Building Envelope Design by Roxul® (BEDR™)

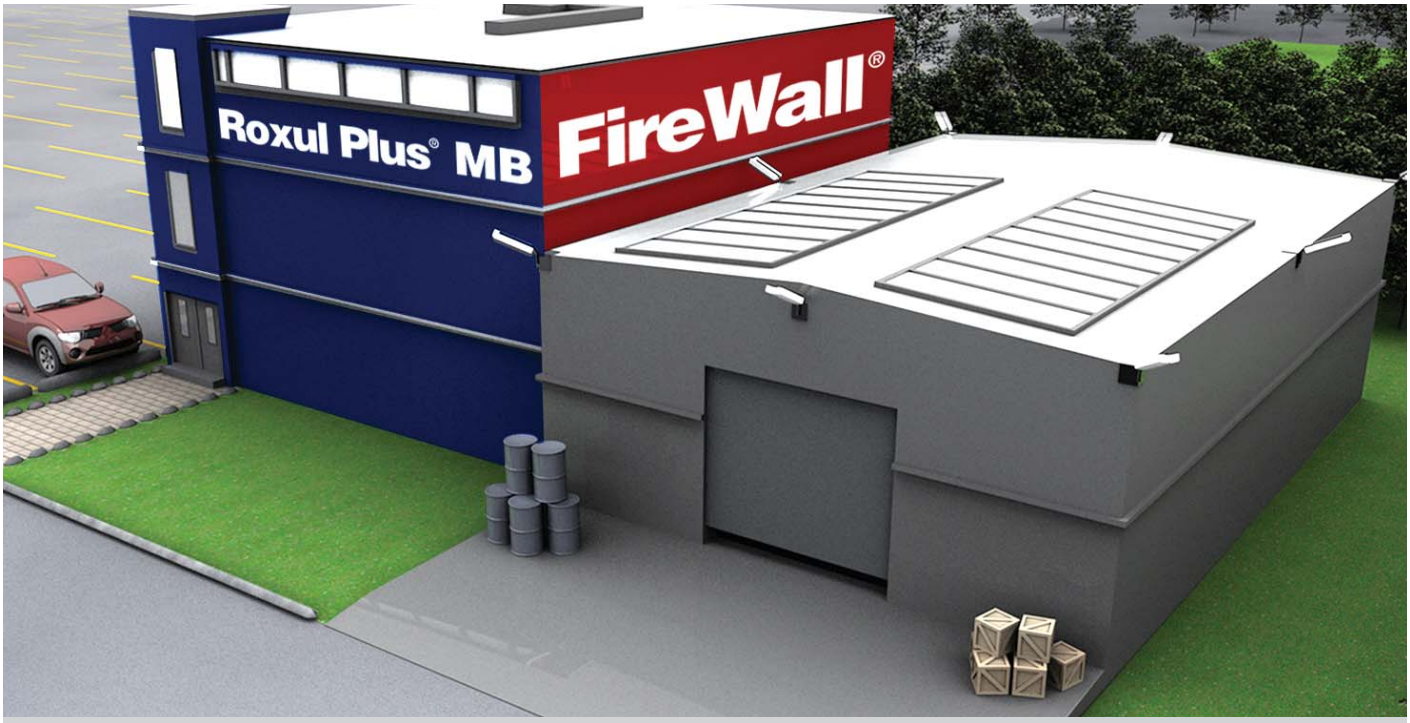
FireWall® and Roxul Plus® MB

Fire Rated Board Insulation for
Pre-Engineered Metal Buildings

ROXUL
The Better Insulation

Exterior Wall Insulation for Pre-Engineered Metal Buildings

Roxul FireWall® and Roxul Plus® MB are non-combustible, high-density insulation products for interior and exterior walls in pre-engineered metal building construction. This stone wool insulation is made from natural stone and recycled content, providing exceptional fire-resistance and energy-saving properties. While similar in thermal insulating properties, each product is designed for specific building applications.



Roxul FireWall® and Roxul Plus® MB products are used to insulate walls in pre-engineered metal buildings. Roxul FireWall is ideally suited for zero lot line applications where buildings are in close proximity and fire safety is essential.

