

Mid-Rise Wood Construction Solutions Guide



Introduction

The Mid-Rise Wood Construction Solutions Guide identifies several common locations where ROCKWOOL™ insulation can be used effectively in mid-rise wood construction. The unique properties of make it an excellent product for many common interior and exterior applications with respect to energy, moisture, fire, and acoustics.

Stone Wool Properties

Stone wool has several properties that make it an excellent insulation for use in mid-rise wood construction. The ROCKWOOL manufacturing process transforms basalt rock and recycled slag into insulation that combines the physical properties of stone with many of the characteristics of typical insulation wool.

Energy Performance

As North American energy codes continue to evolve, demands on building envelope thermal performance have increased, and wall assemblies with continuous exterior insulation are now frequently needed to meet stringent new requirements. High-density stone wool products are an excellent option for continuous insulation. Semi-rigid and rigid insulation boards are easy to secure with long screws or other cladding attachment systems, and when used in conjunction with stud cavity insulation, can greatly improve overall wall thermal performance.

Stone wool has excellent long-term thermal performance. While the R-value of other insulation materials may change over time due to the use of blowing agents, and poor dimensional stability can cause some insulation types to shrink or expand leading to thermal bridging, ROCKWOOL stone wool maintains consistent thermal performance. Because it is manufactured out of inert stone and slag, ROCKWOOL stone wool will not excessively shrink, expand, or sag over time, even after exposure to large temperature swings and varying levels of moisture exposure.

Moisture Management

Stone wool is a vapor permeable insulation which allows water vapor to travel freely through it. This has important implications on building envelope durability: vapor diffusion is an important drying mechanism in wall assemblies and, as such, should be encouraged where possible. Many insulation materials are vapor impermeable and when poorly installed can lead to the “double vapor barrier phenomenon” trapped wall moisture between vapor impermeable insulation and an interior vapor barrier, commonly polyethylene. ROCKWOOL stone wool mitigates this issue by allowing free movement of water vapor, which removes incidental moisture from the wall assembly.

Stone wool is resistant to water infiltration; therefore bulk water that contacts the outer surface of the insulation will largely drain away and will not be absorbed. When moisture exposure is unavoidable, stone wool will not support mold and fungal growth as it is manufactured out of inorganic material. This makes it an ideal product for applications where moisture exposure is common such as basements, foundation walls, and under-slabs.

Fire Resistance

ROCKWOOL stone wool is manufactured out of stone and slag without the aid of blowing agents. This process results in stone wool being highly fire resistant and capable of preventing smoke and fire from spreading in a fire. With a melting point of 2150 °F (1177 °C), stone wool is also classified as a non-combustible material that is acceptable in several UL/ULC tested and approved fire-rated assemblies. ROCKWOOL stone wool is an excellent solution for fire-stopping when used in conjunction with fire sealants to separate living units and floors. When used in place of other insulation materials, ROCKWOOL stone wool can provide critical additional time for occupants to safely evacuate the building.

Acoustics

With occupants living in relatively close proximity, sound isolation is critical to occupant comfort in mid-rise wood-framed buildings. ROCKWOOL stone wool insulation is spun out of multi-directional stone fibers that effectively absorb low-frequency sound. Stone wool is also denser than many other insulation materials; together, these properties reduce airborne and impact-related sound transmission. Sound control is particularly important near noise point sources such as mechanical rooms and parking garages; however proper application of stone wool products can effectively isolate these areas.

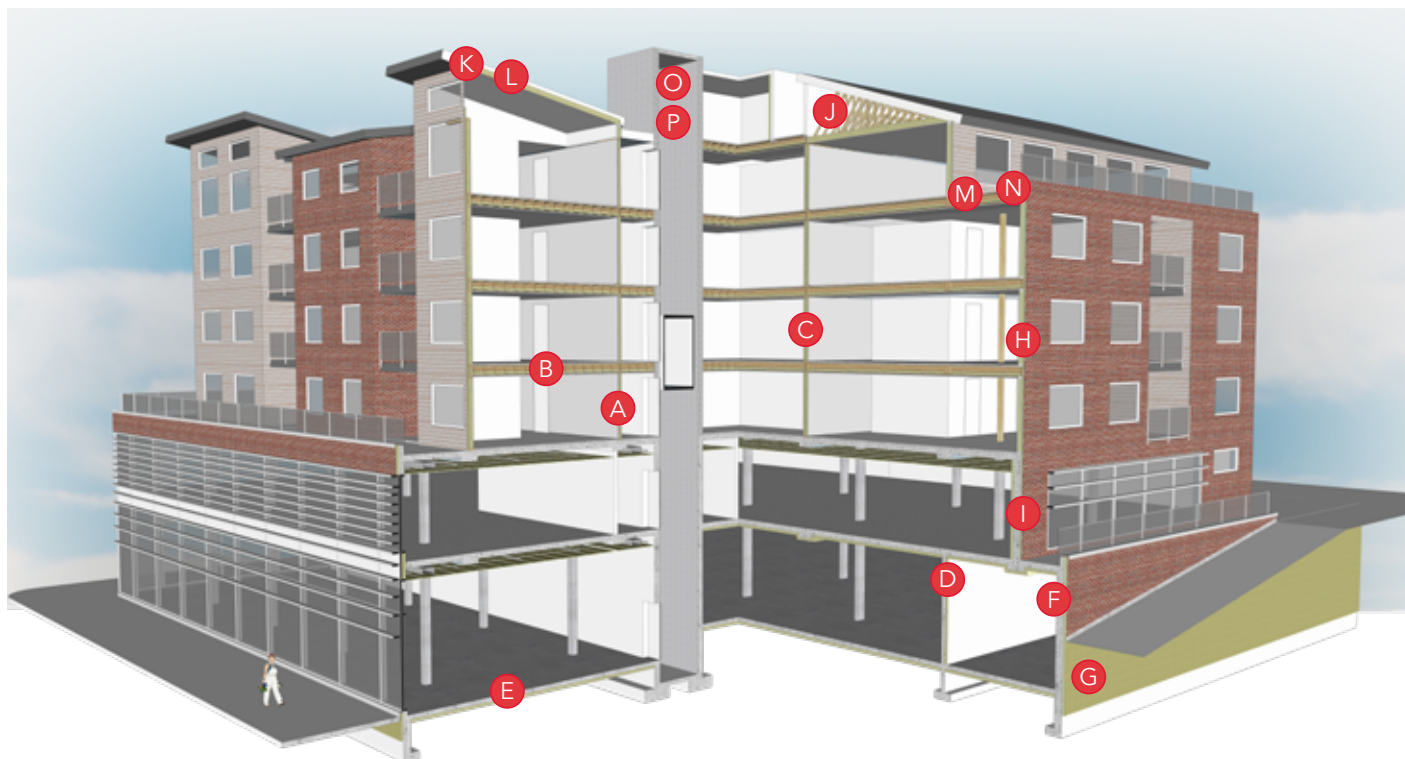
Environmental Considerations

The materials and processes used to produce ROCKWOOL stone wool are environmentally responsible. ROCKWOOL products are created from natural volcanic rock and contain up to 40% recycled content in the form of slag from steel production. This has a large influence on the life cycle environmental impacts of the finished insulation project. Blowing agents are not needed during stone wool manufacturing, so the insulation results in less harmful emissions as compared to other insulation types. This results in better human health and environmental outcomes, including lower green house gas emissions. Stone wool products can assist builders and designers in achieving a wide range of sustainability certifications or goals when used in mid-rise wood construction.



ROCKWOOL Solutions for Mid-Rise Wood Construction

ROCKWOOL stone wool products have numerous applications in mid-rise wood frame construction including walls, floors, and roof assemblies. See the figure below for some common locations where ROCKWOOL products can improve building performance and enhance occupant comfort and safety.



