



NATIONAL
CONCRETE MASONRY
ASSOCIATION

23012 Hoise Pen Road
Herndon,
Virginia 22071-3406
703/713-1900
Facsimile 703/713-1910

Calculated R-Values of 4" Type A1 SOUNDBLOX Units:

Density of Concrete (pcf)	R-Value (hr·ft ² ·°F/Btu)
75	1.3
85	1.3
95	1.2
120	1.1
135	1.0

Assumptions:

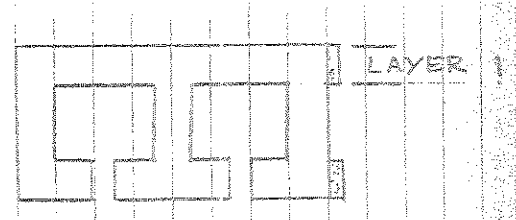
- R-values are calculated according to the series-parallel (isothermal planes) calculation method.
- One head and one bed joint are included in the calculation, units have full bed joints.
- Conductivity of the concrete is based on oven dry density.
- R-values listed include indoor and outdoor air surface resistances of 0.68 and 0.17 hr·ft²·°F/Btu, respectively.
- Unit dimensions are based on SOUNDBLOX drawing # 21579.

R-VALUE CALCULATION:

SERIES-PARALLEL METHOD

Unit: 4" A-1 SOUNDBLOX
 Insul: None
 Filename:
 Notes:

Density: 120
 Atot: 127.500
 kc: 5.512



LAYERS and Thickness	PATHS						Con.	Fes.
	One Concrete	Two Air	Three	Four				
One	A	118.664	0.000	8.836	0.000			
	rx	0.181		0.200	0.000			
	a	0.931	0.000	0.069	0.000			
1.188	Rnp	0.215	0.970	0.238	0.000			
	a/Rnp	4.320	0.000	0.292	0.000	4.611	0.217	
Two	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
0.000	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	
Three	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
0.000	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	
Four	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
0.000	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	
Five	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
0.000	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	
Six	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
0.000	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	

RT 0.217
 Ravg 1.067
 Uavg 0.937

R E P O R T
 TESTS ON SOUND-ABSORBING MATERIALS
 BY
 REVERBERATION ROOM METHOD

o Acoustical Building Block Company
 Boston, Massachusetts

In samples received August 13, 1964

Sample Number	Sound Absorption Coefficient at frequency of							N.R.C.	Mounting No.	Thickness Inches	Description
	125	250	500	1000	2000	4000					
4	.62*	.84	.36	.43	.27	.50	.47	4**	6-1/2	SOUNDBLOX, 6"x 8"x 16" nominal unit size, painted.***	

* Determined in accordance with ASTM Designation C423-60T. Coefficients at intermediate frequencies measured as follows:

.77 .354
 .98 .49

** Fifty-four blocks were laid to simulate stackbond with slotted faces exposed. Blocks were laid over 1/2"-thick gypsum wallboard directly against the reverberation-room floor, comprising a specimen area of 44.9 sq.ft. measuring approximately 69"x 94". Specimen edges were covered with 1-5/8"-thick lumber on the cavity side and 1/2"-thick gypsum wallboard on other sides. The perimeter of each cavity was sealed to the adjacent block and all exposed joints were sealed by caulking.

*** These are two-cavity blocks comprised of an aggregate of expanded clay and 75% light slag, with one coat of acrylic-resin-emulsion paint roller-applied to exposed face and without absorptive filler in cavities. Approximate weight per block is 23.4 lbs.

Richard W. Hamme
 for GEIGER & HAMME, INC.
 October 12, 1964

8" Type A-1

REPORT
TESTS ON SOUND-ABSORBING MATERIALS
BY
REVERBERATION ROOM METHOD

To The Proudfoot Company, Inc.
Greenwich, Connecticut

On samples received August 13, 1968

Test or Sample Number	Sound Absorption Coefficient *						N.R.C.	Mounting No.	Thickness Inches
	125	250	500	1000	2000	4000			
5	.97	.44	.38	.39	.50	.60	.45	4**	Type A-1 SOUNDBLOX, 8"x 8"x 16" nominal unit size, painted.***

