SECTION 09 81 00

ACOUSTIC INSULATION

PART 1 – GENERAL

1.1 PURPOSE

A. This guideline is intended to provide useful information to the Professional Service Provider (PSP) to establish a basis of design. PSP is to apply the principles of this section such that the University of Texas at Arlington (UTA) may achieve a level of quality and consistency in the design and construction of their facilities. Deviations from these guidelines must be approved by UTA and may require justification through Life Cycle Cost (LCC) analysis and submitted to UTA for approval.

1.2 LESSONS LEARNED AND DESIGN CONSIDERATIONS

A. Install for sound attenuation interior walls, above toilet room ceilings, and over suspended ceilings where indicated, without gaps or voids.

B. Friction-fit blanket insulation in place, until the interior finish is applied. Install batts to fill entire stud cavity, with no gaps, voids, or areas of compression. If stud cavity is less than 8 feet in height, cut lengths to friction-fit against floor and ceiling tracks. Walls with penetrations require that insulation be carefully cut to fit around outlets, junction boxes, and other irregularities.

C. Where walls are not finished on both sides or where insulation does not fill the cavity depth, install supplementary support to hold product in place.

D. Where insulation must extend higher than 8 feet, provide temporary support to hold product in place, until finish material is applied.

1.3 SECTION INCLUDES

A. Acoustic insulation in batt form.

1.4 SUBMITTALS

A. See Division 01 for submittal procedures.

B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency for insulation products.

1.5 REFERENCE STANDARDS

A. ASTM C423 - Test Method for SOUND Absorption Coefficient by the Reverberation Room Method.

B. ASTM C518 – Test Method for Steady State Thermal Transmission Properties by Means of the Heat Flow Meter.

C. ASTM C665 - Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

D. ASTM E36 - Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C.

E. ASTM E84 - Test Method for Surface Burning Characteristics of Building Materials.

F. ASTM E119 - Test Methods for Fire Tests of Building Construction and Materials.

1.6 QUALITY ASSURANCE

A. Fire Performance Characteristics: Provide insulation materials identical to those whose indicated fire performance characteristics have been determined per the ASTM test method indicated below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing and inspecting organization.

1. Surface Burning Characteristic: ASTM E84.
2. Fire Resistance Ratings: ASTM E119.
3. Combustion Characteristics: ASTM E136.

B. Single-Source Responsibility for Insulation Products: Obtain each type of building insulation from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's recommendations for handling, storage, and protection during installation.

PART 2 – PRODUCTS

2.1 GENERAL

A. This product section is intended to inform the PSP on the minimum standard of quality that should be incorporated in new designs. The PSP should evaluate these standards and incorporate or make additional requirements per project specific requirements. Where the PSP considers any requirement listed not to be applicable or incompatible with the project design intent should be discussed with UTA Office of Facilities Management.

2.2 MINERAL FIBER INSULATING MATERIALS

A. Preformed Units: Sizes to fit applications indicated, selected from manufacturer’s standard thicknesses, widths, and lengths.

B. Insulation for Sound Attenuation: ASTM C665; “Sound Attenuation Batts”; Type I preformed glass fiber batts conforming to the following:

1. Batt Width: Maximum width as required for application.
2. Thickness: 3-5/8 inches.
3. Facing: Unfaced.
4. Flame Spread Rating: Less than 25, as tested in accordance with ASTM E84.
5. Smoke Developed: Less than 50, as tested in accordance with ASTM E84.
6. Overall Sound Transmission: STC 50.
7. Minimum Density of 6.0 lb/cu ft. (96 kg/cu m), thermal resistivity of 4.5°F x h x sq ft/Btu x in. at 75°F (31.2 K x m?W at 24°C).
8. Manufacturers:
   a. Owens Corning; Sound Attenuation Batts: www.owenscorning.com.
   b. Owens Corning; QuietZone: www.owenscorning.com.
   c. ROXUL, Inc; Rockwool Sound Insulation. www.roxul.com.
   d. ROXUL, Inc; Rockwool AFB Acoustical Fire Batt Insulation. www.roxul.com.
   e. Substitutions: See Division 01.

2.3 ACCESSORIES

A. Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation or mechanical anchors securely to substrates indicated without damaging or corroding insulation, anchors, or substrates.

B. Acoustical Sealants.

C. Staples: Steel wire; type and size to suit application.

D. Tape: Mesh reinforced, self-adhering type, 2-inch wide.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions with Installer present, for compliance with requirements of the Sections in which substrates and related work are specified and to determine if other conditions affecting performance of insulation are satisfactory.