- A Interior Wood-framed Wall
- B Interior Wood-framed Floor
- C Interior Wood-framed Party Wall
- D Mechanical Room
- E Under Slab Insulation
- F Interior-insulated Below-grade Wall
- G Exterior-insulated Below-grade Wall
- H Exterior Wood-framed Wall

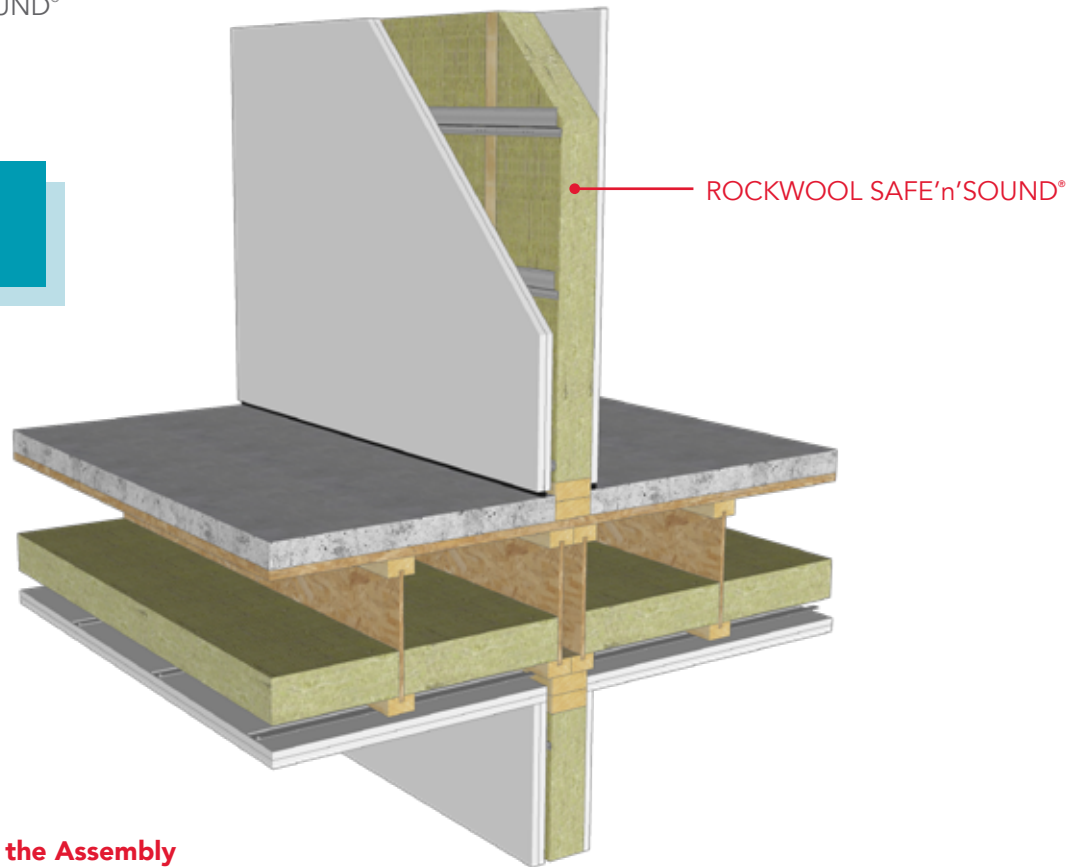
- I Exterior Mass Wall
- J Sloped Roof (Attic)
- K Sloped Roof (Cathedral Ceiling)
- L Sloped Roof (Exterior Insulated)
- M Low-slope Roof (Vented)
- N Low-slope Roof (Conventional)
- O Elevator Shaft Wall (Concrete)
- P Elevator Shaft Wall (Wood)

Interior Wood-framed Wall

Assembly Shown

- Two layers of gypsum with resilient channels
- Wood stud wall framing
- ROCKWOOL SAFE'n'SOUND®
- Gypsum

Acoustic Control
Fire Separation



Benefits of ROCKWOOL in the Assembly

Soundproofing and fire separation are important design considerations in mid-rise wood buildings. The illustrated assembly functions as both an acoustic control layer and as a fire-rated assembly. ROCKWOOL SAFE'n'SOUND® batt insulation is non-combustible and has superior sound absorption, which makes it an ideal product for this application.

Stone wool insulation limits noise transmission between rooms and is effective against low-frequency bass ranges, which contributes to a more comfortable occupant experience. SAFE'n'SOUND® paired with resilient channels, delivers sound absorption relief from the nuisance of impact noise caused by footsteps, door-slamming and furniture movement in adjacent units. The product also combats airborne noise such as music, speech, and car traffic, with a high-density, non-directional fiber structure that is engineered to fit snugly between studs in the interior wall assembly.

With respect to fire, ROCKWOOL non-combustible stone wool insulation materials can withstand intense heat up to 2150°F (1177°C), and will not promote the spread of flame or produce toxic smoke. This provides occupants with critical extra time to exit the building safely.

Alternate Assemblies

Note that various assemblies can achieve the desired UL/ULC fire rating and/or acoustic performance (STC) for this application. Refer to your local product representative and/or code official for further information.

Links - For More Information

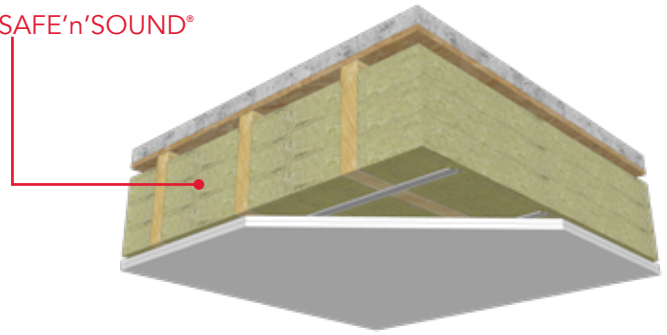
- SAFE'n'SOUND® Sell Sheet
- SAFE'n'SOUND® Technical Data Sheet
- Explore our DIY with ROCKWOOL YouTube series for easy to follow instructions and advice.

Interior Wood-framed Floor

Assembly Shown

- Concrete topping
- Sheathing
- I-Joist or dimensional lumber floor framing
- ROCKWOOL SAFE'n'SOUND® batt insulation in joist cavities
- (full joist depth for sprinkler omission)
- Two layers of gypsum with resilient channels

ROCKWOOL SAFE'n'SOUND®



Acoustic Control Fire Separation

Benefits of ROCKWOOL in the Assembly

Soundproofing and fire separation are important design considerations in mid-rise wood buildings. The illustrated assembly functions as both an acoustic control layer and as a fire-rated assembly. ROCKWOOL SAFE'n'SOUND® batt insulation is non-combustible and has superior sound absorption, which makes it an ideal product for this application.

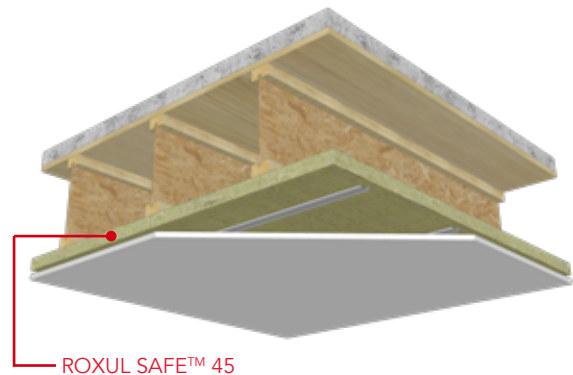
Stone wool insulation limits noise transmission between floors and is effective against low-frequency bass ranges, which contributes to a more comfortable occupant experience. SAFE'n'SOUND® paired with resilient channels, delivers sound absorption relief from the nuisance of impact noise caused by footsteps, door-slamming and furniture movement in adjacent units. The product also combats airborne noise such as music, speech, and car traffic, with a high-density, non-directional fiber structure that is engineered to fit snugly between floor joists in the interior floor assembly.

With respect to fire, ROCKWOOL non-combustible stone wool insulation materials can withstand intense heat up to 2150°F (1177°C), and will not promote the spread of flame or produce toxic smoke. This provides occupants with critical extra time to exit the building safely.

Filling the ceiling cavity space entirely with stone wool insulation (maximum 2" air space) is recognized as an exemption from the National Fire Protection Association NFPA 13. This allows sprinkler systems within ceiling cavities to be omitted, which can reduce building construction costs.

