



ROXUL AFB® Acoustical Fire Batts

Batt Insulation for Commercial
Interior Partition Walls

Batt Insulation that Fights Both Fire and Noise

ROXUL AFB®

ROXUL AFB® is a lightweight, semi-rigid batt insulation specifically designed for steel stud interior wall and floor applications.

This stone wool-based insulation is made from natural stone and recycled content. It's a sustainable product that provides superior sound absorbency and fire protection for overall occupant comfort and safety. That's why AFB is quickly becoming the insulation of choice for today's green builders in commercial and industrial construction.



AFB Acoustic Testing

STC value doesn't take into account lower frequency sounds (LFS), which can negatively affect the vibration between walls and the peace and quiet in a room. Due to its higher density, ROXUL AFB has been tested and proven for its dampening effectiveness against LFS.

Sound Control

Room to room or floor to floor, when ROXUL AFB is specified for interior wall or floor assemblies, better overall sound control and fire protection are achieved. Compared to other types of insulation, the stone wool content of AFB provides increased density that effectively reduces airflow and essentially, sound transmissions. Greater noise or sound control is further achieved when thicker AFB and gypsum board are used together. AFB thickness ranges from 1.0" (25 mm) to 6" (152 mm).

Testing demonstrates that ROXUL AFB's inherently higher density and manufacturing process delivers dramatically better airflow resistivity compared to glass wool. Higher air flow resistivity means better sound attenuation.

In commercial applications, much of the sound or noise to be controlled is produced in low frequency or bass ranges. This noise includes conversation, projection/video equipment, and ventilation systems. In the lower 1/3 octave bands, tests have shown that ROXUL AFB outperformed glass wool insulation, providing more low frequency absorption when comparing acoustical testing at low frequencies (see chart).

Density and Airflow Resistivity for Samples of Absorptive Material

		Density (kg/m ³)		Airflow Resistivity (mks rays/m)	
		Average Value	Standard Deviation	Average Value	Standard Deviation
Glass Fiber	3½" (89 mm) batt	12.2	0.4	4,800	400
Glass Fiber	2½" (65 mm) batt	11.7	1.0	3,600	200
ROXUL AFB	3" (75 mm) batt	44.2	1.7	16,600	900
ROXUL AFB	1½" (40 mm) batt	51.9	2.2	15,000	500

Random Incidence Sound Absorption Coefficients, in 1/3 Octave Band

		1/3 Octave Band Center Frequency (Hz)						
		65	80	100	125	160	200	250
Glass Fiber Sample 1	3½"	0.15	0.18	0.21	0.25	0.32	0.43	0.54
Glass Fiber Sample 2	3½"	0.15	0.17	0.19	0.22	0.28	0.37	0.48
ROXUL AFB Sample 1	3"	0.18	0.22	0.28	0.33	0.40	0.50	0.62
ROXUL AFB Sample 2	3"	0.18	0.23	0.29	0.24	0.41	0.52	0.65
Glass Fiber Sample Average	3"	0.15	0.18	0.20	0.20	0.30	0.40	0.50
ROXUL AFB Sample Average	3"	0.18	0.23	0.29	0.34	0.41	0.51	0.64

Acoustical Performance

ASTM E 90	Airborne Sound Transmission Loss	Tested
ASTM E 413	Rating Sound Insulation	Tested
ASTM C 423	Sound Absorption Coefficients	Tested
ASTM E 1050	Impedance and Absorption of Acoustical Materials	Tested

ASTM C423

Thickness	Coefficients at Frequencies						NRC
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
1.0"	0.14	0.25	0.65	0.90	1.01	1.01	0.70
1.5"	0.18	0.44	0.94	1.04	1.02	1.03	0.85
2.0"	0.28	0.60	1.09	1.09	1.05	1.07	0.95
3.0"	0.52	0.96	1.18	1.07	1.05	1.05	1.05
4.0"	0.86	1.11	1.20	1.07	1.08	1.07	1.10

Features and Benefits that Set AFB Apart



Fire Resistant

ROXUL AFB's combination of stone wool and recycled content makes this insulation fire resistant. This non-combustible product does not develop smoke or promote flame spread when exposed to fire, making AFB a critical line of defense in fire protection. In fact, studies have proven that stone or mineral wool insulations provide a 54% increase in overall fire resistance rating compared to non-insulated assemblies.



