



ROXUL AFB®

Acoustical Fire Batt Insulation for
Commercial & Interior Partition Walls.

ROXUL®
The Better Insulation™

Batt insulation that fights both fire and noise.

ROXUL AFB®

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

This stone wool 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 – Acoustically Better

Sound Transmission Class (STC) values don't take into account Lower Frequency Sounds (LFS) which can cause vibrations between rooms, negatively affecting the sound environment. The higher density of ROXUL AFB can reduce sound transmission, helping to create a quiet and comfortable space.

Sound Control

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, 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).

In commercial applications, much of the sound to be controlled is in the low frequency or bass ranges. This noise includes conversation, projection/video equipment, mechanical rooms and ventilation systems. In the lower 1/3 octave bands, ROXUL AFB outperforms glass wool insulation, providing more low frequency absorption when comparing acoustical testing at low frequencies (see chart "Random Incidence Sound Absorption Coefficients, in 1/3 Octave Band", pg. 3).



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® is non-combustible and will not develop toxic smoke or promote flame spread, even when directly exposed to fire. AFB will therefore not add fuel to an existing fire, making it ideal for use in high occupancy buildings. Studies have shown that mineral wool insulated rooms provide a 54% increase in overall fire resistance rating compared to non-insulated rooms.

Since stone wool does not contribute to a fire, it can provide valuable extra time for people to reach safety, a critical factor especially in health and education facilities. It can also provide fire services personnel additional time to control the spread of fire while reducing property damage.

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%



Water Repellent

ROXUL AFB will not absorb or hold water and will not promote mold or fungi growth. It has superior drying potential, effectively managing moisture in the event that it does get into the wall or floor, allowing it to dry out and maintain its sound and fire properties.



Sag-Free, Tight Fit

The higher density of AFB® provides superior sag resistance and fit. Other insulations may sag or slump over time with the settlement or the vibrations of interior doors opening and closing. This creates gaps that will allow sound to travel through. 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

2" thickness	2.8 lbs/ft ³	45 kg/m ³
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Thickness

Product thickness is available in 1" to 3.5" with ½" increments as well as 4", 5" and 6" offerings.

For more information about AFB® technical data and assembly details visit:

RSpec™ By **ROXUL**®
The Better Insulation™

Simplifying the Specification of Stone Wool
for Commercial Projects

www.rspec.com

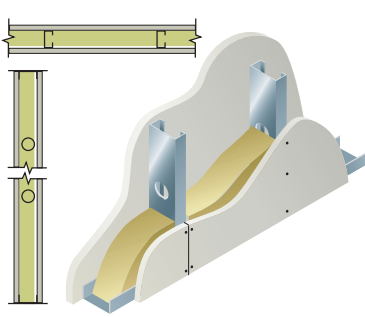



Commercial wall system performance using ROXUL AFB®.

In the following 13 commercial wall systems, ROXUL AFB® delivers excellent fire resistance ratings and Sound Transmission Class (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>	 <table border="1"> <caption>Transmission Loss Data (Estimated from Graph)</caption> <thead> <tr> <th>Frequency (Hz)</th> <th>Transmission Loss (dB)</th> </tr> </thead> <tbody> <tr><td>160</td><td>18</td></tr> <tr><td>250</td><td>35</td></tr> <tr><td>400</td><td>50</td></tr> <tr><td>630</td><td>55</td></tr> <tr><td>1000</td><td>60</td></tr> <tr><td>1600</td><td>60</td></tr> <tr><td>2500</td><td>48</td></tr> <tr><td>4000</td><td>58</td></tr> </tbody> </table>	Frequency (Hz)	Transmission Loss (dB)	160	18	250	35	400	50	630	55	1000	60	1600	60	2500	48	4000	58
Frequency (Hz)	Transmission Loss (dB)																			
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1600	60																			
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What is STC?