Alternate Assembly

- Concrete topping
- Sheathing
- I-Joist
- ROXUL SAFE™ 45 insulation attached to underside of joist
- One layers of gypsum with resilient channels



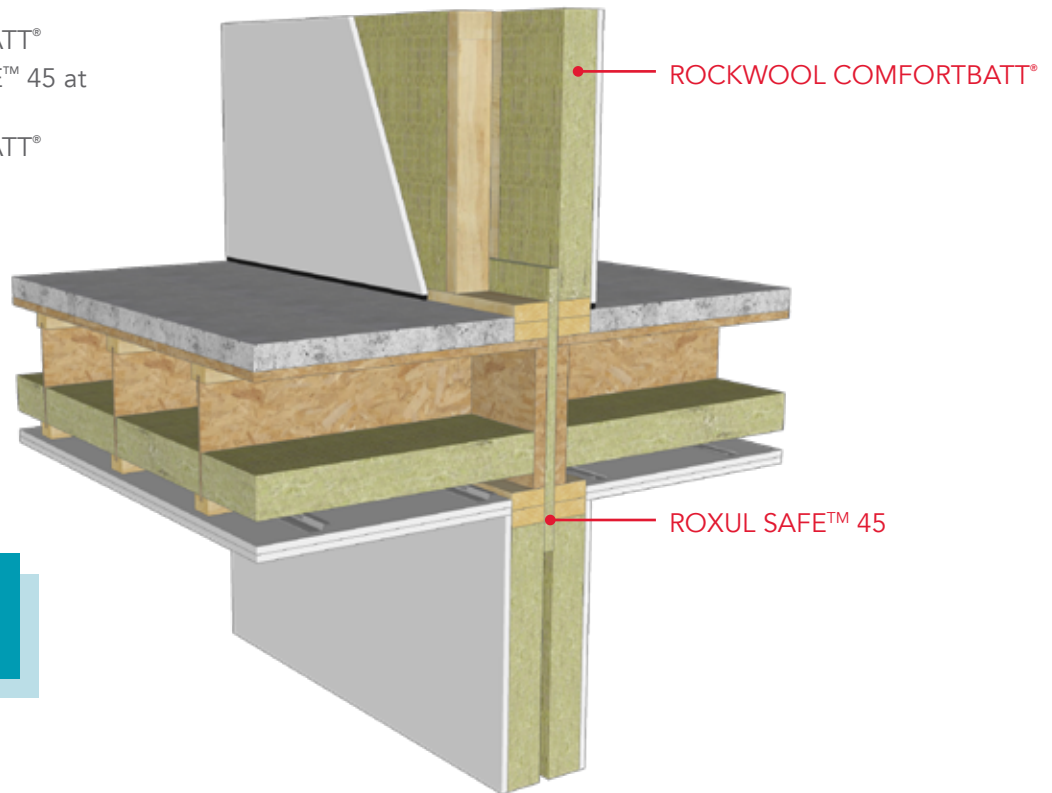
Links - For More Information

- SAFE'n'SOUND® Sell Sheet
- SAFE'n'SOUND® Technical Data Sheet
- ROXUL SAFE™ 45 Sell Sheet
- ROXUL SAFE™ 45 Technical Data Sheet
- Fiber Glass and Mineral Wool Insulation as an Alternative to Sprinkler Systems
- Explore our DIY with ROCKWOOL YouTube series for easy to follow instructions and advice.

Interior Wood-framed Party Wall

Assembly Shown

- Gypsum
- Wood stud wall framing
- ROCKWOOL COMFORTBATT®
- Air space with ROXUL SAFE™ 45 at floor level
- ROCKWOOL COMFORTBATT®
- Wood stud wall framing
- Gypsum



Acoustic Control
Fire Separation

Benefits of ROCKWOOL in the Assembly

Acoustic and fire separation is critical between units in a mid-rise wood-frame buildings. If adequate separation is not provided, occupant safety and comfort can become compromised. The ROCKWOOL party wall system provides quality fire and sound transmission resistance, and can reduce labor and material costs associated with isolating building units.

ROCKWOOL COMFORTBATT® stud cavity insulation will not change shape or sag over time, ensuring a snug fit between the studs. This reduces airflow through party walls, thereby decreasing sound transmission between units and common areas. Stone wool also limits transmission of low-frequency impact noise (bass ranges) as it is manufactured out of dense, multi-directional fibers that effectively absorb sound waves.

ROXUL SAFE™ 45 acts as a fire block between floors and units in combustible mid-rise buildings. As it is manufactured out of non-combustible stone wool, it will prevent the spread of smoke and fire. When used together, ROXUL SAFE™ 45 and COMFORTBATT® stud cavity insulation form a fire-rated assembly, isolating neighboring units in the case of fire. This can provide occupants with critical time to escape, even when the fire occurs in an adjacent unit.

Alternate Assemblies

Note that various assemblies can achieve the desired UL/ULC fire rating and/or acoustic performance (STC) for this application. Refer to your local product representative and/or code official for further information.

Links - For More Information

- ROXUL SAFE™ 45 Sell Sheet
- COMFORTBATT® Sell Sheet
- ROXUL SAFE™ 45 Technical Data Sheet
- COMFORTBATT® Technical Data Sheet (US) (Canada)
- Explore our DIY with ROCKWOOL YouTube series for easy to follow instructions and advice.

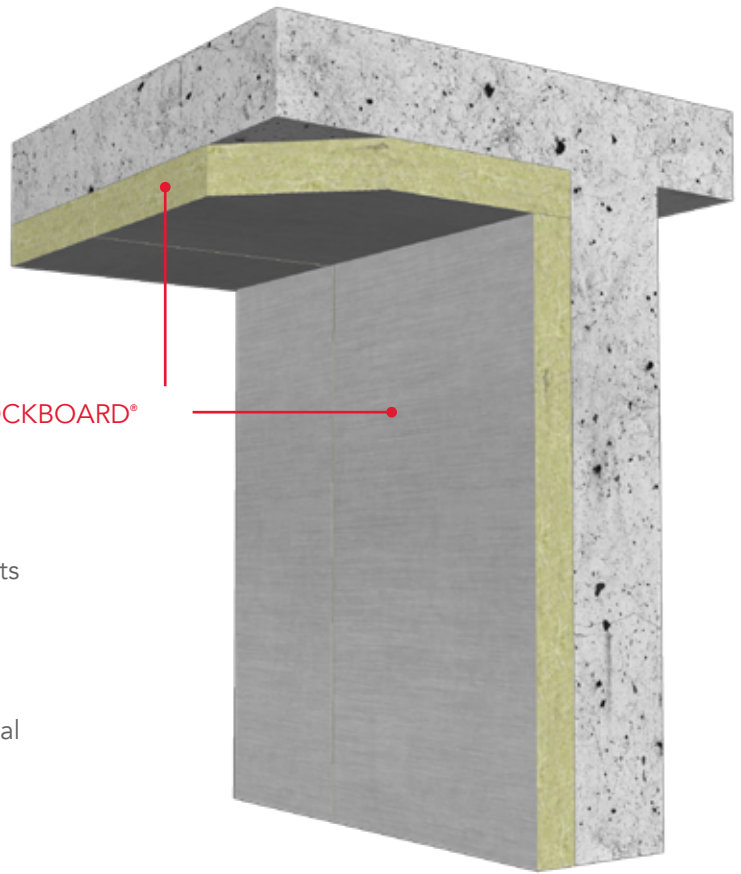
Mechanical Room

Assembly Shown

- Concrete walls and ceiling
- ROCKWOOL ROCKBOARD® with facing

Acoustic Control
Fire Separation
Moisture Resistance

ROCKWOOL ROCKBOARD®



Benefits of ROCKWOOL in the Assembly

Sound transmission is an important concern for occupants in mid-rise residential buildings. HVAC equipment in mechanical rooms can produce a significant amount of noise and should be acoustically isolated. The material properties of ROCKWOOL ROCKBOARD® insulation support high acoustic performance: the multi-dimensional orientation and density of stone wool fibers reduces sound transmission across a wide range of frequencies, making it an ideal solution for this application.

The stone wool boards can be modified with different facings in order to modify the properties of the insulation (e.g. permeability, light reflectance, fire performance, aesthetics) as needed for mechanical room requirements.

