



SOUNDBLOX®

SOUND ABSORBING, CARBON SEQUESTERING STRUCTURAL MASONRY UNITS



About SOUNDBLOX®

Soundblox masonry units are an excellent choice for noise dampening in industrial settings, gymnasiums, mechanical equipment rooms, and comparable installations. Soundblox units derive their sound absorption from a simple cavity-slot resonator construction.

The cavities are closed at the top and the slots, open to the sound source, allowing the cavities to function as damped (Helmholtz) resonators – an exceptional sound absorption tool at low frequencies.





SOUNDBLOX® Units

Soundblox units manufactured with patented CarboClave carbon-sequestering technology are not only an eco-friendly product choice for your project, but they are also inherently stronger due to the carbon sequestered within the units. Each 20 cm unit absorbs up to 0.5 lbs of CO₂, making them 25% more environmentally friendly than traditional concrete blocks of the same size. With compressive strength greater than comparable standard hollow masonry units, CarboClave Soundblox units are structural and load bearing.

The in-place cost of this sound-attenuation system is low by comparison to most other solutions, since it is installed conventionally, without an additional process.

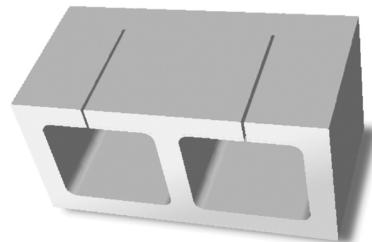
Manufactured with:



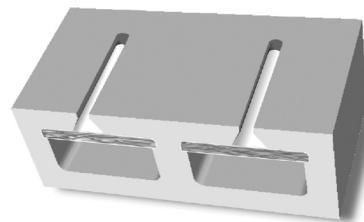
Concrete Soundblox Type A-1 units are designed with narrow slots and unified cavities for low frequency sound absorption. Suitable for high moisture applications including exterior use.

Soundblox Type RSC units have wider, flared slots and each cavity contains an incombustible fibrous filler with a metal septum laminated to the back side to reflect cavity-slot resonator construction characteristics. Type RSC units offer a high level of sound absorption because of the sequential cavities molded right into the block. Called RSC/RF, the 20, 25 and 30 cm depth units also feature straight-through rear cavities which allow their specification in applications requiring vertical reinforcement.

Contact your Brampton Brick sales representative for more information.



Type A-1, available in 10, 15, 20, 25 and 30 cm depths

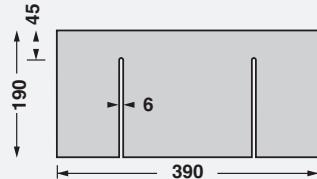


Type RSC, available in 10, 15, 20*, 25* and 30* cm depths

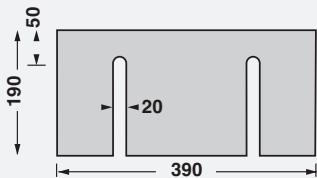
*These blocks have straight through cavities and can be used on applications requiring vertical reinforcement

SOUNDBLOX® Type A-1 and RSC Units

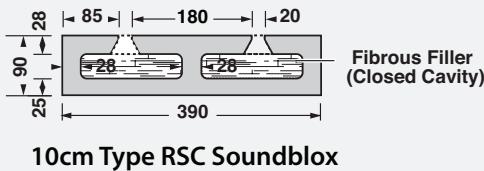
Dimensions shown in millimeters



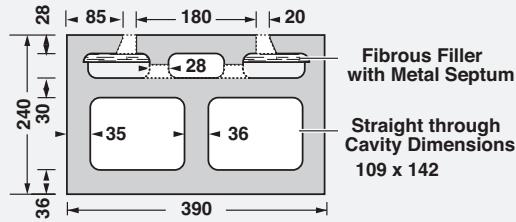
Type A-1 Soundblox
Face Detail (Typical for all sizes)



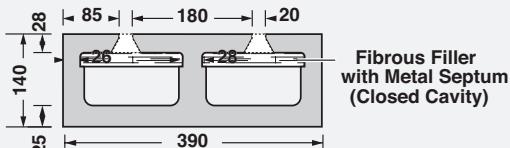
Type RSC Soundblox
Face Detail (Typical for all sizes)



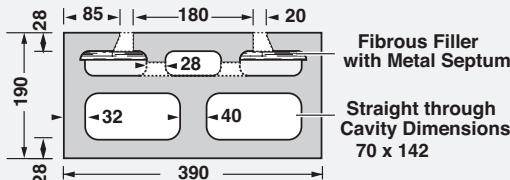
10cm Type RSC Soundblox



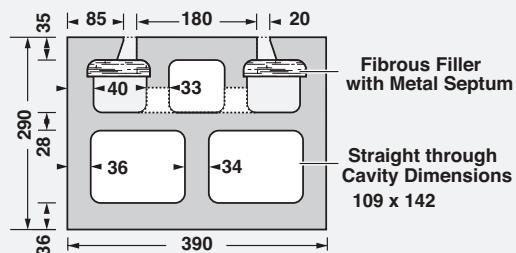
25cm Type RSC/RF Soundblox



15cm Type RSC Soundblox



20cm Type RSC/RF Soundblox



30cm Type RSC/RF Soundblox

SOUNDBLOX® Specifications

When specifying Soundblox units for your project, be sure to use the following terminology:

- All sound absorbing acoustic block shall be (Soundblox Type A-1 or Type RSC) as manufactured by Brampton Brick.
- Soundblox Type RSC and RSC/RF units shall include filler elements installed in the cavities of the block at the time of manufacture.
- Fillers used in Soundblox Type RSC and RSC/RF shall be of specifically fabricated incombustible fibrous material and shall have a metal septum laminated to one side facing away from the slotted face.
- Soundblox units shall be of modular size to the wall thickness indicated on the drawings.