B. Verify that substrate, adjacent materials, and insulation are dry and ready to receive insulation.

C. Verify mechanical and electrical services within walls have been installed and tested.

D. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install insulation in accordance with manufacturer's instructions.

B. Install in exterior wall spaces without gaps or voids. Do not compress insulation.

C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.3 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.
B. Provide temporary coverings or enclosures where insulation will be subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

PART 4 – APPENDIX

4.1 PRODUCT DATA / CUT SHEETS

A. Owens Corning; Sound Attenuation Batts
B. Owens Corning; QuietZone
C. ROXUL, Inc; Rockwool Sound Insulation
D. ROXUL, Inc; Rockwool AFB Acoustical Fire Batt Insulation

END OF SECTION

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Sound Attenuation Batt Insulation

Product Data Sheet

Description

Sound Attenuation Batts (SAB's) are unfaced, lightweight, flexible fiberglass insulation batts, designed to deliver noise control in metal stud wall cavities of interior partitions. Manufactured to fit metal framing, they come in 2½", 3½" and 5½" thicknesses, with lengths up to 9'.

Product Attributes

Excellent Acoustical Performance

Sound Attenuation Batts provide excellent acoustical performance for metal framed interior partitions. Depending on the construction method and components used, SAB's can improve STC (Sound Transmission Class) ratings by 4-10 points over an empty cavity.

Easy to Install and Fabricate

Sound Attenuation Batts are ⅛" wider than stud spacing for easy friction-fit installation. No adhesives or fasteners are required. Supplementary support should be provided when the SAB's do not fill the cavity or if one side of the cavity is left open and the partition is 8' or higher. SAB's are easily cut to fit around wires, outlets, junction boxes, pipes and other obstructions. Friction fit installation and easy fabrication, improves installation speed and workmanship. Acoustic performance of a wall assembly can be affected by workmanship and attention to detail while constructing a wall. Data on acoustic performance of specific wall assemblies is available on page 2.

Acoustic Comparison of Cavity Insulation Types

Gypsum Board	Insulation Type	Test Number	STC
One layer each side.			
⅝"	None	TL-92-618	38
⅝"	Glass fiber	TL-93-325	49
⅝"	Mineral fiber	TL-93-327	47
⅝"	Cellulose (spray)	TL-93-049	45
One layer one side, two layers the other side			
⅝"	Glass fiber	TL-92-420	52
⅝"	Mineral fiber	TL-93-329	53
⅝"	Cellulose (spray)	TL-93-050	49
⅝"	Cellulose (blown)	TL-92-437	49

3⅝" 25 Gauge Non Load Bearing Studs at 16" on center NRC-CNRC Internal Report IRC-IR-693, October 1995

Available Sizes

Thickness	Width	Length
2½"	16"/24" (406mm/609mm)	96"
2½"	16" (406mm)	108"
3½"	16"/24" (406mm/609mm)	96"
3½"	16" (406mm)	108"
5½"	16" (406mm)	93"

Reality of Sound Transmission Class (STC).

STC is a method of rating airborne sound transmission performance of a wall or floor assembly. It is intended as a quick screening tool to compare different wall or floor assemblies. STC ratings are determined in a laboratory under controlled conditions. Even then, differences of 1-2 points STC can occur for the same assembly in the same laboratory. In the field, flanking noise, quality of material and construction practices can lead to widely varied STC's for the same assembly. Typically a two (2) or more point change in STC is necessary to notice an audible difference.

Product Comparison

Independent ASTM E90-1990 testing was used to determine Sound Transmission Class in accordance with ASTM E413 for several types of building insulation. All the testing was done at the same lab, using the same individually tested components, to give the most reproducible results. The results show that insulating the cavity is critical to acoustic performance. It also shows that the type of insulation does not significantly affect the performance of the assembly.

Design Considerations

Acoustical performance of metal stud interior partitions can be substantially affected by a number of important design and construction details. Important details include:

1. Seal the bottom plate and any wall penetrations with non-hardening permanently resilient sealant.

Product Data Sheet

2. Location and attachment of outlets, ducts and mechanical equipment. Plumbing should be designed to allow for expansion and contraction. Pipes should also be isolated from structure using resilient mounts.

3. Use solid core wood or metal doors for best noise control. Depending on HVAC requirements, weather-stripping may be used around the door to reduce sound transmission.

