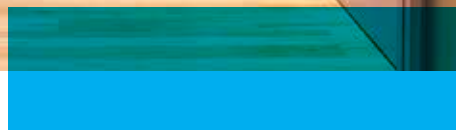


ROCKWOOL AFB®

Acoustical Fire Batt Insulation for Commercial
& Interior Partition Wall.



Batt insulation that fights both fire and noise.

ROCKWOOL AFB®

ROCKWOOL AFB® is a lightweight, batt insulation specifically designed for steel stud and wood 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 ROCKWOOL AFB® can reduce sound transmission, helping to create a quiet and comfortable space.

Sound Control

When ROCKWOOL 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, ROCKWOOL 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 |
| ROCKWOOL AFB® | 3" (75 mm) batt | 44.2 | 1.7 | 16,600 | 900 |

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 |
| ROCKWOOL AFB® Sample 1 | 3" | 0.18 | 0.22 | 0.28 | 0.33 | 0.40 | 0.50 | 0.62 |
| ROCKWOOL 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 |
| ROCKWOOL 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 | | | | | | |
|-----------|-----------------------------|--------|--------|---------|---------|---------|------|
| | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | NRC |
| 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 |
| 6.0" | 1.11 | 1.28 | 1.15 | 1.06 | 1.03 | 1.01 | 1.15 |

Features and benefits that set AFB® apart.



Fire Resistant

ROCKWOOL 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.

Water Repellent

ROCKWOOL 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.

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. 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 ROCKWOOL 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) |
|--------|----------------------|---------------------|

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) - 413 mm (width) x 1219 mm (length)

24.25" (width) x 48" (length) - 616 mm (width) x 1219 mm (length)

15.25" (width) x 47" (length) - 387 mm (width) x 1194 mm (length)

19.2" (width) x 47" (length) - 488 mm (width) x 1194 mm (length)

23" (width) x 47" (length) - 584 mm (width) x 1194 mm (length)

Thickness

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

Density

| | | |
|------------------------------|-------------------------|----------------------|
| Nominal Density [†] | 2.5 lbs/ft ³ | 40 kg/m ³ |
|------------------------------|-------------------------|----------------------|

[†]Density will change with thickness. Density is not a performance criteria but is commonly referred to when specifying insulation. Actual density is the true density of the insulation and Nominal density is the effective density of the insulation relative to a historic benchmark where the insulation contained 40% non-fibrous content also known as Shot (ASTM C612-99). Please contact ROCKWOOL for more information.



Commercial wall system performance using ROCKWOOL AFB®.

In the following 13 commercial wall systems, ROCKWOOL AFB® delivers excellent fire resistance ratings and Sound Transmission Class (STC).

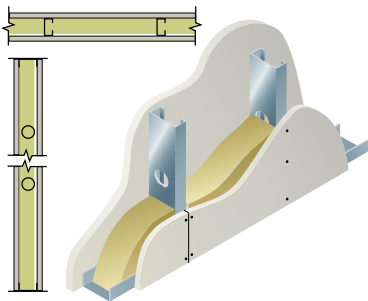
The right-hand column shows the results of acoustical tests done on these ROCKWOOL AFB® wall systems at the internationally-recognized Riverbank Acoustical Laboratories.

For other wall constructions not shown here, please contact ROCKWOOL 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

1



Description

Single layer wall

5/8" (15.9 mm) gypsum board

3 5/8" (92 mm) steel studs spaced
24" (610 mm) centers

3" (76 mm) ROCKWOOL AFB®

Sound Transmission Class

52 (RAL-TL95-195)

Fire Resistance

1 hour (UL design no. V417 and U465)

1 hour (ULC W447)

Transmission Loss

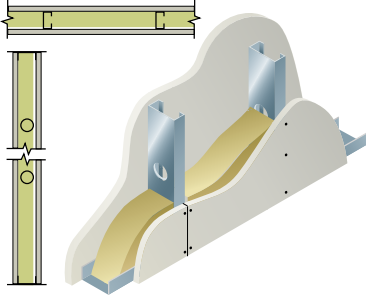


What is STC?

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.