* Determined in accordance with ASTM Designation C423-66, reported with allowance for absorption of concrete floor covered by specimen but without adjustment for diffraction effects. Coefficients at other frequencies measured as follows:

100	160	200
.53	.69	.53

** Fifty-four blocks were laid to simulate stackbond with slotted faces exposed. Blocks were laid over 1/2"-thick gypsum wallboard directly against the reverberation-room floor, comprising a specimen area of 45.0 square feet measuring approximately 69"x 94". Specimen edges were covered with 1-5/8"-thick lumber on the cavity side and 1/2"-thick gypsum wallboard on the other sides. The perimeter of each cavity was sealed to the adjacent block and all exposed joints were sealed by caulking.

*** These are two-cavity blocks comprised of a standard expanded-shale mixture (Haydite), with one coat of resin-emulsion paint spray-applied to the exposed face. Approximate weight per block is 28 lbs.

Richard N. Hamme
for GEIGER & HAMME, INC.
August 29, 1968



75-02 51st AVENUE/ELMHURST, NEW YORK 11373/TELEPHONE 212-446-1550

R. D. TUTT, Vice President

J. F. DUDA, Laboratory Director

REPORT

SOUND TRANSMISSION LOSS TEST

PRODUCT: PROUDFOOT SOUNDBLOX TYPE A MASONRY WALL.

TESTED FOR: The Proudfoot Company, Greenwich, Conn.

TEST NO. KAL-365-1-66

DATE: May 23rd, 1966

TEST METHOD: The laboratory method used in making this test meets with the American Society for Testing and Materials Designation E90-61T "Recommended Practice for Laboratory Measurement of Airborne Sound Transmission Loss of Building Floors and Walls". One third octave band random noise test signals were used.

DESCRIPTION OF PARTITION: The test specimen consisted of a masonry wall 10' wide x 8' high constructed of Proudfoot Soundblox, 6" thick Type A. Aggregate used: 50% Waylite, 50% sand. The wall was allowed to set for 33 days prior to test. The average weight of the blocks was 28 lbs. per block. The Proudfoot Company advised us that the Soundblox units and the ordinary blocks used in this test series (KAL-365-1 through 3-66) were made at the same time, on the same block machine and from the same aggregate. The wall was painted on one side before testing with two coats of Bondex cement base paint, brush applied in accordance with the paint manufacturer's recommendations.

Tests were conducted with the painted sides of the walls on the receiving room side. Types A and B Soundblox were installed with the sound absorptive side facing the source room.

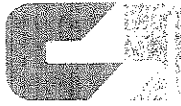
RESULTS OF MEASUREMENTS:

Frequency cps	125	175	250	350	500	700	1000	1400	2000	2800	4000
STL (db)	38	41	38	43	44	48	51	(56)	58	(53)	58
Sound Transmission Class										STC 49
Average 9 Frequency Sound Transmission Loss										47 db

"The nine frequency arithmetic average is given for comparison with previous data and for dealing with specifications still based on this index. A preferred criterion, based on actual partition requirements in typical architectural applications, is the sound transmission class."

John F. Duda

JOHN F. DUDA
Laboratory Director



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Calculated R-Values of 6" Type A1 SOUNDBLOX Units:

Density of Concrete (pcf)	R-Value (hr·ft ² ·°F/Btu)
75	1.4
85	1.3
95	1.2
120	1.1
135	1.0

Assumptions:

- R-values are calculated according to the series-parallel (isothermal planes) calculation method.
- One head and one bed joint are included in the calculation, units have full bed joints.
- Conductivity of the concrete is based on oven dry density.
- R-values listed include indoor and outdoor air surface resistances of 0.68 and 0.17 hr·ft²·°F/Btu, respectively.
- Unit dimensions are based on SOUNDBLOX drawing # 21580.