Gas lines and other components found in the mechanical room can be a major fire risk within the building. In the event of a fire, ROCKBOARD® insulation can add an additional degree of fire resistance around mechanical rooms as it will not combust and can reduce the spread of smoke and fire.

If pipes leak or hot water tanks fail, stone wool products will not rot, corrode or promote mold growth. This can significantly reduce the repair costs associated with HVAC equipment failure.

Links - For More Information

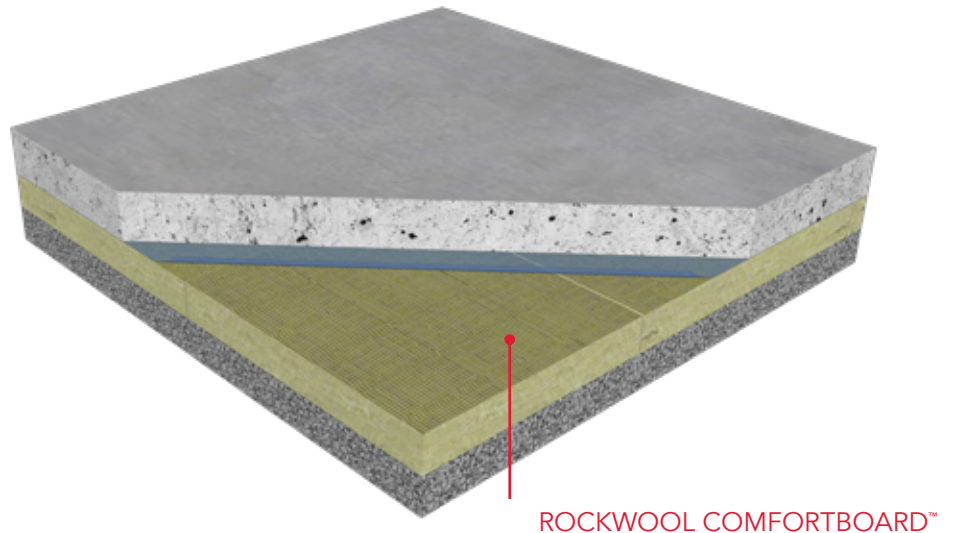
- [ROCKBOARD® Sell Sheet](#)
- [ROCKBOARD® Technical Data Sheet](#)
- [ROCKWOOL Fastener Guidelines](#)

Under Slab Insulation

Assembly Shown

- Concrete slab
- Polyethylene vapor barrier
- ROCKWOOL COMFORTBOARD™
- Crushed gravel

Energy Savings
Moisture Resistance
High Vapor Permeability
Thermal Comfort



Benefits of ROCKWOOL in the Assembly

As North American energy code requirements become more stringent, under slab insulation is key consideration for improving overall building energy performance. ROCKWOOL COMFORTBOARD™ insulation provides reliable thermal resistance in the foundation slab assembly that will not change over time. Stone wool insulation will maintain consistent thermal resistance, even when exposed to moisture—an important consideration for under slab insulation.

When exposed to ground moisture, COMFORTBOARD™ will resist water absorption, reducing the risk of moisture damage occurring within the building basement. Any moisture that bypasses the insulation (contacting the vapor barrier) can drain and dry out of the assembly as stone wool is porous and highly vapor permeable. Furthermore, as stone wool is inorganic, the under slab insulation will not rot, corrode, or support mold or fungal growth when wetted. This greatly improves the durability of the foundation slab assembly.

Concrete floor slabs can be cold and uncomfortable if not insulated adequately. COMFORTBOARD™ insulation ensures that the floor slab remains at a pleasant temperature, improving the thermal comfort of building occupants.

Links - For More Information

- COMFORTBOARD™ 80 Sell Sheet
- COMFORTBOARD™ 80 Technical Data Sheet
- COMFORTBOARD™ 110 Sell Sheet
- COMFORTBOARD™ 110 Technical Data Sheet
- Technical Bulletin: ROCKWOOL Under Slab Insulation

Interior-insulated Below-grade Wall

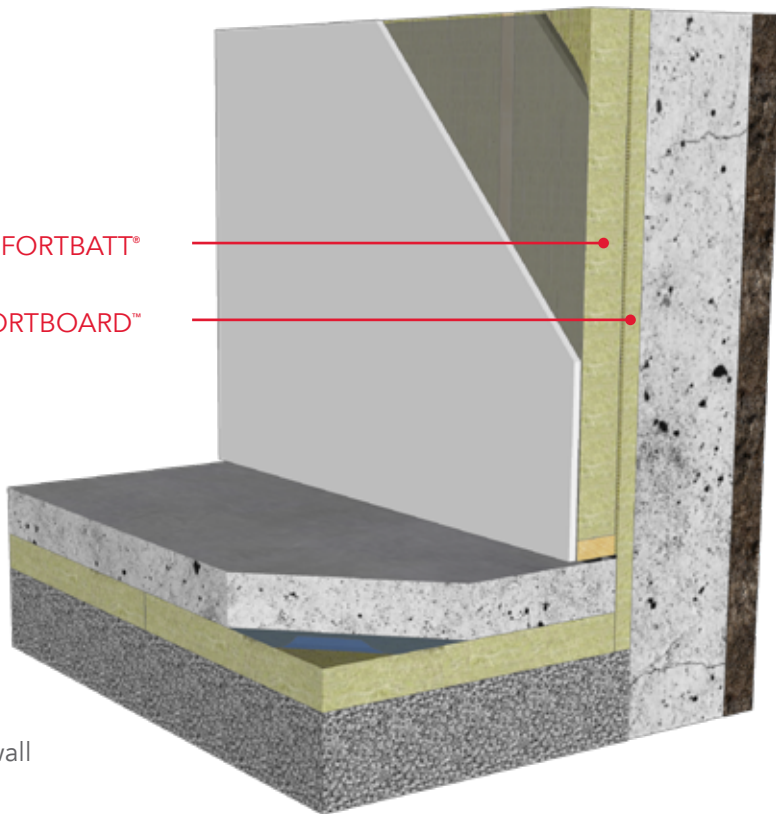
Assembly Shown

- Concrete foundation wall
- ROCKWOOL COMFORTBOARD™
- Wood stud wall framing
- ROCKWOOL COMFORTBATT®
- Smart vapor retarder
- Gypsum

Energy Savings
Moisture Resistance
High Vapor Permeability

ROCKWOOL COMFORTBATT®

ROCKWOOL COMFORTBOARD™



Benefits of ROCKWOOL in the Assembly

Basement insulation levels continue to increase as wall R-value requirements become more stringent. The ROCKWOOL basement insulation system combines ROCKWOOL COMFORTBOARD™ and ROCKWOOL COMFORTBATT® insulation products to meet the demands of more stringent energy codes. Installing continuous stone wool insulation adjacent to the foundation wall reduces thermal bridging in the assembly by separating the wood framing from the cold foundation wall. COMFORTBATT® insulation will not sag or shrink over time, which helps ensure consistent thermal performance of the assembly over time.

If any condensation or leakage occurs at the interior face of the foundation wall, the COMFORTBOARD™ insulation will keep moisture away from the stud framing. Moisture that accumulates can dry to the interior as stone wool is highly vapor permeable. Furthermore, as stone wool is inorganic, the insulation will not support or fungal growth when wetted. This greatly improves the durability of the basement wall assembly.