Refer to the charts below to help you choose the correct product and size for your project.

SOUND ABSORPTION COEFFICIENTS										
SIZE (cm)	SIZE (in)	TYPE	SURFACE	CAVITIES/ SLOTS	FREQUENCY-HERTZ (Hz)					
					125	250	500	1000	2000	4000
10	4	A-1	Painted	2/2	0.12	0.85	0.36	0.36	0.42	0.45
15	6	A-1	Painted	2/2	0.62	0.84	0.36	0.43	0.27	0.5
20	8	A-1	Painted	2/2	0.97	0.44	0.38	0.39	0.5	0.6
25	10	A-1	Painted	2/2	0.62	0.84	0.36	0.43	0.27	0.5
30	12	A-1	Painted	2/2	0.62	0.84	0.36	0.43	0.27	0.5
10	4	RSC	Painted	2/2	0.2	0.88	0.63	0.65	0.52	0.43
15	6	RSC	Painted	2/2	0.39	0.99	0.65	0.58	0.43	0.45
20	8	RSC/RF	Painted	5/2	0.18	0.64	1.02	0.72	0.8	0.58
25	10	RSC/RF	Painted	5/2	0.18	0.64	1.02	0.72	0.8	0.58
30	12	RSC/RF	Painted	5/2	0.48	1.14	0.914	0.76	0.67	0.51

*NRC: Noise Reduction Coefficient

FIRE PERFORMANCE RATINGS					
SOUNDBLOX TYPE	NOMINAL WIDTH (cm)	NOMINAL WIDTH (in)	EQUIVALENT THICKNESS (mm)	EQUIVALENT THICKNESS (in)	MAXIMUM FIRE RATING (hrs)
A-1	10	4	60	2.36	0.75
A-1	15	6	91	3.58	0.8
A-1	20	8	106	4.17	1.8
A-1	25	10	124	5	2.4
A-1	30	12	155	6.1	3.3
RSC	10	4	66	2.6	1
RSC	15	6	91	3.58	1.5
RSC/RF*	20	8	118	4.65	3
RSC/RF*	25	10	144	5.67	4
RSC/RF*	30	12	168	6.61	4

Fire ratings shown are based on the requirements of the National Building code.

* Vertical reinforcement may be used.

SOUNDBLOX® FAQ's

HOW DO SOUNDBLOX UNITS WORK?

When sound is generated, air is set into motion in a wave pattern. High frequency sounds have short wave lengths and low frequency sounds have long wave lengths. A sound wave in the air at 125 Hz has a wave length of over 8 feet.

When sound waves reach a Soundblox unit, the air inside the cavity created by the closed top of the unit acts like a spring while the air in the slot is forced to oscillate in and out of the cavity. The friction of this motion dissipates the sound energy and we have absorption. These types of absorbers, called resonant or resonator absorbers, are tuned absorbers having a peak sound absorption at a specific frequency. The absorption coefficients of the Type A-1 units reflect this peaked characteristic most particularly. The sound absorption can be broadened to cover a wider frequency range by the addition of porous absorptive materials in the cavity and by acoustically dividing the cavity with a septum which, in effect, creates two different sized resonators and two resonant peaks in each block cavity. The absorption coefficients of the Type RSC units reflect this broader absorption characteristic. The slot/cavity design of Soundblox units coupled with fibrous fillers and septum function together in providing their sound absorption performance.

CAN SOUNDBLOX UNITS BE PAINTED?

In short, yes. Soundblox units do not depend on the porosity of the material from which they are manufactured for their sound absorption. All Soundblox units were painted before sound absorption tests were performed since most are painted in the field. Therefore, published sound absorption values are achieved in the field no matter what type of aggregate is used in the manufacturing of the blocks. However, it has been shown that when Soundblox units manufactured out of a highly porous aggregate and left unpainted they exhibit increased sound absorption. Particularly at higher frequencies due to the porous absorption of the aggregate.

ARE SOUNDBLOX UNITS LOAD-BEARING?

Yes, providing they are made of the same aggregate necessary to produce load-bearing regular units. And, since they are load-bearing, noise control can be built right into the structure of a building. Also, Soundblox units have been allowed 90 percent of the shear value of ordinary hollow concrete masonry units of the same thickness. (See International Conference of Building Officials Research Recommendation No. 2359, and Los Angeles Department of Building and Safety Report No. RR 23609)

CAN SOUNDBLOX UNITS BE USED OUTDOORS?