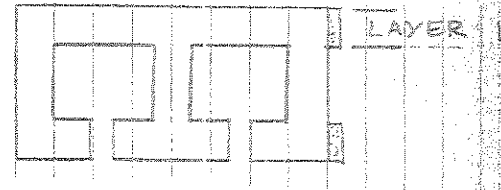
R-VALUE CALCULATION:

SERIES-PARALLEL METHOD

Unit: 6" A-1 SOUNDBLOX
 Insul: None
 Filename:
 Notes:

Density: 120
 Atot: 127.500

kc: 5.512



LAYERS and Thickness	PATHS						Con.	Res.
	One Concrete	Two Air	Three	Four				
One 1.250	A	118.664	0.000	8.836	0.000			
	rx	0.181		0.200	0.000			
	a	0.931	0.000	0.069	0.000			
	Rnp	0.227	0.970	0.250	0.000			
	a/Rnp	4.104	0.000	0.277	0.000	4.381	0.228	
Two 0.000	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	
Three 0.000	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	
Four 0.000	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	
Five 0.000	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	
Six 0.000	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	

=====
 RT 0.228
 Ravg 1.078
 Uavg 0.927



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Calculated R-Values of 8" Type A1 SOUNDBLOX Units:

Density of Concrete (pcf)	R-Value (hr·ft ² ·°F/Btu)
75	1.4
85	1.3
95	1.2
120	1.1
135	1.0

Assumptions:

- R-values are calculated according to the series-parallel (isothermal planes) calculation method.
- One head and one bed joint are included in the calculation, units have full bed joints.
- Conductivity of the concrete is based on oven dry density.
- R-values listed include indoor and outdoor air surface resistances of 0.68 and 0.17 hr·ft²·°F/Btu, respectively.
- Unit dimensions are based on SOUNDBLOX drawing # 21360.

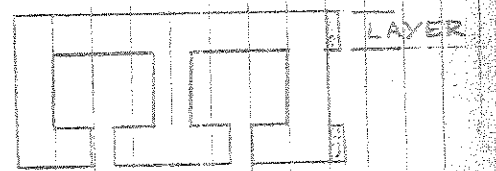
R-VALUE CALCULATION:

SERIES-PARALLEL METHOD

Unit: 8" A-1 SOUNDBLOX
 Insul: None
 Filename:
 Notes:

Density: 120
 Atot: 127.500

kc: 5.512



LAYERS and Thickness	PATHS						Res.
	One Concrete	Two Air	Three	Four	Con.		
One	A	118.664	0.000	8.836	0.000		
	rx	0.181		0.200	0.000		
	a	0.931	0.000	0.069	0.000		
1.375	Rnp	0.249	0.970	0.275	0.000		
	a/Rnp	3.731	0.000	0.252	0.000	3.983	0.251
Two	A	0.000	0.000	0.000	0.000		
	rx	0.181		0.000	0.000		
	a	0.000	0.000	0.000	0.000		
0.000	Rnp	0.000	0.970	0.000	0.000		
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000
Three	A	0.000	0.000	0.000	0.000		
	rx	0.181		0.000	0.000		
	a	0.000	0.000	0.000	0.000		
0.000	Rnp	0.000	0.970	0.000	0.000		
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000
Four	A	0.000	0.000	0.000	0.000		
	rx	0.181		0.000	0.000		
	a	0.000	0.000	0.000	0.000		
0.000	Rnp	0.000	0.970	0.000	0.000		
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000
Five	A	0.000	0.000	0.000	0.000		
	rx	0.181		0.000	0.000		
	a	0.000	0.000	0.000	0.000		
0.000	Rnp	0.000	0.970	0.000	0.000		
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000
Six	A	0.000	0.000	0.000	0.000		
	rx	0.181		0.000	0.000		
	a	0.000	0.000	0.000	0.000		
0.000	Rnp	0.000	0.970	0.000	0.000		
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000

RT 0.251
 Ravg 1.101
 Uavg 0.908



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Calculated R-Values of 8" Type Q SOUNDBLOX Units:

Density of Concrete (pcf)	R-Value (hr·ft ² ·°F/Btu)
75	2.4
85	2.2
95	2.0
120	1.6
135	1.5

Assumptions:

- R-values are calculated according to the series-parallel (isothermal planes) calculation method.
- One head and one bed joint are included in the calculation, units have full bed joints.
- Conductivity of the concrete is based on oven dry density.
- R-values listed include indoor and outdoor air surface resistances of 0.68 and 0.17 hr·ft²·°F/Btu, respectively.
- Galvanized metal septum has an emittance of 0.25.
- Unit dimensions are based on SOUNDBLOX drawing # 4109.