Construction

2



Description

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) ROCKWOOL AFB®

Sound Transmission Class

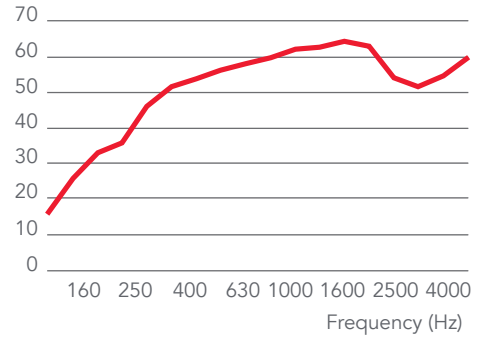
51 (RAL-TL96-269)

Fire Resistance

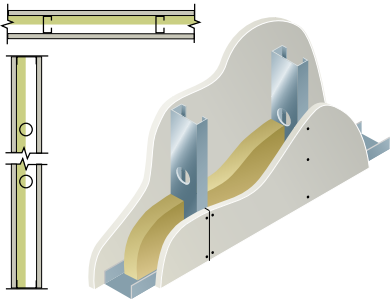
1 hour (UL design no. U448 and
ULC design no W433)

Transmission Loss

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) ROCKWOOL AFB®

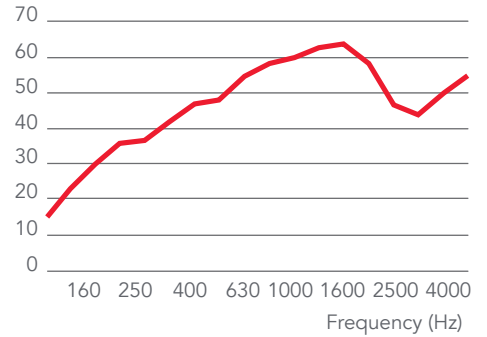
Sound Transmission Class

46 (RAL-TL90-195)

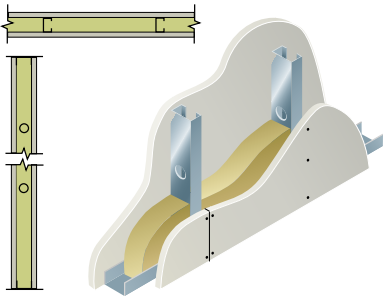
Fire Resistance

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) ROCKWOOL AFB®

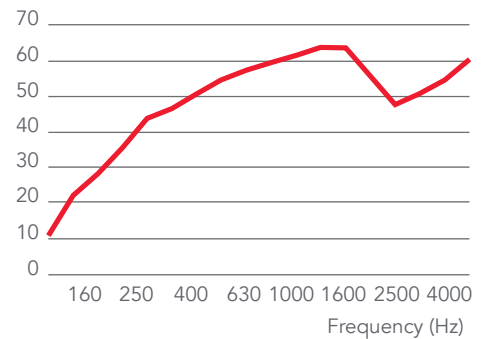
Sound Transmission Class

46 (RAL-TL96-270)

Fire Resistance

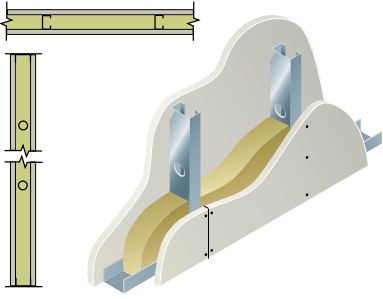
1 hour (NBC of Canada 1995
and UL design no. U448)

Transmission loss (dB)



Construction

5



Description

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) ROCKWOOL AFB®

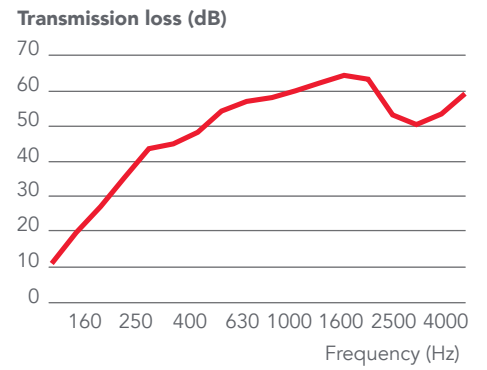
Sound Transmission Class

44 (RAL-TL96-285)

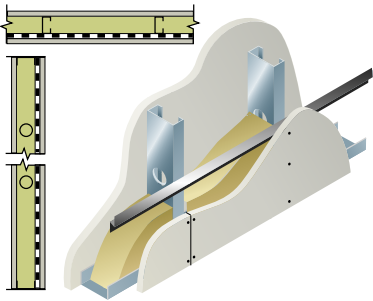
Fire Resistance

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

Transmission Loss



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

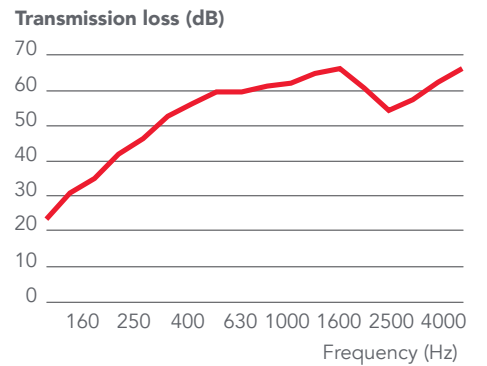
3" (76 mm) ROCKWOOL AFB®

Sound Transmission Class

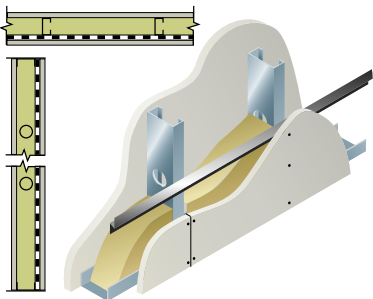
55 (RAL-TL96-289)