Fire Safety

Sound Attenuation Batts are considered non-combustible and have are classified 10/10 when tested in accordance with ASTM E84. When installed in approved wall systems, SAB's can achieve up to a 2 hour rating when tested according to ASTM E119.

Special

Due to the potential for skin irritation Sound Attenuation Batts should not be used in open cavities that will be subject to human contact. If specifying for an open cavity, remember to use supplemental support for heights over 8'.

Product should be kept dry during shipping, storage and installation.

Applicable Standards

Sound Attenuation Batt Insulation complies with ASTM C665 Type I, ASTM E 136 and the MEA 332-83-m requirements of New York City. Federal Specification HH-I-521F has been canceled and is replaced by ASTM C665.

Surface Burning Characteristics/Building Code Construction Classification[1]

Products	Flame Spread	Smoke Developed	ICBO	BOCA	SBCCI	ICC
Unfaced	10	10	All Types	All Types	All Types	All Types

[1]Sound Attenuation Batt Insulation complies with ICBO (Uniform Building Code), BOCA (National Building Code) and SBCCI (Standard Building Code) and ICC (International Building Code) model code requirements for building costruction types listed above. Products are tested in accordance with Surface Burning Characteristics ASTM E 84.

Water Absorption	
Maximum by Volume	Less than 0.05%

Dimensional Stability	
Linear Shrinkage	Less than 0.1%

Acoustic and Fire Ratings for Typical Steel Stud Partitions

STC	Test No.	Construction Description	Fire Test	Fire Rating
Double Layer Wall System				
56	W02184	½" Type "X" gypsum; 3⅝" SS, 3½" thick, Sound Attenuation Batt Insulation	WP 1521†	2 Hr.
54	W03084	½" Type "X" gypsum; 2½" SS, 2 ½" thick, Sound Attenuation Batt Insulation	WP 1546	2 Hr.
Unbalanced Wall System (2 layer/1 layer gypsum)				
55	W02484	Unbalanced ⅝" Type "X" gypsum; 3⅝" SS, 3½" thick, Sound Attenuation Batt Insulation	WP 1052	1 Hr.
52	W02884	Unbalanced ⅝" Type "X" gypsum; 2½" SS, 2½" thick, Sound Attenuation Batt Insulation	UL U494	1 Hr.*
Unbalanced with Resilient Channel Wall System				
58	RAL-TL90-345	⅝" Type "X" gypsum single layer, resilient channel, one side; double layer other side; 3⅝" SS, 3½" thick, Sound Attenuation Batt Insulation	UL U465	1 Hr.*
Single Layer Wall System				
51	RAL-TL89-288	Single Layer ⅝" Type "X" gypsum; 6" SS, 5½" thick, Sound Attenuation Batt Insulation		1 Hr.
50	RAL-TL89-157	Single Layer ⅝" Type "X" gypsum; 3⅝" SS, 3½" thick, Sound Attenuation Batt Insulation	UL U465	1 Hr.
47	W05182	Single Layer ⅝" Type "X" gypsum; 2½" SS, 2½" thick, Sound Attenuation Batt Insulation	UL U494	1 Hr.
Single Layer with Resilient Channel Wall System				
54	RAL-TL90-344	Single layer, resilient channel, one side only; ⅝" Type "X" gypsum; 3⅝" SS, 3½" thick, Sound Attenuation Batt Insulation	UL U465	1 Hr.*

†Listed in the Gypsum Association "Fire Resistance Design Manual"
Key: SS = Steel Stud

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OWENS CORNING®
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QuietZone®
Acoustic Batts

Product Data Sheet

Owens Corning *QuietZone* acoustic batts are an essential part of controlling noise transmission between rooms. The *QuietZone* acoustic batt actually absorbs sound vibrations within the wall cavity to control noise in the home.

QuietZone acoustic batts help reduce noise transmission coming from laundry rooms, entertainment rooms, family rooms and any other area where noise is created. It can also be used to create privacy in home offices, master bedrooms or other areas where peace and quiet is desired.

Excellent Acoustical Performance

QuietZone acoustic batts provide excellent in-place acoustical performance. Depending on the construction method used, *QuietZone* acoustic batts can improve Sound Transmission Class ratings by 4 to 10 dBs. Installation advantages can help a contractor achieve the acoustical performance desired. The STC performance data for various wall constructions can be found on pages 3 and 4.