Water Repellent

ROXUL AFB will not absorb water or hold moisture, thereby maintaining its shape within the wall cavity delivery for maximum sound and fire performance. AFB will not corrode and does not promote fungi growth.

Fire Performance

CAN4 S114	Test for Non-Combustibility	Non-Combustible
ASTM E 136	Behavior of Materials at 750 °C (1382 °F)	Non-Combustible
CAN/ULC S102	Surface Burning Characteristics	Flame Spread = 0 Smoke Developed = 0
ASTM E84 (UL 723)	Surface Burning Characteristics	Flame Spread = 0 Smoke Developed = 0
CAN/ULC S129	Smolder Resistance	0.09%



Sag-Free, Tight Fit

The higher density of AFB provides superior sag resistance and fit. Once installed, AFB holds its shape without sagging or slumping in the wall cavity over time to consistently provide continuous fire protection and sound control.

Fast, Easy Installation

Working with ROXUL insulation is a breeze. Simply cut with a serrated knife for quick and efficient installation between studs, around electrical boxes, pipes, wiring, ductwork and between studs and joists that are less than a standard width.

Corrosive Resistance

ASTM C 665	Corrosiveness to Steel	Pass
ASTM C 795 ****	Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692; U.S. Nuclear Regulatory Commission, Reg. Guide #1.36; U.S. Military Specifications MIL-I-24244 (all versions including B and C)	Conforms

Air Erosion

UL 181	Maximum Air Velocity	1000 fpm (5.08 m/s)
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Compliance and Performance

CAN/ULC-S702-07	Mineral Fiber Thermal Insulation for Buildings	Type 1, Complies
ASTM C 665	Mineral Fiber Blanket Thermal Insulation	Type 1, Complies
ASTM C 553	Mineral Fiber Blanket Thermal Insulation	Complies
MEA Approval	New York City Approval	338-97-M
City Of Los Angeles approval		RR 25444
ULC Design Nos.	U311, W406, W408, W419, W423, W440, W441, W442, W508, W600, Z500	
UL Design Nos.	U305, U311, U317, U411, U412, U448, U465, V417, V418, V419	

Dimensions

16.25" (width) x 48" (length)

412.75 mm (width) x 1219 mm (length)

24.25" (width) x 48" (length)

615.95 mm (width) x 1219 mm (length)

Density

72" thickness 2.8 lbs/ft³ 45 kg/m³

Better Acoustic Comfort

The higher density of stone wool delivers dramatically better airflow resistivity compared to fiberglass. Higher resistivity translates into better sound attenuation and better overall acoustic comfort for building occupants.

Thickness

Product thickness is available in 1" to 3.5" with 1/2" increments as well as 4", 5" and 6" offerings.

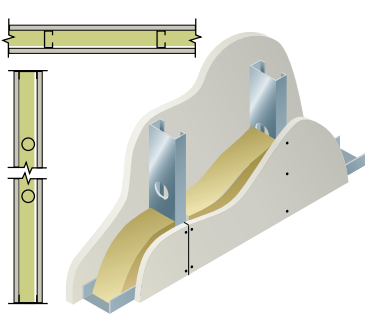



Commercial Wall System Performance Using ROXUL AFB®

In the following 15 commercial wall systems, ROXUL AFB delivers excellent Fire Resistance Ratings and Sound Transmission (STC).

The right-hand column shows the results of acoustical tests done on these ROXUL AFB wall systems at the internationally-recognized Riverbank Acoustical

Laboratories. For other wall constructions not shown here, please contact ROXUL technical services. For further details on the illustrated constructions, consult the UL or ULC Design Manual. All STC Ratings are based on Type X gypsum board.