Assemblies for Zero Lot Line and Exterior Wall Applications

Basic Concept of a Fire Rated Wall Featuring FireWall® Insulation in the Wall Assembly

FireWall® is a non-combustible, rigid stone wool insulation board that provides added fire protection for metal buildings in close proximity.

FireWall is designed for interior or exterior non-load bearing metal panel wall assemblies where a fire resistance rating is required. Roxul offers the option of one or two hour, single side or double sided fire rated assemblies.

Components: Exterior Metal Cladding, Roxul FireWall®, Z-Bar Grits, Ceramic Fire Blanket (Z-Girt Cover), Flashing Channels, Wall and Partition Facings/Accessories

Note: For ULC Designs W610 and W611 ceramic strips required on two sides. For actual designs please reference UL/ULC Directories.

Top View

Complete Wall Assembly 12" min. overlap

Roxul Plus® MB is a lightweight, non-combustible, semi-rigid blanket insulation, designed for metal building construction where an hourly fire rating is not required.

Insulating buildings with Roxul Plus MB will help increase energy efficiency, improve thermal stability, and enhance fire protection for the overall comfort and safety of occupants.

That's why Roxul Plus MB is the insulation of choice for today's green builders in commercial construction.

Components: Exterior Metal Cladding, Roxul Plus® MB, Z-Bar Girts, Flashing Channels, Wal and Partition Facings/Accessories

These products also provide superior performance in acoustic assemblies, as well as in applications for mechanical equipment isolation and insulation.

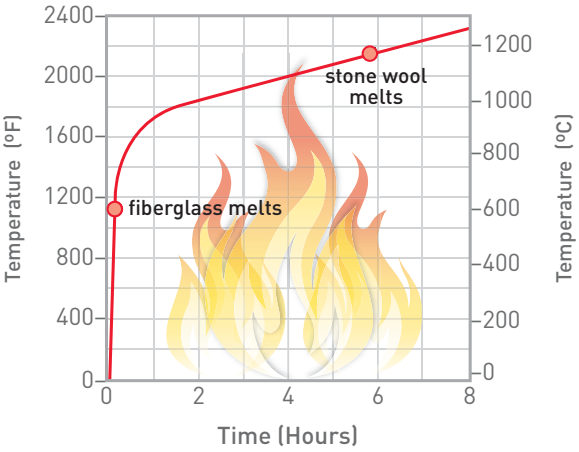
Fire Resistance

Roxul FireWall® and Roxul Plus® MB are non-combustible, able to withstand temperatures up to 2150 ºF (1177 ºC), and do not produce smoke or propagate flames, providing a critical line of defense in fire protection.

These products provide high temperature fire protection, particularly when a fire separation wall is required.

Roxul FireWall's fire resistance rating allows builders to reduce the required separation and increase the area of buildings in close proximity to each other.

Temperature Development in a Standard Fire (ASTM E119)



Roxul FireWall® is able to withstand the intense heat of fire approaching 2150 ºF (1177 ºC) without melting or burning. It is specifically designed to meet building codes in high density areas where buildings are in close proximity.

Fire-Rated Exterior Non-Loadbearing Sheet Steel Walls

Product	Fire Resistance Rating	Fire Protection	UL Design No.	ULC Design No.	Thickness*	W x L
FireWall® 1HR	1HR	From 1 Side	U654	W605	3" (76 mm) (2 layers)	24" x 48" (610 x 1220 mm) 31.5" x 48" (800 x 1220 mm) 32" x 48" (813 x 1220 mm)
		From 2 Sides	*check with Technical Support for latest update	W610		
FireWall® 2HR	2HR	From 1 Side	U655	W606	4" (102 mm) (2 layers)	24" x 48" (610 x 1220 mm) 31.5" x 48" (800 x 1220 mm) 32" x 48" (813 x 1220 mm)
		From 2 Sides	*check with Technical Support for latest update	W611		

*FireWall products are installed using 2 layers of 3" or 4" material respectively.

High Performance Insulation Designed for Pre-Engineered Metal Buildings

Energy-Saving Thermal Performance

The excellent thermal properties of Roxul Plus® MB and FireWall® contribute to energy efficient building envelopes helping to reduce ongoing energy costs. Roxul Plus® MB delivers consistent thermal performance across the board in metal building wall construction, maintaining an R-value of R4. Roxul FireWall® 1HR and 2HR maintains R-values of 4.2 and 4.3, respectively.