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

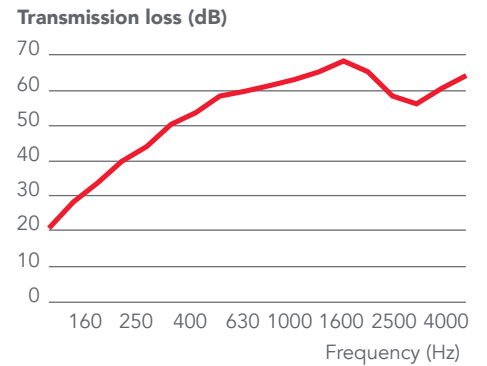
3" (76 mm) ROCKWOOL AFB®

Sound Transmission Class

53 (RAL-TL96-288)

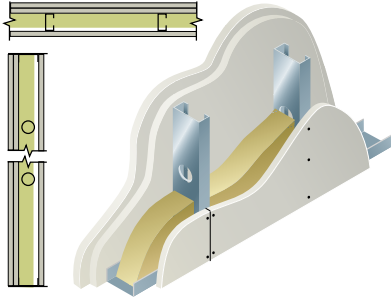
Fire Resistance

1 hour (UL design no. U448)



Construction

8



Description

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) ROCKWOOL AFB®/
3 1/2" (89 mm) AFB®

Sound Transmission Class

56 (RAL-TL96-264)

Fire Resistance

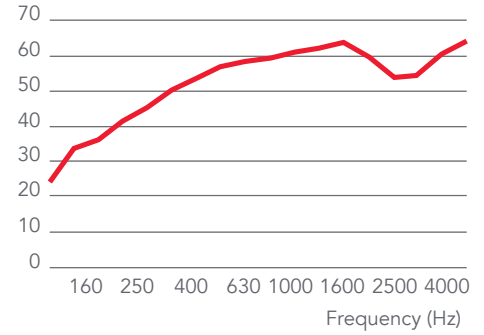
1 1/2 hour (NBC of Canada 1995)*

1 hour (UL design no. V417)

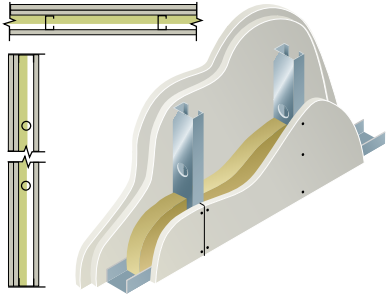
*NB. 3 1/2" (89 mm) AFB® only

Transmission Loss

Transmission loss (dB)



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) ROCKWOOL AFB®

Sound Transmission Class

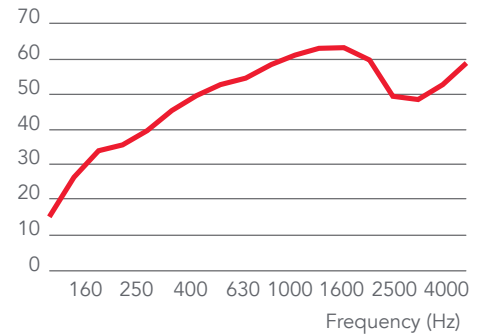
50 (RAL-TL90-186)

Fire Resistance

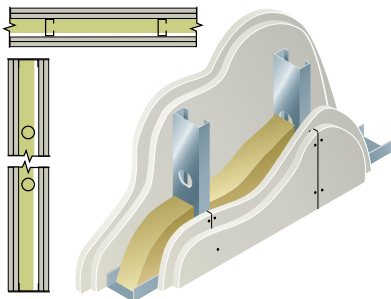
1 hour (NBC of Canada 1995

and UL design no. U448)

Transmission loss (dB)



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) ROCKWOOL AFB®

Sound Transmission Class

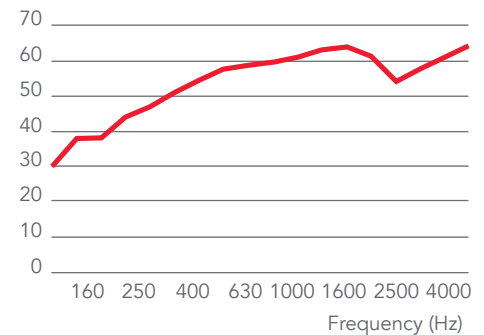
57 (RAL-TL96-268)