Construction	Description	Transmission Loss
<p>1</p> 	<p>Single layer wall</p> <p>5/8" (15.9 mm) gypsum board</p> <p>3-5/8" (92 mm) steel studs spaced 24" (610 mm) centers</p> <p>3" (76 mm) ROXUL AFB</p> <p>Sound Transmission Class</p> <p>52 (RAL-TL95-195)</p> <p>Fire Resistance</p> <p>1 hour (UL design no. V417 and U465)</p> <p>1 hour (ULC W447)</p>	 <p>Transmission loss (dB)</p> <p>Frequency (Hz)</p>

What is STC?

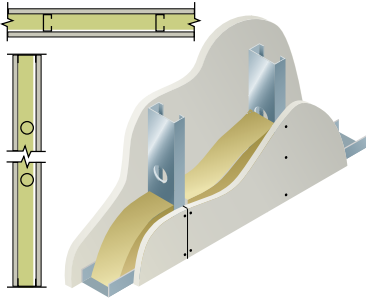
The Sound Transmission Class (STC) is a single-number rating of an assembly's ability to resist airborne sound transfer at the frequencies 125-4000 Hz. In general, a higher STC rating blocks more noise from transmitting through a partition. Because stone wool is denser than fiberglass, ROXUL's AFB insulation makes for a more soundproof environment.

Construction

Description

Transmission Loss

2



Single layer wall

1/2" (12.7 mm) gypsum board
 3-5/8" (92 mm) steel studs spaced
 24" (610 mm) centers
 3" (76 mm) ROXUL AFB

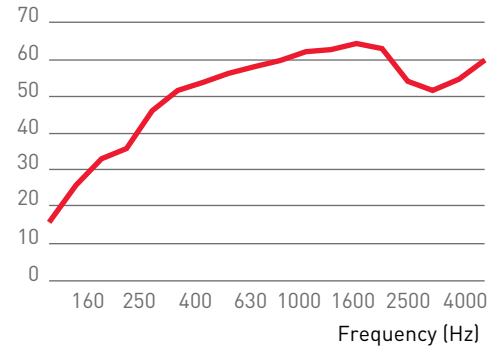
Sound Transmission Class

51 (RAL-TL96-269)

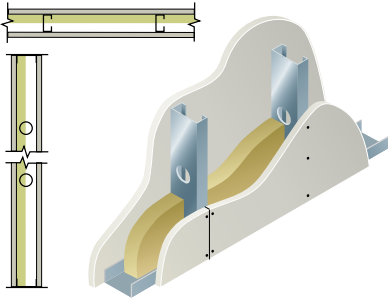
Fire Resistance

1 hour (UL design no. U448 and
 ULC design no W433)

Transmission loss (dB)



3



Single layer wall

1/2" (12.7 mm) gypsum board
 3-5/8" (92 mm) steel studs spaced
 24" (610 mm) centers
 1-1/2" (38 mm) ROXUL AFB

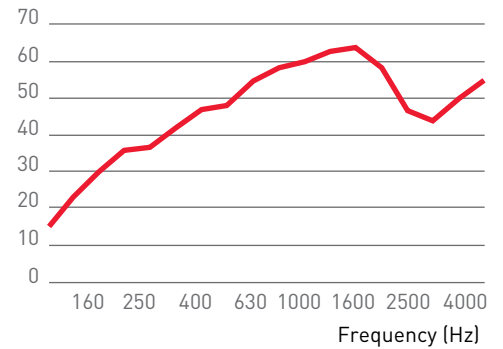
Sound Transmission Class

46 (RAL-TL90-195)

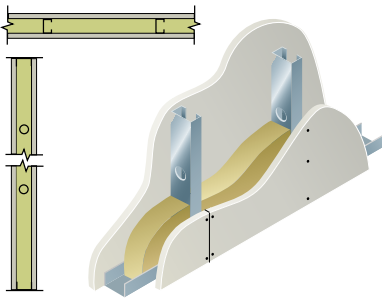
Fire Resistance

1 hour (UL design no. U448 and
 ULC design no W433)