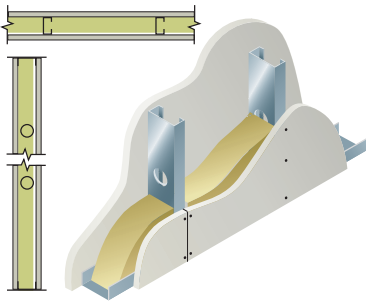
The Sound Transmission Class (STC) is a single-number rating of an assembly's ability to resist airborne sound transfer at the frequencies 125-4000 Hz. In general, a higher STC rating blocks more noise from transmitting through a partition. Because stone wool is denser than fiberglass, ROXUL's AFB insulation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

Construction

Description

Transmission Loss

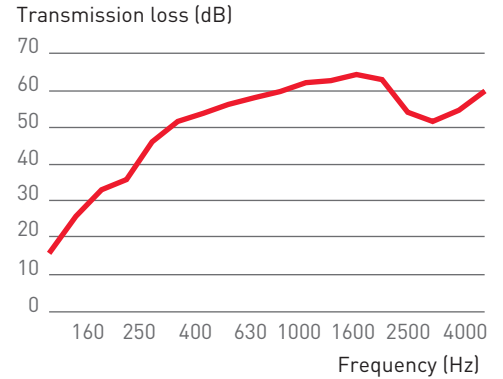
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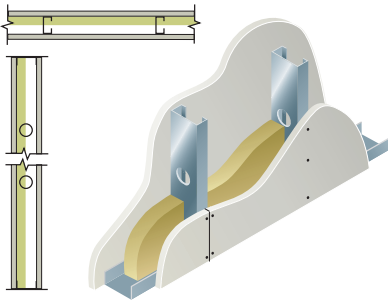
Single layer wall
 1/2" (12.7 mm) gypsum board
 3 5/8" (92 mm) steel studs spaced
 24" (610 mm) centers
 3" (76 mm) ROXUL AFB

Sound Transmission Class
 51 (RAL-TL96-269)

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



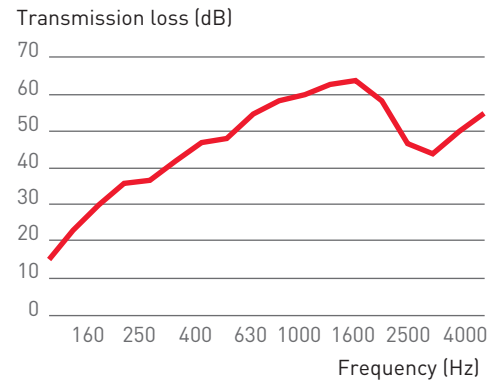
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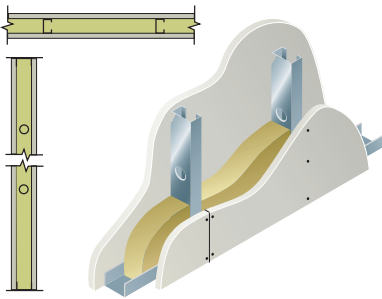
Single layer wall
 1/2" (12.7 mm) gypsum board
 3 5/8" (92 mm) steel studs spaced
 24" (610 mm) centers
 1 1/2" (38 mm) ROXUL AFB

Sound Transmission Class
 46 (RAL-TL90-195)

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



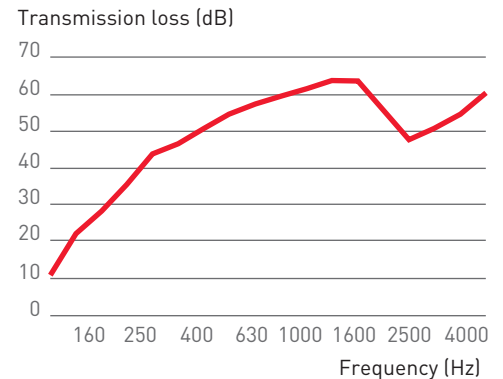
4



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)