Fire Resistance

2 hours (UL design no. U411

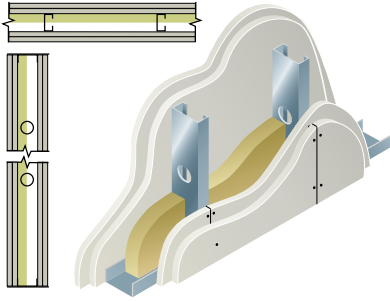
and V419, NBC of Canada 1995)

Transmission loss (dB)



Construction

11



Description

Double layer wall

2 layers of 1/2" (12.7 mm)
gypsum board on both sides

3 1/2" (92 mm) steel studs spaced
24" (610 mm) centers

1 1/2" (38 mm) ROCKWOOL AFB®

Sound Transmission Class

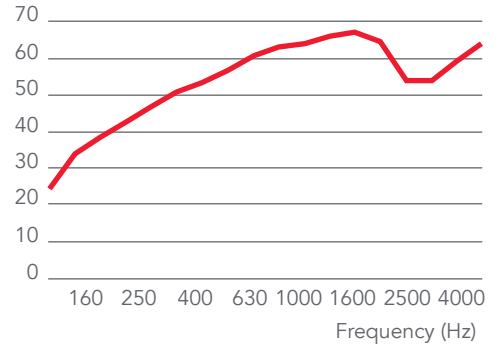
56 (RAL-TL90-196)

Fire Resistance

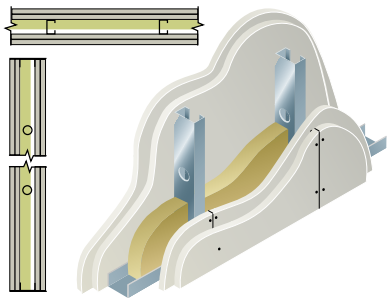
2 hours (UL design no. U412 and
V418)

Transmission Loss

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) ROCKWOOL AFB®

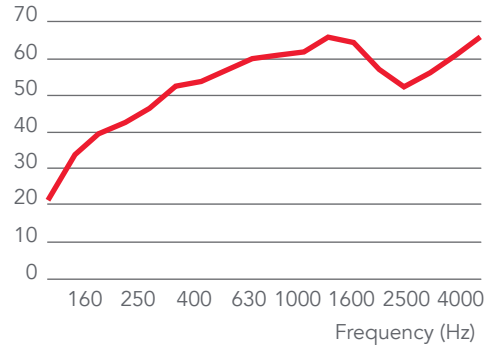
Sound Transmission Class

56 (RAL-TL90-193)

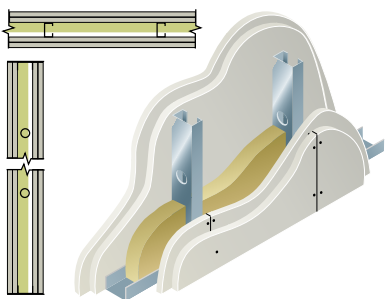
Fire Resistance

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) ROCKWOOL AFB®

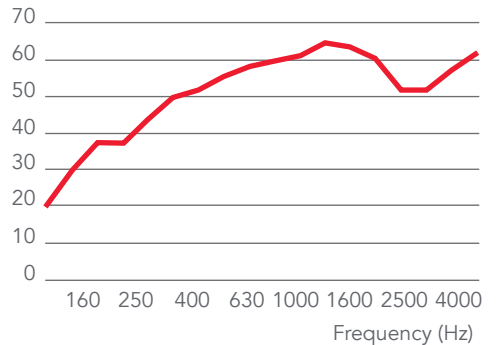
Sound Transmission Class

53 (RAL-TL90-185)

Fire Resistance

2 hours (UL design no. U412
and V418)

Transmission loss (dB)



At the ROCKWOOL Group, we are committed to enriching the lives of everyone who comes into contact with our solutions. Our expertise is perfectly suited to tackle many of today's biggest sustainability and development challenges, from energy consumption and noise pollution to fire resilience, water scarcity and flooding. Our range of products reflects the diversity of the world's needs, while supporting our stakeholders in reducing their own carbon footprint.

Stone wool is a versatile material and forms the basis of all our businesses. With more than 11,000 employees in 39 countries, we are the world leader in stone wool solutions, from building insulation to acoustic ceilings, external cladding systems to horticultural solutions, engineered fibres for industrial use to insulation for the process industry and marine and offshore.

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