Transmission loss (dB)



4



Single layer wall

5/8" (15.9 mm) gypsum board
 2-1/2" (64 mm) steel studs spaced
 24" (610 mm) centers
 2-1/2" (64 mm) ROXUL AFB

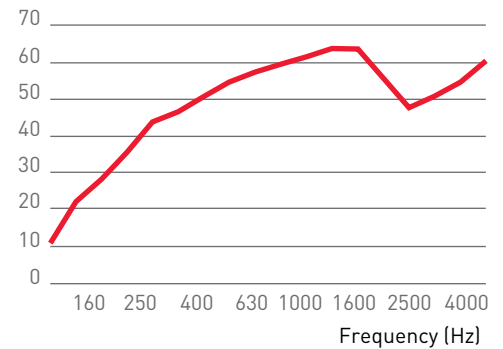
Sound Transmission Class

46 (RAL-TL96-270)

Fire Resistance

1 hour (NBC of Canada 1995
 and UL design no. U448)

Transmission loss (dB)

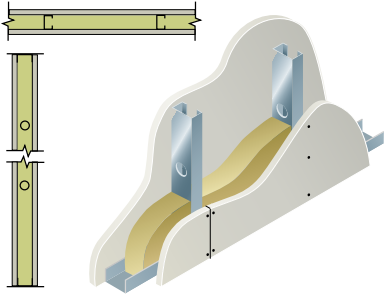


Construction

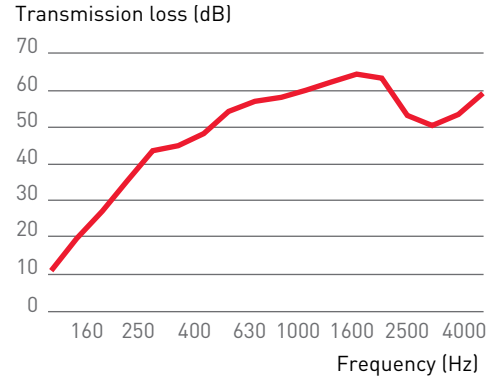
Description

Transmission Loss

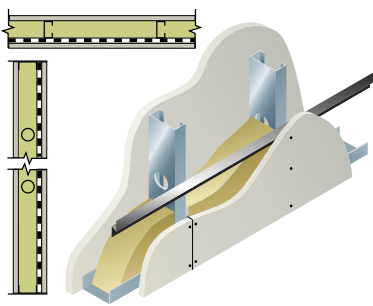
5



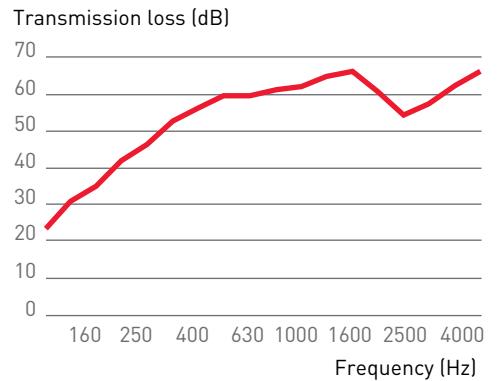
Single layer wall
 1/2" (12.7 mm) gypsum board
 2-1/2" (64 mm) steel studs spaced
 24" (610 mm) centers
 2-1/2" (64 mm) ROXUL AFB
Sound Transmission Class
 44 (RAL-TL96-285)
Fire Resistance
 1 hour (UL design no. U448 and
 ULC design no W433)