Superior Sound Absorption

Roxul FireWall® and Roxul Plus® MB demonstrate superior sound attenuation characteristics. The unique multi-directional fiber structure, and high density effectively traps and dissipates sound waves reducing noise transmission into and out of the building.

Water Repellent

The structure and integrity of Roxul insulation is not affected by the presence of water. The product is water repellent, resisting the infiltration of water into the system. It is compatible with air/vapor barrier systems to provide an extra layer of protection against moisture and thermal transfer. The product is inorganic and therefore does not rot, corrode, or promote fungi, mold and bacterial growth.

Roxul FireWall® 1HR & 2HR Technical Data

Compliance and Performance

ASTM C 612	Mineral Fiber Block and Board Thermal Insulation	Type IVB, Complies

Fire Performance

CAN/ULC S411	Test for Non-Combustability	Non-Combustible
CAN/ULC S102	Surface Burning Characteristics	Flame Spread = 0 Smoke Developed = 0

Maxiumum Service Temperature

ASTM C 411	Hot Surface Performance	In Compliance with ASTM C612 @ 1200 °F (650 °C)

Dimensional Stability

ASTM C 356	Linear Shrinkage	<1% @ 1200 °F (650 °C)

Moisture Resistance

ASTM C 1104	Moisture Sorption	0.04%

Thermal Resistance

FireWall 1HR ASTM C 518 (C 177)	R-value/inch @75 ºF RSI value/25.4 mm @25 ºC	4.2 hf. ft^2. F/BTU 0.74 m^{2}K/W
FireWall 2HR ASTM C 518 (C 177)	R-value/inch @75 ºF RSI value/25.4 mm @25 ºC	4.3 hf. ft^2. F/BTU 0.76 m^{2}K/W

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 – 24244 (all versions including B and C)	Conforms

Dimensions

24" W x 48" L (610 mm x1219 mm) 31.5" W x 48" L (800 mm x1219 mm) 32" W x 48" L (813 mm x1219 mm)

Thickness

FireWall 1HR	3" (76 mm) Thickness
FireWall 2HR	4" (102 mm) Thickness

Roxul Plus® MB Technical Data

Compliance and Performance

ASTM C553	Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications	Type I, II, III

Fire Performance

CAN/ULC S102	Surface Burning Characteristics	Flame Spread = 0 Smoke Developed = 0
ASTM E 84 (UL 723)	Surface Burning Characteristics	Flame Spread = 0 Smoke Developed = 5
CAN4-S114	Determination of Non-Combustibility	Non-Combustible

Maxiumum Service Temperature

ASTM C 411	Maximum Recommended Use Temperature	450 °F (232 °C)

Dimensional Stability

ASTM C 356	Linear Shrinkage	0.74 % @ 450 °F (232 °C)

Moisture Resistance

ASTM C 1104	Water Vapor Sorption	0.028%

Thermal Resistance

ASTM C 518 (C 177)	R-value/inch @ 75 °F RSI value/25.4 mm @ 24 °C	4.0 hf. ft^2. F/BTU 0.71 m^2K/W

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 Commision, Reg. Guide #1.36: U.S. Military Specifications MIL-I-24244 (all versions including B and C)	Conforms

Dimensions

24" W x 48" L (610 mm W x 1219 mm L)	Product thickness available in 2" through 4" in ½" increments as well as 5" and 6" offerings.

Density

ASTM C 612-00	2.0 lbs/$sq.ft.^3$ 32 kg/m^3

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 25 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 pre-engineered metal building insulation for commercial construction, Roxul also manufactures a range of other premium insulation products for multiple applications.

Roxul is the Better Insulation

Roxul FireWall® and Roxul Plus® MB are innovative insulations 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 **75% recycled content.** Our Milton facility is certified to produce products containing up to 93% recycled content. For further details, contact your Roxul Sales Representative. Roxul products produced in our Grand Forks facility are currently under ICC-ES SAVE™ Certification review. Please visit **www.roxul.com** for the latest information.

ICC ES SAVE™

HIGH RECYCLED CONTENT • RECYCLABLE •
*Contact us for details.

NFPA MEMBER 2010-2011

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Fire Resistant | Water Repellent | Sound Absorbent | Saves Energy | Made from Stone

ROXUL The Better Insulation

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