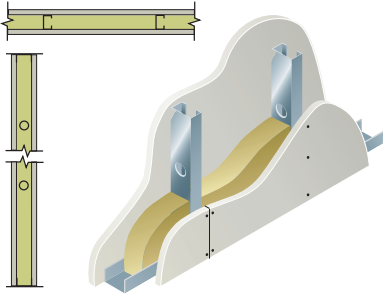


Construction

Description

Transmission Loss

5



Single layer wall

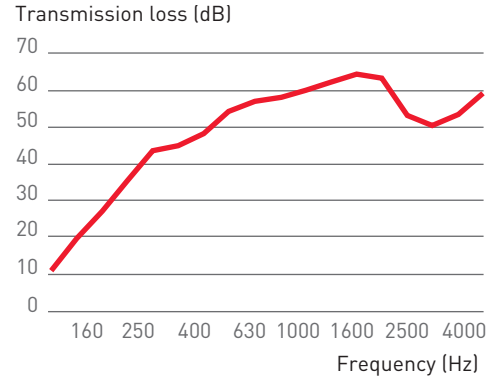
1/2" (12.7 mm) gypsum board
 2 1/2" (64 mm) steel studs spaced
 24" (610 mm) centers
 2 1/2" (64 mm) ROXUL AFB

Sound Transmission Class

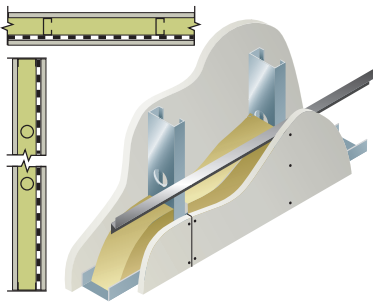
44 (RAL-TL96-285)

Fire Resistance

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



6



Single layer wall with resilient metal channels on one side

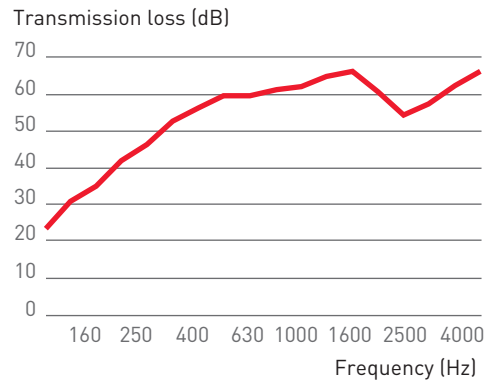
5/8" (15.9 mm) gypsum board
 3 5/8" (92 mm) steel studs spaced
 24" (610 mm) centers
 Resilient metal channels spaced
 horizontally at 24" (610 mm) centers
 3" (76 mm) ROXUL AFB

Sound Transmission Class

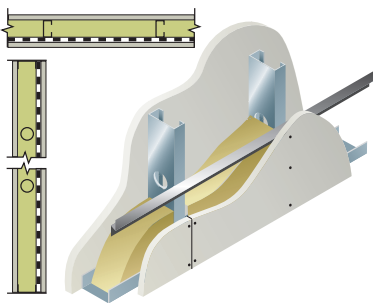
55 (RAL-TL96-289)

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

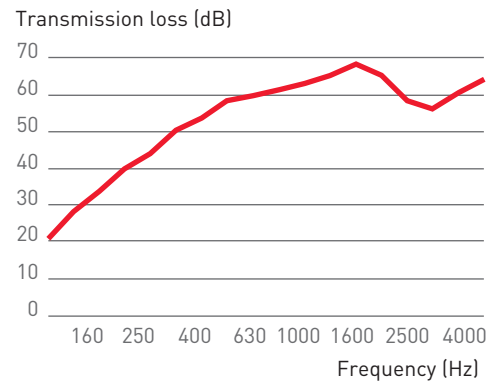
1/2" (12.7 mm) gypsum board
 3 5/8" (92 mm) steel studs spaced
 24" (610 mm) centers
 Resilient metal channels spaced
 horizontally at 24" (610 mm) centers
 3" (76 mm) ROXUL AFB

Sound Transmission Class

53 (RAL-TL96-288)

Fire Resistance

1 hour (UL design no. U448)