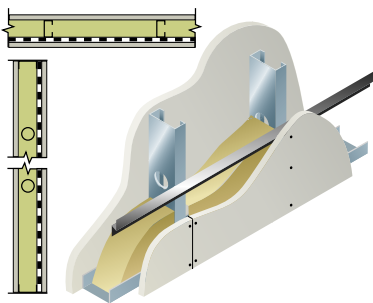
6



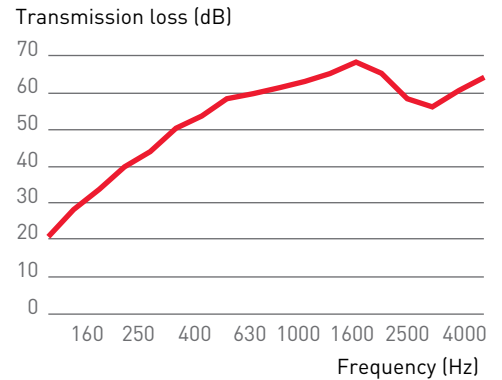
**Single layer wall with resilient
 metal channels on one side**
 5/8" (15.9 mm) gypsum board
 3-5/8" (92 mm) steel studs spaced
 24" (610 mm) centers
 Resilient metal channels spaced
 horizontally at 24" (610 mm) centers
 3" (76 mm) ROXUL AFB
Sound Transmission Class
 55 (RAL-TL96-289)
Fire Resistance
 1 hour (UL design no. V417 and U465)
 1 hour (ULC W447)



7



**Single layer wall with resilient
 metal channels on one side**
 1/2" (12.7 mm) gypsum board
 3-5/8" (92 mm) steel studs spaced
 24" (610 mm) centers
 Resilient metal channels spaced
 horizontally at 24" (610 mm) centers
 3" (76 mm) ROXUL AFB
Sound Transmission Class
 53 (RAL-TL96-288)
Fire Resistance
 1 hour (UL design no. U448)

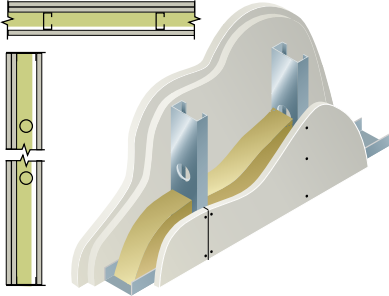


Construction

Description

Transmission Loss

8



Unbalanced wall

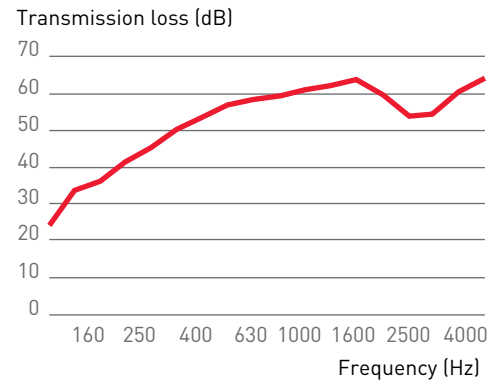
5/8" (15.9 mm) gypsum board, single layer one side; double layer other
 3-5/8" (92 mm) steel studs spaced 24" (610 mm) centers
 3" (76 mm) ROXUL AFB/ 3 1/2" (89 mm) AFB

Sound Transmission Class

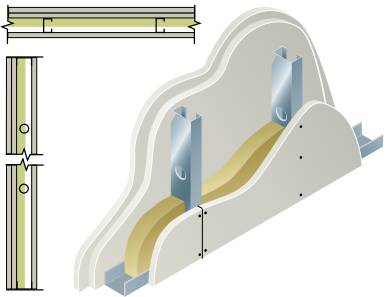
56 (RAL-TL96-264)

Fire Resistance

1-1/2 hour (NBC of Canada 1995)*
 1 hour (UL design no. V417)
 *NB. 3 1/2" (89 mm) AFB only



9



Unbalanced wall

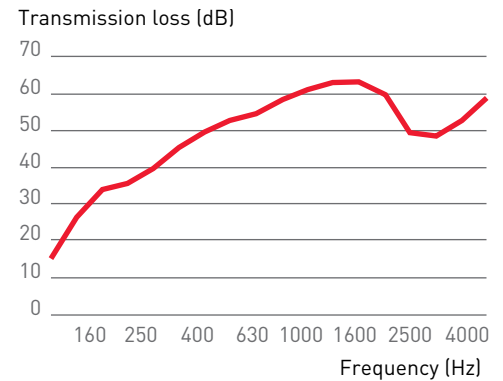
1/2" (12.7 mm) gypsum board, single layer one side; double layer other
 2-1/2" (64 mm) steel studs spaced 24" (610 mm) centers
 1-1/2" (38 mm) ROXUL AFB