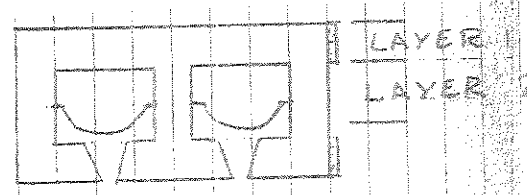
R-VALUE CALCULATION:

SERIES-PARALLEL METHOD

Unit: 8" Type Q SOUNDBLOX
 Insul: None
 Filename:
 Notes: - galvanized metal septum in cores

Density: 120
 Atot: 127.500

kc: 5.512



LAYERS and Thickness	PATHS						Con.	Res.
	One Concrete	Two Air	Three	Four				
One 1.438	A	118.664	0.000	8.836	0.000			
	rx	0.181		0.200	0.000			
	a	0.931	0.000	0.069	0.000			
	Rnp	0.261	0.970	0.288	0.000			
	a/Rnp	3.567	0.000	0.241	0.000	3.808	0.263	
Two 1.249	A	42.891	3.000	5.836	75.773			
	rx	0.181		0.200	0.000			
	a	0.336	0.024	0.046	0.594			
	Rnp	0.227	0.970	0.250	2.500			
	a/Rnp	1.484	0.024	0.183	0.238	1.930	0.518	
Three 0.000	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	
Four 0.000	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	
Five 0.000	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	
Six 0.000	A	0.000	0.000	0.000	0.000			
	rx	0.181		0.000	0.000			
	a	0.000	0.000	0.000	0.000			
	Rnp	0.000	0.970	0.000	0.000			
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000	
=====							RT	0.781
							Ravg	1.631
							Uavg	0.613



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Calculated R-Values of 8" Type RSC SOUNDBLOX Units:

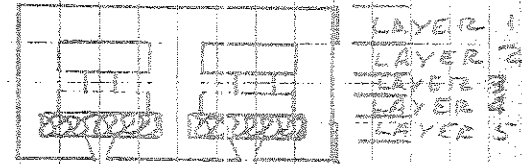
Density of Concrete (pcf)	R-Value (hr·ft ² ·°F/Btu)
75	4.3
85	3.9
95	3.5
120	2.7
135	2.3

Assumptions:

- R-values are calculated according to the series-parallel (isothermal planes) calculation method.
- One head and one bed joint are included in the calculation, units have full bed joints.
- Conductivity of the concrete is based on oven dry density.
- R-values listed include indoor and outdoor air surface resistances of 0.68 and 0.17 hr·ft²·°F/Btu, respectively.
- Aluminum septum has an emittance of 0.12.
- Fiberglass has a density of 1.5 pcf and a thermal resistivity of 4.1 hr·ft²·°F/Btu·in.
- The insert fits snugly into the block.
- Unit dimensions are based on SOUNDBLOX drawing # 43572.

R-VALUE CALCULATION: SERIES-PARALLEL METHOD

Unit: 8" Type RSC SOUNDBLOX Density: 120
 Insul: 1 3/4" thick fiberglass Atot: 127.500
 Filename:
 Notes: -- aluminum septa laminated to back of insulation
 -- 1.5 pcf fiberglass kc: 5.512