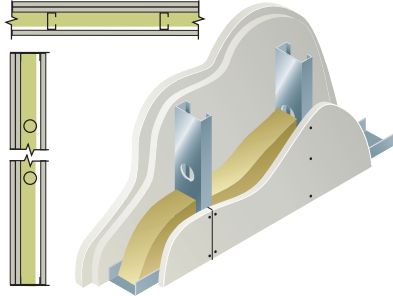


Construction

Description

Transmission Loss

8



Unbalanced wall

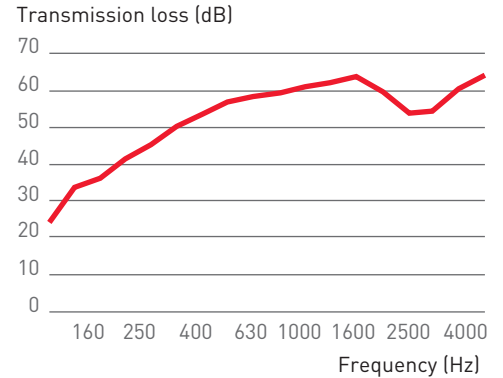
5/8" (15.9 mm) gypsum board, single layer one side; double layer other
 3 5/8" (92 mm) steel studs spaced 24" (610 mm) centers
 3" (76 mm) ROXUL AFB/ 3 1/2" (89 mm) AFB

Sound Transmission Class

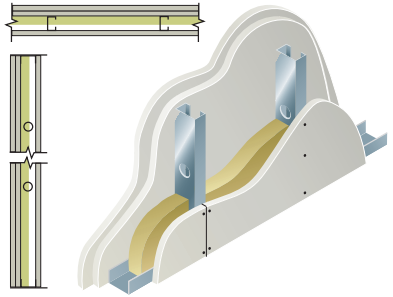
56 (RAL-TL96-264)

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

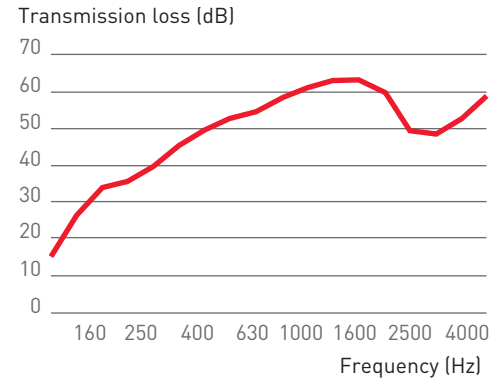
1/2" (12.7 mm) gypsum board, single layer one side; double layer other
 2 1/2" (64 mm) steel studs spaced 24" (610 mm) centers
 1 1/2" (38 mm) ROXUL AFB

Sound Transmission Class

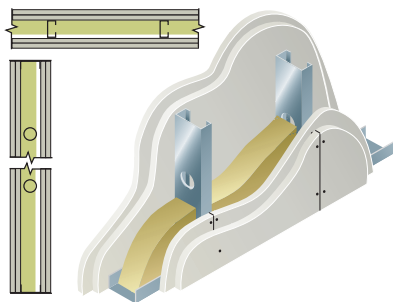
50 (RAL-TL90-186)

Fire Resistance

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



10



Double layer wall

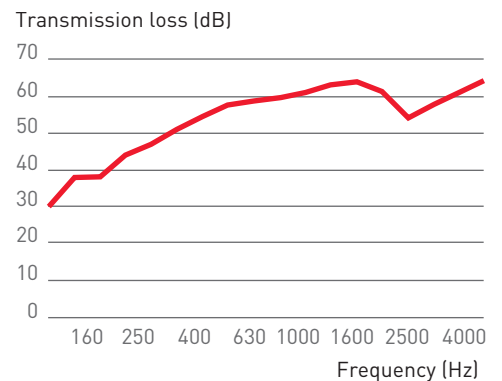
2 layers of 5/8" (15.9 mm) gypsum board on both sides
 3 5/8" (92 mm) steel studs spaced 24" (610 mm) centers
 3" (76 mm) ROXUL AFB

Sound Transmission Class

57 (RAL-TL96-268)