Sound Transmission Class

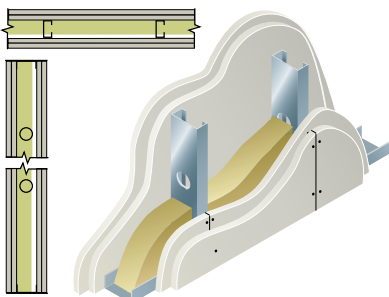
50 (RAL-TL90-186)

Fire Resistance

1 hour (NBC of Canada 1995 and UL design no. U448)



10



Double layer wall

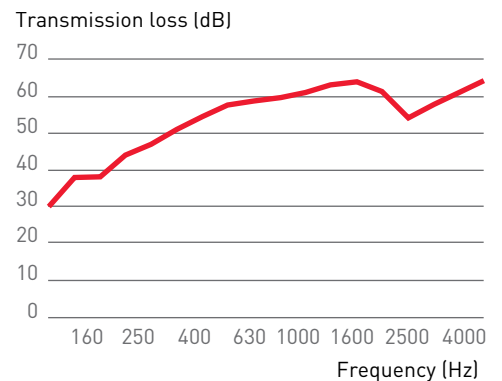
2 layers of 5/8" (15.9 mm) gypsum board on both sides
 3-5/8" (92 mm) steel studs spaced 24" (610 mm) centers
 3" (76 mm) ROXUL AFB

Sound Transmission Class

57 (RAL-TL96-268)

Fire Resistance

2 hours (UL design no. U411 and V419, NBC of Canada 1995)

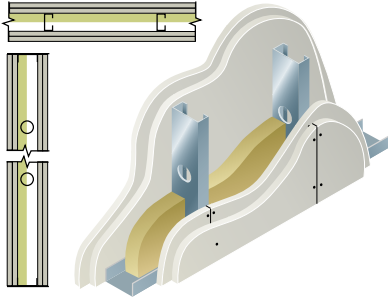


Construction

Description

Transmission Loss

11



Double layer wall

2 layers of 1/2" (12.7 mm) gypsum board on both sides
 3-5/8" (92 mm) steel studs spaced 24" (610 mm) centers
 1-1/2" (38 mm) ROXUL AFB

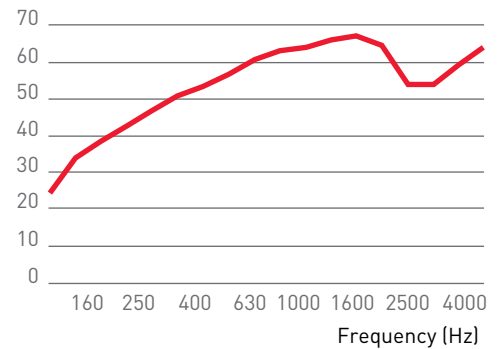
Sound Transmission Class

56 (RAL-TL90-196)

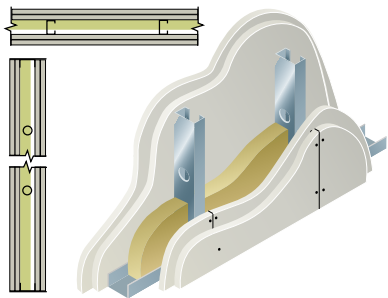
Fire Resistance

2 hours (UL design no. U412 and V418)

Transmission loss (dB)



12



Double layer wall

2 layers of 5/8" (15.9 mm) gypsum board on both sides
 2-1/2" (64 mm) steel studs spaced 24" (610 mm) centers
 1-1/2" (38 mm) ROXUL AFB