LAYERS and Thickness	PATHS						
		One Concrete	Two Air	Three	Four	Con.	Fes.
One 1.344	A	118.664	0.000	8.836	0.000		
	rx	0.181		0.200	0.000		
	a	0.931	0.000	0.069	0.000		
	Rnp	0.244	0.970	0.269	0.000		
	a/Rnp	3.817	0.000	0.258	0.000	4.075	0.245
Two 1.188	A	37.922	3.000	5.836	80.742		
	rx	0.181		0.200	0.000		
	a	0.297	0.024	0.046	0.633		
	Rnp	0.216	0.233	0.238	0.485		
	a/Rnp	1.380	0.101	0.193	1.306	2.979	0.336
Three 1.188	A	108.094	3.000	5.836	10.570		
	rx	0.181		0.200	0.000		
	a	0.848	0.024	0.046	0.083		
	Rnp	0.216	0.233	0.238	0.485		
	a/Rnp	3.933	0.101	0.193	0.171	4.398	0.227
Four 0.813	A	51.172	3.000	5.836	67.452		
	rx	0.181		0.200	0.000		
	a	0.401	0.024	0.046	0.529		
	Rnp	0.148	0.160	0.163	2.670		
	a/Rnp	2.721	0.147	0.282	0.198	3.348	0.299
Five 1.750	A	44.547	3.000	5.836	74.117		
	rx	0.181		0.200	4.100		
	a	0.349	0.024	0.046	0.581		
	Rnp	0.318	0.344	0.350	7.175		
	a/Rnp	1.100	0.068	0.131	0.081	1.381	0.724
Six 0.000	A	0.000	0.000	0.000	0.000		
	rx	0.181		0.000	0.000		
	a	0.000	0.000	0.000	0.000		
	Rnp	0.000	0.970	0.000	0.000		
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000

RT 1.832
 Ravg 2.682
 Uavg 0.373



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Calculated R-Values of 12" Type RSC SOUNDBLOX Units:

Density of Concrete (pcf)	R-Value (hr·ft ² ·°F/Btu)
75	5.2
85	4.8
95	4.4
120	3.4
135	2.9

Assumptions:

- R-values are calculated according to the series-parallel (isothermal planes) calculation method.
- One head and one bed joint are included in the calculation, units have full bed joints.
- Conductivity of the concrete is based on oven dry density.
- R-values listed include indoor and outdoor air surface resistances of 0.68 and 0.17 hr·ft²·°F/Btu, respectively.
- Aluminum septum has an emittance of 0.12.
- Fiberglass has a density of 1.5 pcf and a thermal resistivity of 4.1 hr·ft²·°F/Btu·in.
- The insert fits snugly into the block.
- Unit dimensions are based on SOUNDBLOX drawing # 101590.

R-VALUE CALCULATION: SERIES-PARALLEL METHOD

Unit: 12" Type RSC SOUNDBLOX Density: 120
 Insul: 1" thick fiberglass Atot: 127.500
 Filename:
 Notes: - aluminum septa laminated to back of insulation
 - 1.5 pcf fiberglass kc: 5.512



LAYERS and Thickness	PATHS						
		One Concrete	Two Air	Three	Four	Con.	Res.
One 1.594	A	118.664	0.000	8.836	0.000		
	rx	0.181		0.200	0.000		
	a	0.931	0.000	0.069	0.000		
	Rnp	0.289	0.970	0.319	0.000		
	a/Rnp	3.218	0.000	0.217	0.000	3.435	0.291
Two 2.813	A	47.859	3.000	5.836	70.805		
	rx	0.181		0.200	0.000		
	a	0.375	0.024	0.046	0.555		
	Rnp	0.510	0.323	0.563	0.682		
	a/Rnp	0.735	0.073	0.081	0.814	1.704	0.587
Three 1.188	A	111.242	3.000	5.836	7.422		
	rx	0.181		0.200	0.000		
	a	0.872	0.024	0.046	0.058		
	Rnp	0.216	0.137	0.238	0.288		
	a/Rnp	4.048	0.172	0.193	0.202	4.614	0.217
Four 3.438	A	47.859	3.000	5.836	70.805		
	rx	0.181		0.200	0.000		
	a	0.375	0.024	0.046	0.555		
	Rnp	0.624	0.395	0.688	2.500		
	a/Rnp	0.602	0.060	0.067	0.222	0.950	1.053
Five 1.000	A	41.234	3.000	5.836	77.430		
	rx	0.181		0.200	4.100		
	a	0.323	0.024	0.046	0.607		
	Rnp	0.181	0.115	0.200	4.100		
	a/Rnp	1.782	0.205	0.229	0.148	2.364	0.423
Six 0.000	A	0.000	0.000	0.000	0.000		
	rx	0.181		0.000	0.000		
	a	0.000	0.000	0.000	0.000		
	Rnp	0.000	0.970	0.000	0.000		
	a/Rnp	0.000	0.000	0.000	0.000	0.000	0.000

RT 2.570
 Ravg 3.420
 Uavg 0.292