Links - For More Information

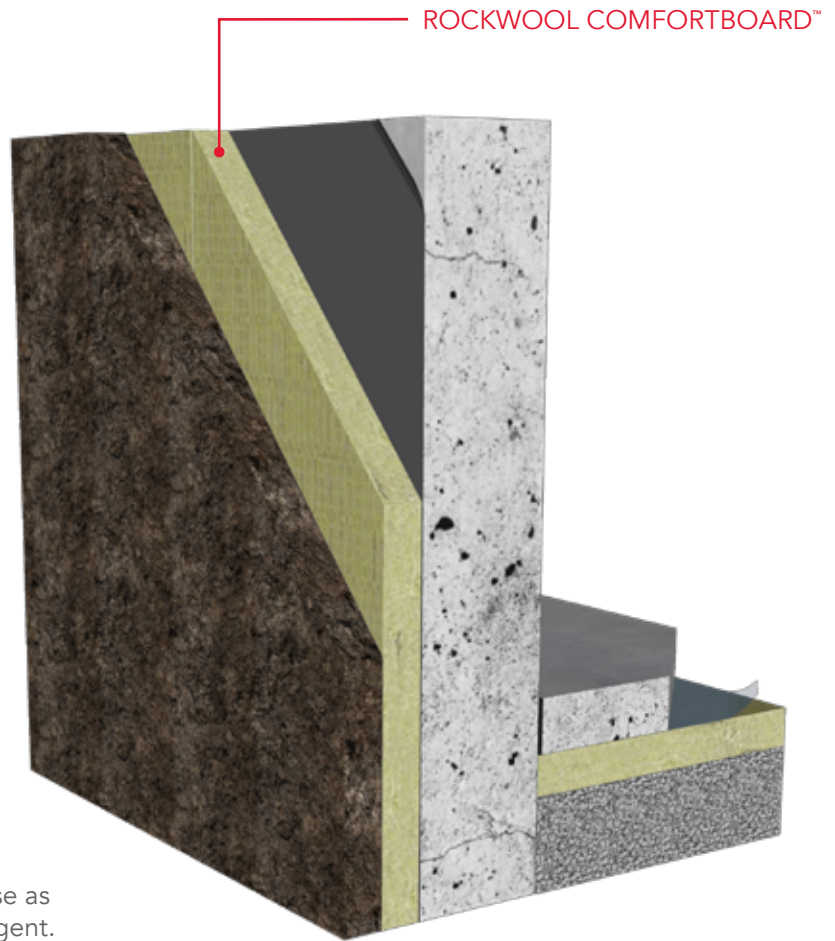
- COMFORTBOARD™ 80 Sell Sheet
- COMFORTBATT® Sell Sheet
- COMFORTBOARD™ 80 Technical Data Sheet
- COMFORTBATT® Technical Data Sheet (US) (Canada)
- Basement Application Sell Sheet
- ROCKWOOL Fastener Guidelines

Exterior-insulated Below-grade Wall

Assembly Shown

- Crushed gravel
- ROCKWOOL COMFORTBOARD™
- Below-grade waterproofing
- Concrete foundation wall
- Interior finishes

Energy Savings
Moisture Resistance
High Vapor Permeability



Benefits of ROCKWOOL in the Assembly

Basement insulation levels continue to increase as wall R-value requirements become more stringent. Installing continuous stone wool insulation adjacent to the foundation wall greatly improves the thermal performance of the basement.

ROCKWOOL COMFORTBOARD™ insulation will maintain consistent thermal resistance, even when exposed to moisture—an important consideration for exposed below-grade insulation.

When exposed to ground moisture, COMFORTBOARD™ will resist water absorption, reducing the risk of moisture penetrating the below-grade waterproofing. Bulk water that contacts the outer surface of the stone wool will largely drain away and not be absorbed into the insulation. In this way, the insulation acts similar to a drain composite, effectively acting as a cavity break. Furthermore, as stone wool is inorganic, COMFORTBOARD™ will not rot, corrode, or support mold and fungal growth when wetted. This greatly improves the durability of the basement wall assembly.

Links - For More Information

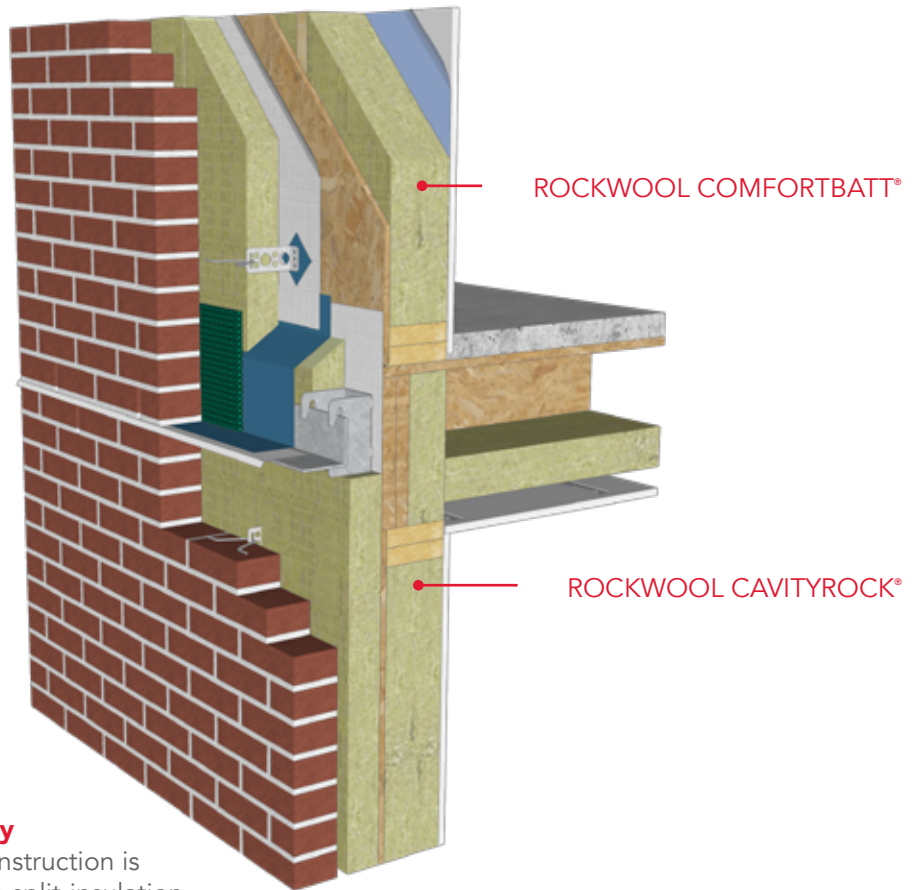
- COMFORTBOARD™ 80 Sell Sheet
- COMFORTBOARD™ 80 Technical Data Sheet
- COMFORTBOARD™ Applications Guide
- ROCKWOOL Fastener Guidelines

Exterior Wood-framed Wall

Assembly Shown

- Masonry cladding
- ROCKWOOL CAVITYROCK®
- Sheathing membrane
- Sheathing
- Wood stud wall framing
- ROCKWOOL COMFORTBATT®
- Polyethylene vapor barrier
- Gypsum

Energy Savings
Moisture Resistance
High Vapor Permeability
Fire Separation



Benefits of ROCKWOOL in the Assembly

Typically, the majority of mid-rise wood construction is composed of opaque wall assemblies. The split-insulation wall assembly with ROCKWOOL stone wool products is an example of an opaque wall assembly and provides excellent, long-term thermal resistance to meet the increasing demands of North American energy codes. ROCKWOOL CAVITYROCK® continuous insulation, reduces thermal bridging and greatly improves the overall thermal performance of the wall. Stud cavity insulation (ROCKWOOL COMFORTBATT®) further improves the wall thermal performance and will not sag or change shape over time.

When installed in a rainscreen assembly, stone wool insulation allows the wall assembly to "breathe". Incidental moisture is able to dry to the outside of the insulation and be removed as the insulation is highly vapor permeable. Moisture will not compromise the stone wool insulation as it is inorganic and will not decay or corrode in the presence of water.

Stone wool insulation will also limit the spread of smoke and fire and is non-combustible, providing critical time for occupants to escape.