Fire Resistance

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

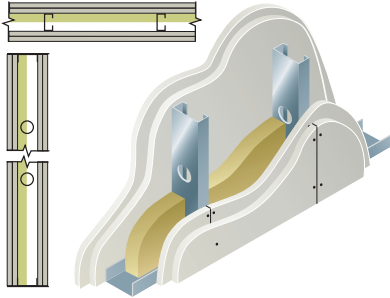


Construction

Description

Transmission Loss

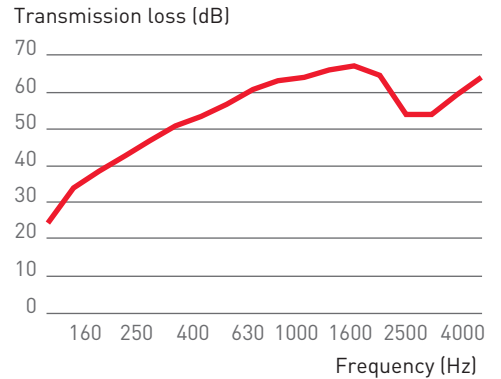
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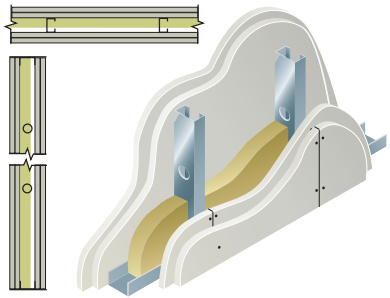
Double layer wall
 2 layers of 1/2" (12.7 mm)
 gypsum board on both sides
 3 5/8" (92 mm) steel studs spaced
 24" (610 mm) centers
 1 1/2" (38 mm) ROXUL AFB

Sound Transmission Class
 56 (RAL-TL90-196)

Fire Resistance
 2 hours (UL design no. U412 and V418)



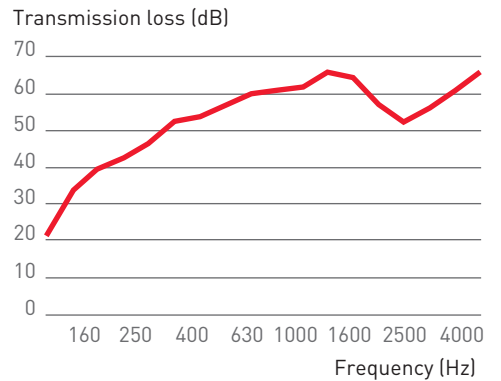
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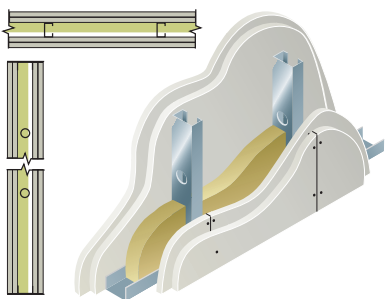
Double layer wall
 2 layers of 5/8" (15.9 mm)
 gypsum board on both sides
 2 1/2" (64 mm) steel studs spaced
 24" (610 mm) centers
 1 1/2" (38 mm) ROXUL AFB

Sound Transmission Class
 56 (RAL-TL90-193)

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



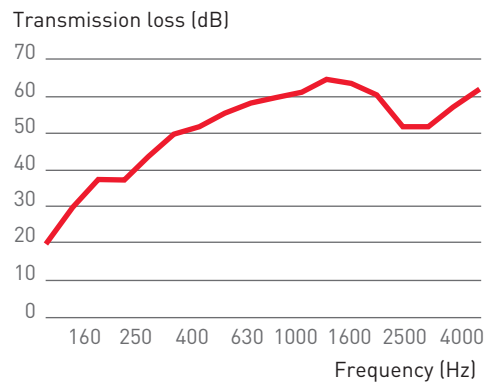
13



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)





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 9,700 employees, with 26 factories across three continents.

ROCKWOOL has more than 40 years experience in developing and manufacturing advanced wall system products. For more than 25 years, ROXUL has been serving the North American market.

In addition to residential insulation, ROXUL also manufactures a range of other premium insulation products for commercial and industrial 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 at the Milton facility contain a minimum of 40% recycled content. For further details, contact your ROXUL Sales Representative. Please visit www.roxul.com for the latest information.



ROXUL®
The Better Insulation™

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