Yes, millions of concrete Soundblox units have been used for transformer and other types of outdoor noise screens and for highway noise barriers. For outdoor use, the Type A-1 units are recommended, although the Type RSC units have also been used outdoors. The units with fibrous fillers are not recommended in areas of high humidity, such as swimming pools.

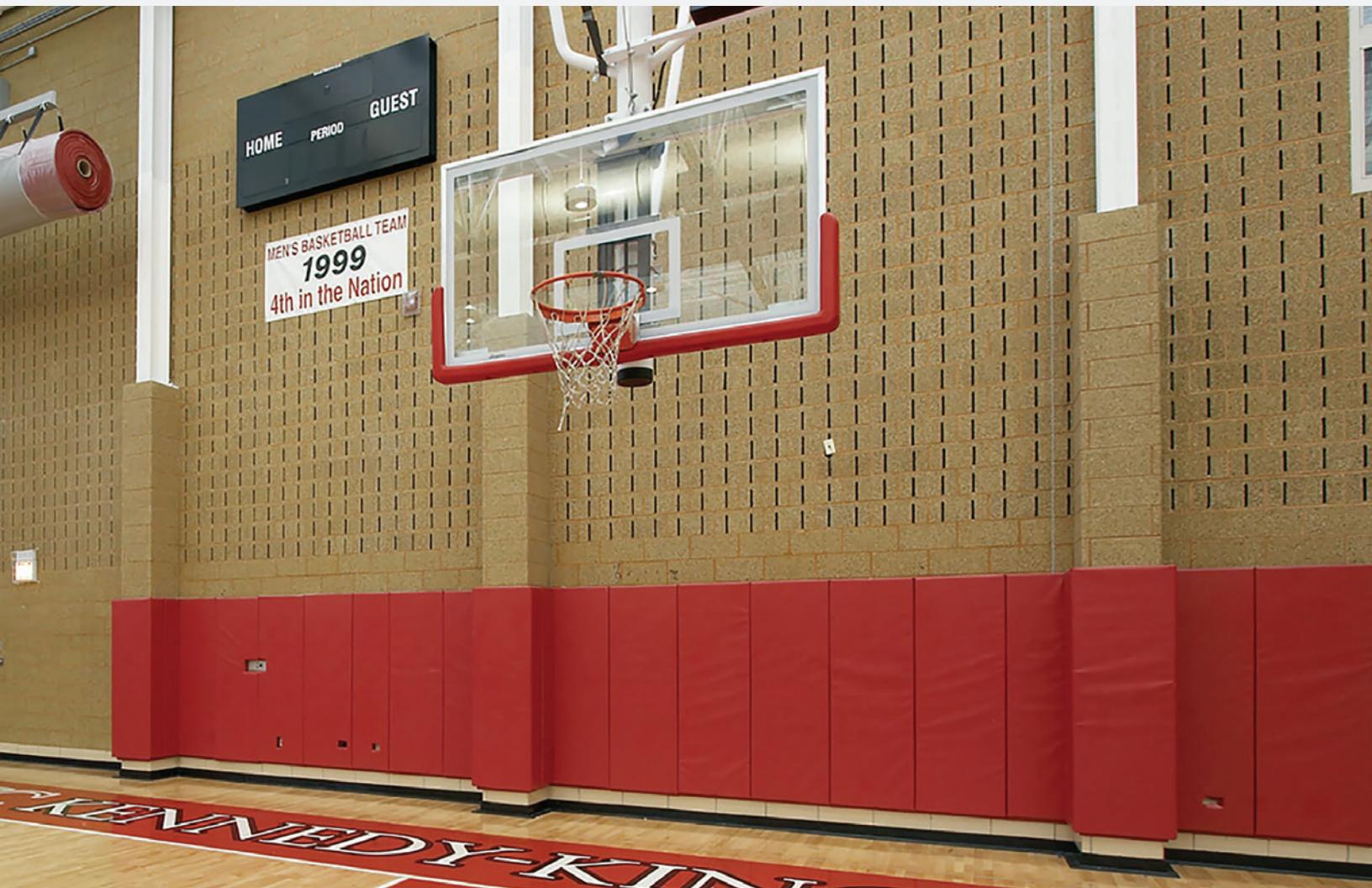
SOUNDBLOX® FAQ's

CAN SOUNDBLOX UNITS BE CLEANED WITH WATER OR STEAM?

Yes, the Type A-1 units can be hosed down with water or steam cleaned.

WHAT DOES NRC MEAN?

NRC stands for Noise Reduction Coefficient. An NRC rating is a number that is the arithmetic average of the sound absorption coefficients at four frequencies: 250, 500, 1000 and 2000 Hz taken to the nearest 0.05. Generally speaking, the higher the NRC, the more absorptive the material is. However, since the NRC is simply an average and includes only the four frequencies, its practical use is limited. For example, if one has a noise problem concentrated near 125 Hz (such as transformer noise), trying to select the best sound absorptive material on the basis of its NRC would be foolish since the four values averaged to get the NRC do not include the value obtained at 125 Hz. In that case, attention should be directed to the sound absorption values at individual frequencies.





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