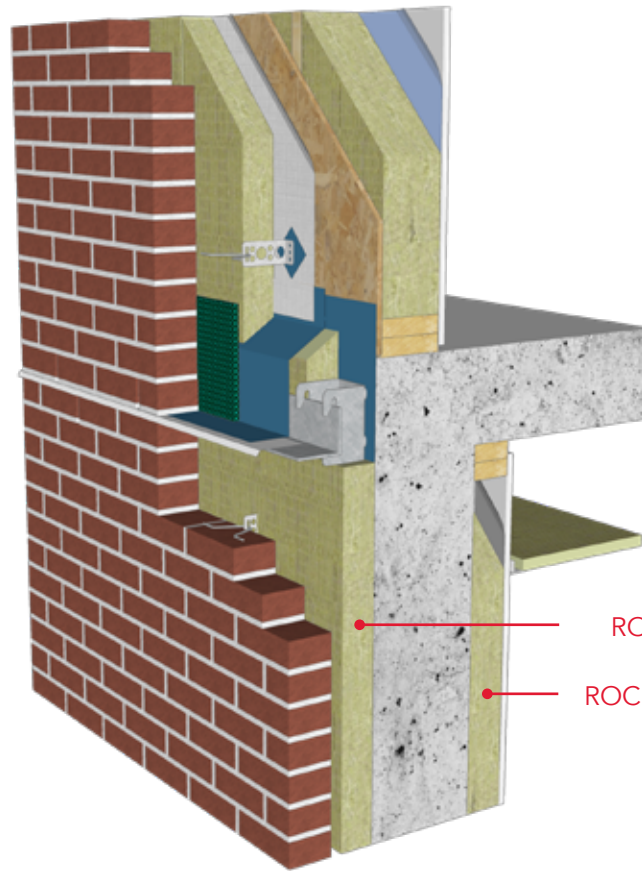
Links - For More Information

- CAVITYROCK® and COMFORTBATT® Brochure
- CAVITYROCK® Technical Data Sheet
- COMFORTBATT® Technical Data Sheet (US) (Canada)
- CAVITYROCK® Application Guide
- Cladding Attachment Solutions for Exterior Insulated Commercial Walls
- Vapor Diffusion Guide
- Technical Bulletin: Notes on Fire Protection of Exterior Walls in Reference to the National Building Code
- Technical Bulletin: CAVITYROCK® - Cavity and Rainscreen Wall Application
- ROCKWOOL Fastener Guidelines

Exterior Mass Wall

Assembly Shown

- Masonry cladding
- ROCKWOOL CAVITYROCK®
- Vapor permeable self-adhered membrane
- Concrete mass wall
- Air space
- Wood stud wall framing
- ROCKWOOL COMFORTBATT®
- Smart vapor retarder
- Gypsum



Energy Savings
Moisture Resistance
High Vapor Permeability
Fire Separation

Benefits of ROCKWOOL in the Assembly

Typically, the majority of mid-rise wood construction is composed of opaque wall assemblies. The split-insulation wall assembly with ROCKWOOL stone wool products is an example of an opaque wall assembly and provides excellent, long-term thermal resistance to meet the increasing demands of North American energy codes. ROCKWOOL CAVITYROCK® continuous insulation, reduces thermal bridging and greatly improves the overall thermal performance of the wall. Stud cavity insulation (ROCKWOOL COMFORTBATT®) further improves the wall thermal performance and will not sag or change shape over time.

When installed in a rainscreen assembly, stone wool insulation allows water vapor to travel through the wall assembly. Incidental moisture is able to dry to the outside of the insulation and be removed as the insulation is highly vapor permeable. Moisture will not compromise the stone wool insulation as it is inorganic and will not decay or corrode in the presence of water.

Stone wool insulation will also limit the spread of smoke and fire and is non-combustible, providing critical time for occupants to escape.

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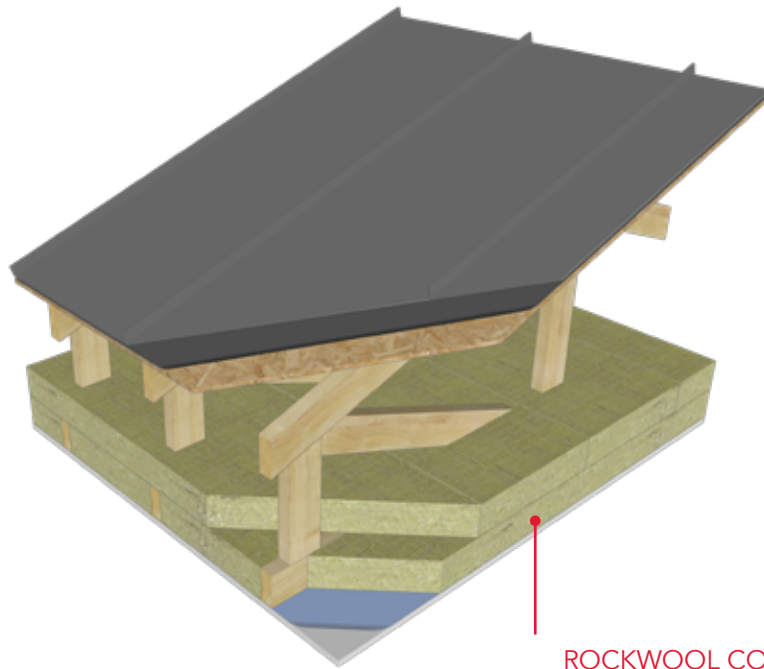
- CAVITYROCK® and COMFORTBATT® Brochures
- CAVITYROCK® Technical Data Sheet
- COMFORTBATT® Technical Data Sheet (US) (Canada)
- CAVITYROCK® Application Guide
- Cladding Attachment Solutions for Exterior Insulated Commercial Walls
- Vapor Diffusion Guide
- Technical Bulletin: Non-combustible Construction - A Guide to NFPA 285
- Technical Bulletin: CAVITYROCK® - Cavity and Rainscreen Wall Application
- ROCKWOOL Fastener Guidelines

Sloped Roof (Attic)

Assembly Shown

- Metal roofing
- Roof underlayment
- Sheathing
- Roof trusses
- ROCKWOOL COMFORTBATT®
- Ceiling joists
- Polyethylene air/vapor barrier
- Gypsum

Energy Savings
Moisture Resistance
High Vapor Permeability



ROCKWOOL COMFORTBATT®

Benefits of ROCKWOOL in the Assembly

Ventilated roof systems typically rely on batt insulation to provide adequate thermal resistance in the assembly. Providing additional attic insulation is an easy method of improving the overall energy performance of a building. However, not all batt insulations perform equally: ROCKWOOL COMFORTBATT® is a stone wool insulation that provides reliable thermal resistance over time and will not change shape when exposed to temperature changes or moisture, ensuring full coverage of the ceiling area, minimizing ceiling heat loss.

If moisture accumulates in the attic space, the insulation will not become a medium for mold or fungal growth. The stone wool batts are water repellent and any moisture that manages to penetrate the insulation will dry outwards as the batts are highly vapor permeable. These properties improve the overall durability of the roof assembly.

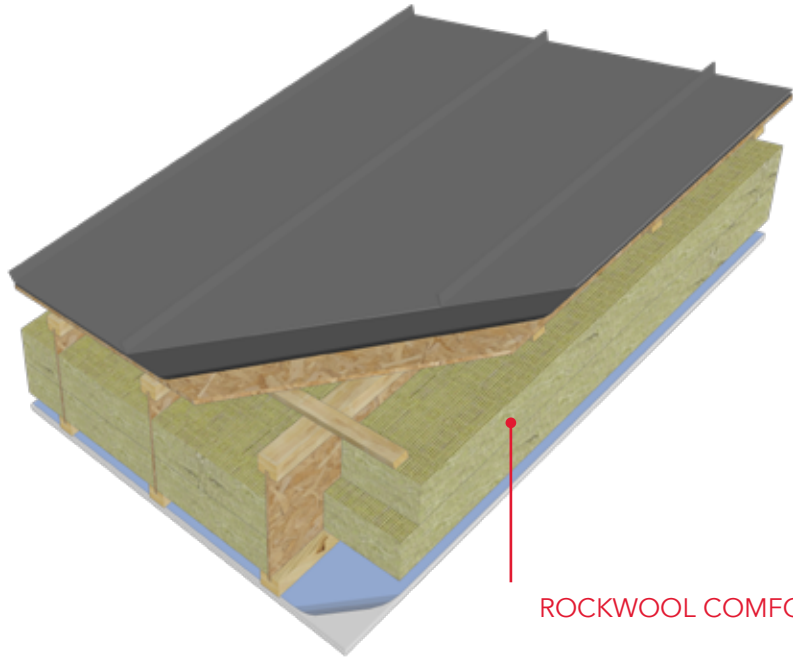
Links - For More Information

- COMFORTBATT® Sell Sheet
- COMFORTBATT® Technical Data Sheet (US) (Canada)
- Residential Thermal Application Guide (US) (Canada)
- Mid-Rise Wood Construction Builder's Guide

Sloped Roof (Cathedral Ceiling)

Assembly Shown

- Metal roofing
- Roof underlayment
- Sheathing
- Cross-strapping
- Roof joists
- ROCKWOOL COMFORTBATT®
- Polyethylene air/vapor barrier
- Gypsum



ROCKWOOL COMFORTBATT®

Energy Savings
Moisture Resistance
High Vapor Permeability

Benefits of ROCKWOOL in the Assembly

Ventilated roof systems typically rely on batt insulation to provide adequate thermal resistance in the assembly. Providing high quality insulation between cathedral ceiling roof joists is an easy method of improving the overall energy performance of a building.

