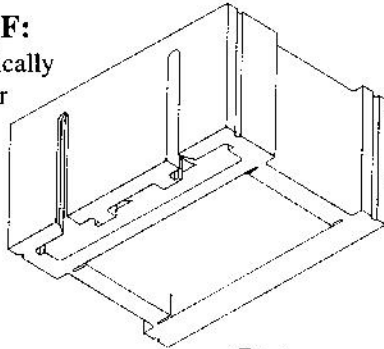
20 cm Type RSCF:

- High Sound Absorption Value (NRC: .80+)
- Quad-Chamber design
- Acoustic Inserts



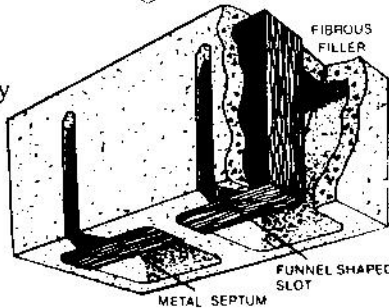
25 / 30 cm Type RSCF:

- Horizontally and vertically reinforceable with rear thru-cavity
- Tri-Chamber design
- Acoustic Inserts



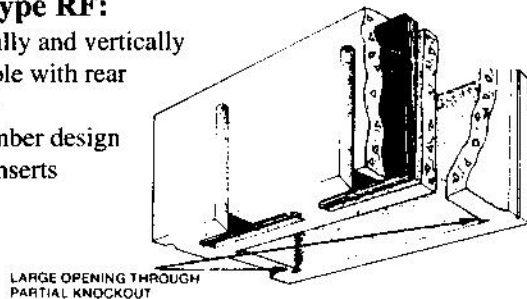
20 cm Type RF:

- Funnel shaped slots
- Excellent low frequency absorption
- Acoustic Inserts
- Dual-Chamber design



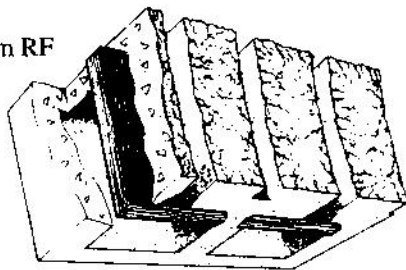
25 / 30 cm Type RF:

- Horizontally and vertically reinforceable with rear thru-cavity
- Dual-Chamber design
- Acoustic Inserts



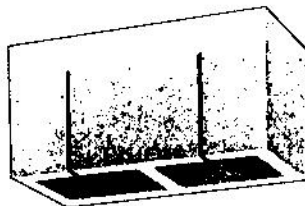
20 cm Type RSRF:

- Split-Rib face
- Similar to 20 cm RF Soundblox



20 cm Type A1:

- Original Design
- Superior low frequency absorption
- Narrow slots
- No Acoustic Inserts



SOUNDBLOX® PRODUCTION

SOUNDBLOX® are made locally near the jobsite by carefully selected quality block producers. Special patented molds, which fit standard automatic block machines, and detailed specifications, are used to ensure uniform quality and acoustic efficiency. SOUNDBLOX® units may be made of any desired type of aggregate and are readily available in most areas of Canada.

SPECIFICATIONS

Scope. Sound absorptive concrete masonry units shall be used to construct the exterior or interior walls or partitions as shown on the plans and/or indicated in the Schedule of Finishes.

Material. All sound absorptive masonry units shall be SOUNDBLOX® made on standard block machines from molds furnished by Western Noise Control Ltd. They shall be made of carefully prepared aggregate and shall meet the current ASTM and CSA A165.1 requirements. Controlled use of the SOUNDBLOX® molds shall be employed so that all units have the top of the cavities tightly closed. Slots and edges shall be straight and clean. Where Type RSCE/RF SOUNDBLOX® units are called for, Acoustic Inserts are to be supplied by Western Noise Control Ltd. and shall be installed in the cavities of the blocks. The Acoustic Inserts shall consist of specifically fabricated incombustible fibrous material laminated to a metalized septum. They shall be pre-cut accurately to size and installed as recommended for the type of SOUNDBLOX® units that are called for.

Sizes and Types. SOUNDBLOX® units shall be 390mm x 190mm nominal face size. They shall be of the thickness and type as shown on the plans and/or indicated in the Schedule of Finishes. All SOUNDBLOX® units are of modular dimensions, i.e. 10 mm under nominal.

Installation. SOUNDBLOX® units shall be installed by qualified masonry personnel. SOUNDBLOX® must be installed in a full bed of mortar with the open ends facing downward. Place reinforcing, ties, etc. as required.



WESTERN NOISE CONTROL LTD.

#1501, 10025 - 106 Street
Edmonton, Alberta, T5J 1G4

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Fax: (403) 426 - 0325

Toll Free: 1 - 800 - 661 - 7241

TYPICAL AREAS FOR SOUNDBLOX®

Schools

gymnasiums
natatoriums
auditoriums
music rooms

lecture rooms
multi-purpose rooms
vocational rooms
mechanical equipment rooms

Industrial Plants

partitions between areas
outdoor noise screens
boiler rooms

engine exhaust stacks
fan rooms

Churches

naves and transepts
social halls
classrooms

mechanical equipment rooms
chapels

Electric Utilities

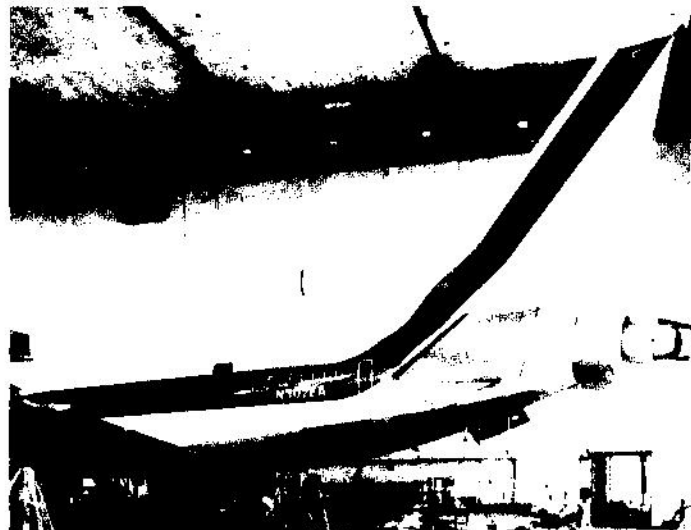
transformer noise screens
generator rooms

boiler rooms
fan rooms

General

computer rooms
cooling tower noise screens
newspaper press rooms
engine test cells
convention centres
aircraft maintenance hangars
coliseums
laboratories
standby generator facilities
hospitals
radio and television studios
mechanical equipment rooms

return air shafts
recreation halls
field houses
shooting ranges
tunnels
airport facilities
sewage treatment plants
highway noise screens
theatres
subway stations
restaurants



Commercial Airline Maintenance Hangar, Miami, Florida
Architects - Engineers: Connell Associates Inc.

Western Noise Control Ltd. has over 20 years of experience in eliminating all types of noise problems. We would be pleased to offer our experience to you in any of your applications where noise control is required.