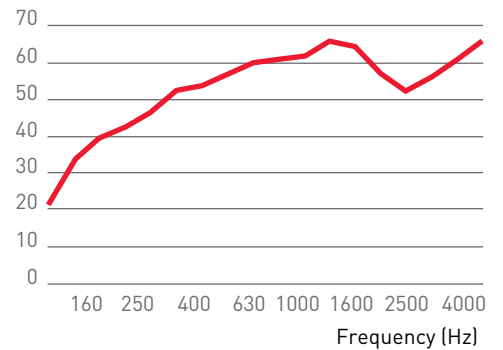
Sound Transmission Class

56 (RAL-TL90-193)

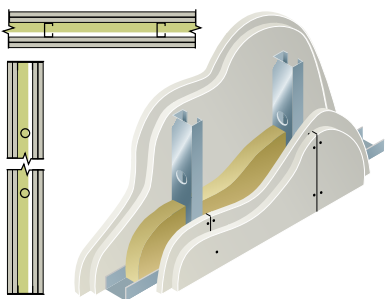
Fire Resistance

2 hours (UL design no. U411 and V419, NBC of Canada)

Transmission loss (dB)



13



Double layer wall

2 layers of 1/2" (12.7 mm) gypsum board on both sides
 2-1/2" (64 mm) steel studs spaced 24" (610 mm) centers
 1-1/2" (38 mm) ROXUL AFB

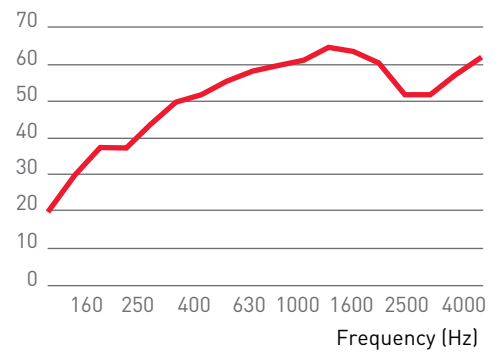
Sound Transmission Class

53 (RAL-TL90-185)

Fire Resistance

2 hours (UL design no. U412 and V418)

Transmission loss (dB)





A Global Leader

ROXUL Inc. is part of ROCKWOOL International, the largest producer of stone wool insulation, which is made from natural basalt rock and recycled material.

ROCKWOOL International was founded in 1909 and today operates worldwide with more than 8,500 employees, with 27 factories across three continents.

ROCKWOOL has more than 40 years experience in developing and manufacturing advanced wall system products. For more than 20 years, ROXUL has been serving the North American market.

In addition to acoustical fire batt insulation for residential and commercial construction, ROXUL also manufactures a range of other premium insulation products for multiple applications.

ROXUL is the Better Insulation

ROXUL AFB® is an innovative insulation offering a world of green features. When ROXUL is the specified insulation, green building developers can earn a variety of LEED® (Leadership in Energy and Environmental Design) points across four key categories toward sustainable development.

Environmentally Sustainable

Our stone wool production process utilizes some of the most advanced technology available. The ROXUL facility is designed to capture and recycle rainwater, reduce energy consumption, and create zero waste to landfill by recycling raw materials back into the production process.

ROXUL insulations are created using naturally occurring, inorganic raw materials and materials with a high-recycled content. Stone wool insulation is non-combustible and achieves its thermal performance without the use of blowing agents. The products do not off-gas and are fully recyclable, therefore contributing to a sustainable environment.

ROXUL is pleased to have third-party certification of our products' recycled content for our Milton facility completed by ICC -ES SAVE™. All ROXUL products produced in the Milton facility contain a minimum of 40% recycled content. ROXUL products produced in our Grand Forks facility are currently awaiting ICC-ES Save™ certification. ROXUL demonstrates its commitment to the environment through eco-friendly insulation products and green manufacturing processes.

For further details contact your ROXUL sales representative. Please visit www.roxul.com for the latest information.



ROXUL INC.

420 Bronte Street South
Suite 105,
Milton, Ontario L9T 0H9
Tel: 1-800-265-6878
www.roxul.com