However, not all batt insulations perform equally: ROCKWOOL COMFORTBATT® is a stone wool insulation that provides reliable thermal resistance over time. The insulation batts will not change shape or sag when exposed to temperature changes or moisture. This minimizes thermal bridging through the roof assembly and ensures reliable long-term energy savings.

If moisture accumulates in the cathedral ceiling, the insulation will not become a medium for mold or fungal growth. The stone wool batts are water-repellent and any moisture that manage to penetrate into the insulation will dry outwards, as the batts are highly vapor permeable. These properties improve the overall durability of the roof assembly.

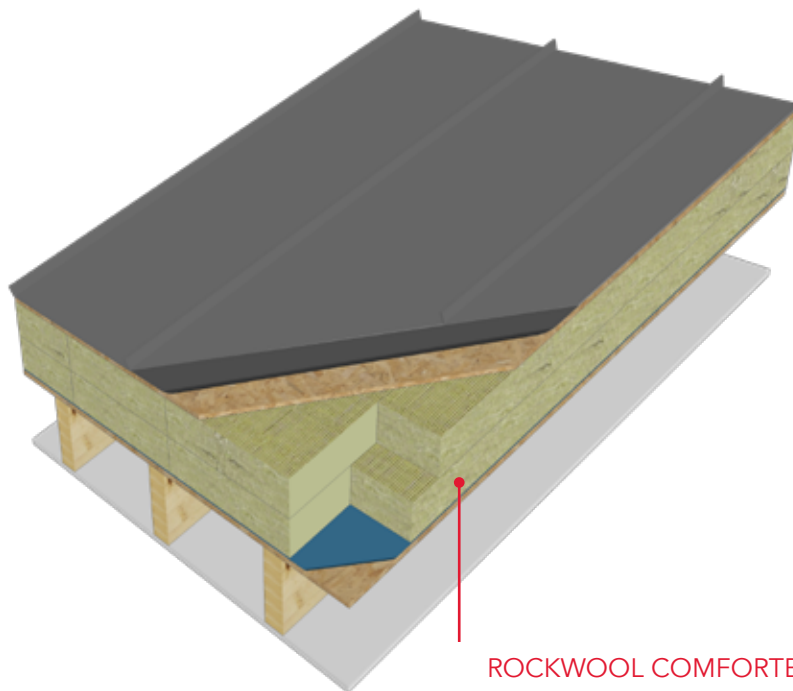
Links - For More Information

- COMFORTBATT® Sell Sheet
- COMFORTBATT® Technical Data Sheet (US) (Canada)
- Residential Thermal Application Guide (US) (Canada)
- Mid-Rise Wood Construction Builder's Guide

Sloped Roof (Exterior-insulated)

Assembly Shown

- Metal roofing
- Roof underlayment
- Sheathing
- ROCKWOOL COMFORTBOARD™
- Self-adhered membrane air/vapor barrier
- Sheathing
- Roof joists
- Gypsum



ROCKWOOL COMFORTBOARD™

Energy Savings
Moisture Resistance
High Vapor Permeability

Benefits of ROCKWOOL in the Assembly

Thermal resistance in exterior-insulated roof systems is provided by rigid board insulation. By installing insulation outboard of the roof framing, thermal bridging is reduced through the assembly. While several types of board insulation can be installed in this configuration, ROCKWOOL COMFORTBOARD™ stone wool is dimensionally stable, providing reliable thermal resistance over time. The insulation boards will not change shape when exposed to temperature changes or moisture, ensuring reliable long-term energy savings.

In this configuration, COMFORTBOARD™ increases the temperature of the sheathing and framing, reducing the potential for condensation and associated damage. If the insulation boards are wetted, they will not become a medium for mold or fungal growth. The insulation boards are water repellent and any moisture that manages to penetrate into the insulation will dry outwards, as the batts are highly vapor permeable. These properties improve the overall durability of the roof assembly.

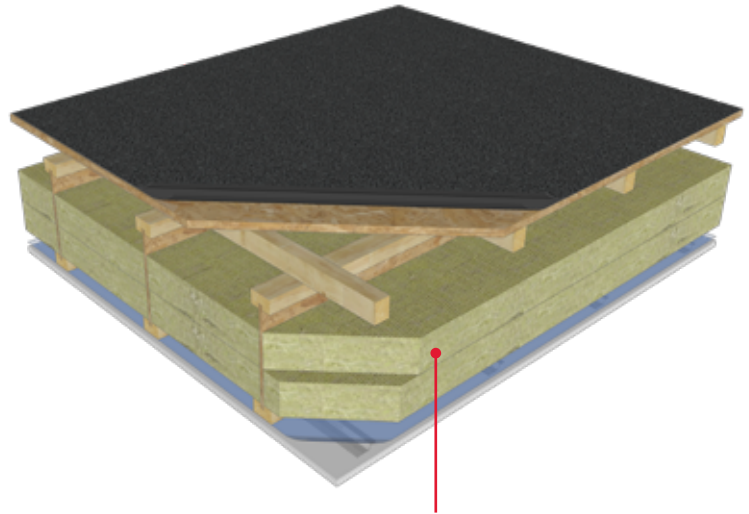
Links - For More Information

- COMFORTBOARD™ 80 Sell Sheet
- COMFORTBOARD™ 80 Technical Data Sheet
- COMFORTBOARD™ 110 Sell Sheet
- COMFORTBOARD™ 110 Technical Data Sheet
- Mid-Rise Wood Construction Builder's Guide

Low-slope Roof (Vented)

Assembly Shown

- Roofing membrane
- Protection board and sheathing
- Purlins
- I-Joist floor framing
- ROCKWOOL COMFORTBATT®
- Polyethylene air/vapor barrier
- Gypsum with resilient channels



ROCKWOOL COMFORTBATT®

Energy Savings
Moisture Resistance
High Vapor Permeability
Fire Separation
Acoustic Control

Benefits of ROCKWOOL in the Assembly

Vented low-slope roofs are common in mid-rise wood construction. They often function as exterior walkways or terraces for building occupants. The vented low-slope roof system is a high-risk assembly as moisture often penetrates into the floor joist cavity. ROCKWOOL COMFORTBATT® insulation is the ideal batt insulation for this system as it will maintain consistent thermal performance even in the presence of moisture. This ensures the building energy savings will be maintained over the long term.

If moisture accumulates in the ceiling cavity, the insulation will not become a medium for mold or fungal growth. The stone wool batts are water-repellent and any moisture that manage to penetrate into the insulation will dry outwards as the batts are highly vapor permeable. These properties improve the overall durability of the roof assembly.

Stone wool can be used as a component in fire-rated roof assemblies as it non-combustible and will not promote the spread of smoke or fire, providing crucial extra time for occupants to evacuate in the case of fire.

Alternate Assemblies

Note that various assemblies can achieve the desired UL/ULC fire rating and/or acoustic performance (STC) for this application. Refer to your local product representative and/or code official for further information.

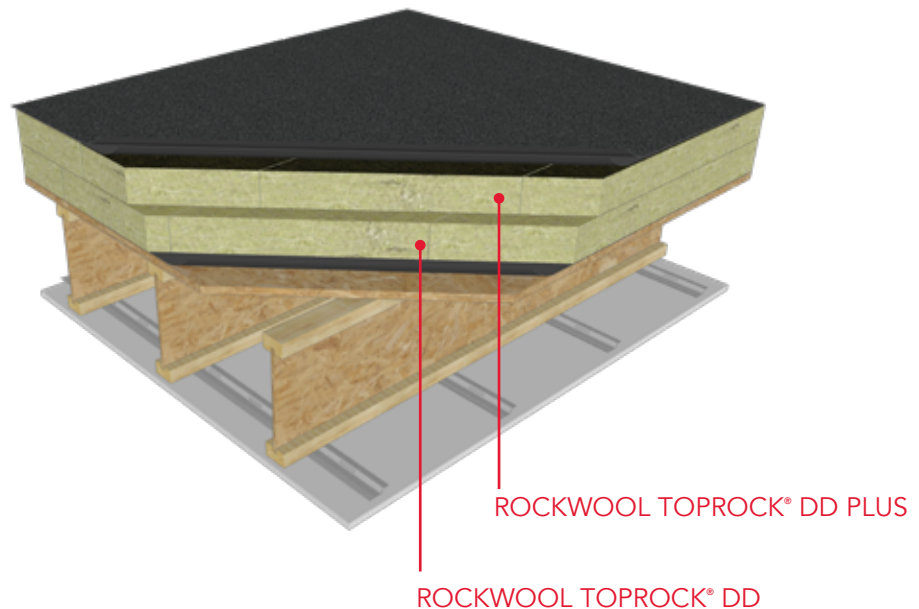
Links - For More Information

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- COMFORTBATT® Technical Data Sheet (US) (Canada)
- Residential Thermal Application Guide (US) (Canada)
- Mid-Rise Wood Construction Builder's Guide

Low-slope Roof (Conventional)

Assembly Shown

- Roofing membrane
- ROCKWOOL TOPROCK® DD PLUS
- ROCKWOOL TOPROCK® DD
- Sheathing with vapor barrier
- I-Joist floor framing
- Gypsum with resilient channels"



Energy Savings
Moisture Resistance
High Vapor Permeability
Fire Separation
Acoustic Control

Benefits of ROCKWOOL in the Assembly

Low-slope roofs are common in mid-rise wood construction. They often function as exterior walkways or terraces for building occupants. Stone wool insulation installed in a conventional roof assembly provides excellent long-term thermal performance for the roof system as it will not change shape over time. This also minimizes potential stresses on the roofing membrane. ROCKWOOL TOPROCK® DD provides reliable thermal resistance across a range of temperatures ensuring consistent building energy savings. TOPROCK® DD PLUS also includes an asphaltic facing eliminating the need for a protection board when applying torch-on or hot-applied roofing membranes.

The conventional assembly is resistant to moisture as TOPROCK® DD has a high drying potential as stone wool is highly vapor permeable.

Stone wool insulation can be used as a component in fire-rated roof assemblies as it non-combustible and will not promote the spread of smoke or fire, providing crucial extra time in the case of fire. The fire-resistant properties of stone wool also provide excellent protection when torch-on or hot-applied roofing membranes are installed.

The dense, non-directional fiber structure of TOPROCK® DD also reduce sound transmission. This minimizes the transmission of airborne and impact noise into the units below, improving occupant comfort.

Alternate Assemblies

Note that various assemblies can achieve the desired UL/ULC fire rating and/or acoustic performance (STC) for this application. Refer to your local product representative and/or code official for further information.

Links - For More Information

- Commerical Roofing Brochure
- TOPROCK® DD Technical Data Sheet
- TOPROCK® DD PLUS Technical Data Sheet
- Mid-Rise Wood Construction Builder's Guide
- Technical Bulletin: Stone Wool Delivers Stable R-values at Extreme Temperatures
- Technical Bulletin: Moisture Management Properties of ROCKWOOL TOPROCK® DD Roof Insulation

Elevator Shaft Wall (Concrete & Wood)

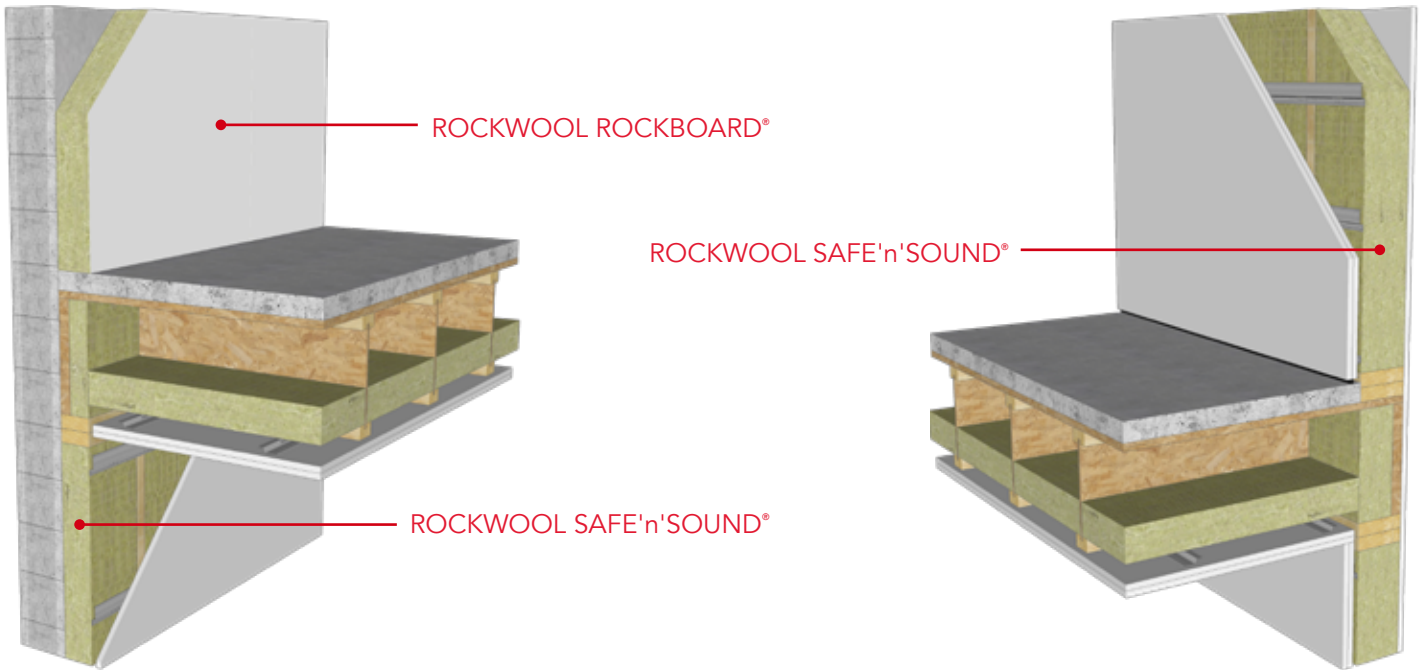
Concrete Assembly Shown

- ROCKWOOL ROCKBOARD® with facing
- Concrete block wall
- OR Two layers gypsum with resilient channels
- Wood stud wall framing
- ROCKWOOL SAFE'n'SOUND®
- Concrete block wall

Fire Separation Acoustic Control

Wood Assembly Shown

- Two layers gypsum with resilient channels
- Wood stud wall framing
- ROCKWOOL SAFE'n'SOUND®
- Gypsum



Benefits of ROCKWOOL in the Assembly

Sound transmission is an important concern for occupants in mid-rise residential buildings. Elevator shafts can produce a significant amount of noise and should be acoustically isolated. The material properties of ROCKWOOL ROCKBOARD® and SAFE'n'SOUND® insulation support high acoustic performance: the multi-dimensional orientation and density of stone wool fibers reduces sound transmission across a wide range of frequencies, making it an ideal solution for this application.

Elevators and associated components can lead to electrical fire risk within the building. In the event of a fire, stone wool insulation can add an additional layer of fire resistance around the elevator shaft as it is non-combustible and does not promote the spread of smoke and fire.

Alternate Assemblies

Note that various assemblies can achieve the desired UL/ULC fire rating and acoustic performance (STC) for this application. Refer to your local production representative and/or code official for further information.

Links - For More Information

- ROCKBOARD® Sell Sheet
- SAFE'n'SOUND® Sell Sheet
- ROCKBOARD® Technical Data Sheet
- SAFE'n'SOUND® Technical Data Sheet
- ROCKWOOL Fastener Guidelines

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 approx. 10,500 passionate colleagues in 38 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 & offshore.

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