Durable Composition

QuietZone acoustic batts:

- Are dimensionally stable.
- Will not slump over time.
- Are composed of inorganic glass fibers which do not absorb water.
- Maintain original acoustic properties over time.
- Will not rot or mildew.

Product Benefits:

- Differentiate the homes you build with increased performance.
- Increase sales by offering unique up-sell options.
- Provide homeowners with quieter, more peaceful living conditions.
- Enhance your image by positioning yourself as an acoustic solutions expert.
- Save homeowners time and money by suggesting noise control prior to new home construction compared to retrofitting at a later date.

Product Attributes

QuietZone acoustic batts are:

- Acoustically engineered to absorb sound vibrations.
- Installed between interior walls, floors, and ceilings when constructed of standard wood framing members.
- Lightweight and pre-cut to 93" or 105" lengths for quick installation and easy transportation.
- Faced batts are easily identified by attractive, PINK-kraft facing featuring large images of the PINK PANTHER™.
- Easily stapled and cleanly fabricated to allow for improved workmanship and acoustical performance.
- Compliant with building codes and standards.

Product Installation

QuietZone acoustic batts are designed for interior cavities only and are not recommended for exterior walls. The facing on this product is provided for ease of installation and is not a vapor retarder.

- Insulation must fit snugly into place, filling the cavity completely.
- Staple batts along kraft flanges to the inside of the wall framing.
- In cases where wall penetrations apply, cut with a utility knife to fit around wiring, outlets, junction boxes, pipes and other obstructions.
- For desired performance, keep batts dry during shipping, storage and installation.
- *QuietZone* acoustic batts may be installed with the facing toward either side of interior walls, floors, or ceilings in conventional wood stud construction.

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QuietZone®
Acoustic Batts

Product Data Sheet

- *QuietZone* acoustic batts (15" or 23" width) will be required in the cavity space between wall framing sections spaced either 16" or 24" o.c.
- Owens Corning *QuietZone* acoustic batts will be required to fill the cavity space between wall framing sections spaced either 16" or 24" o.c. when using 2x6 *QuietZone* acoustic wall framing.

Technical Data

Wood Frame Construction

Width		Length		Thickness		Pieces Per Package	Sq. Ft./m²	Linear Ft./m
Faced Batts								
15"	381mm	93"	2362mm	3½"	89mm	16	155/14.40	124/37.8
15"	381mm	105"	2664mm	3½"	89mm	16	175/16.26	140/42.7
15½"	394mm	93"	2362mm	5½"	139mm	10	101/9.38	78/23.8
23"	584mm	93"	2362mm	3½"	89mm	16	238/22.11	124/37.8
15"	381mm	105"	2664mm	3½"	89mm	1 (Roll)	88/8.18	70/21.3
Unfaced Batts								
15¼"	387mm	93"	2362mm	3½"	89mm	16	155/14.40	124/37.8
15 ¼"	387mm	105"	2664mm	3½"	89mm	16	178/16.54	140/42.7
23 ¼"	591mm	93"	2362mm	3½"	89mm	16	241/22.39	124/37.8

QuietZone acoustic batts comply with the requirements of the Uniform Building Code (ICBO) building types III, IV, and V; National Building Code (BOCAI) building types 3, 4, and 5; and Standard Building Code (SBCCI) building types III, V, VI.

Dimensional Stability	
Linear Shrinkage	Less than 0.1%

Water Absorption	
Max. by Volume	Less than 0.05%

Product Applications

QuietZone Quiet Foundations™ Noise Control System

Using single 2x4 wood studs (16" o.c.), *QuietZone* acoustic batts, and ½" Type X gypsum board provides basic noise control between adjoining rooms. *QuietZone* acoustic batts can improve conventional wood stud walls to a Sound Transmission Class (STC) rating of 39.

QuietZone Quiet Retreats™ Studs, Batts, Caulk and Mat

Using *QuietZone* acoustic framing on 24" centers, 2x6 *QuietZone* acoustic wall studs, double layers 5⁄8" Type X gypsum drywall each side, 5½ *QuietZone* acoustic batts. In this assembly wall performance improves to an STC rating of 63.

Technical Design Considerations

Acoustical performance of interior drywall partitions can be substantially improved by including a number of important design and construction details.

Important details include sealing the perimeter of walls, wall intersection construction details, and the location and proper installation of electrical outlets, ducts, doors and mechanical equipment.

Perimeter Sealing

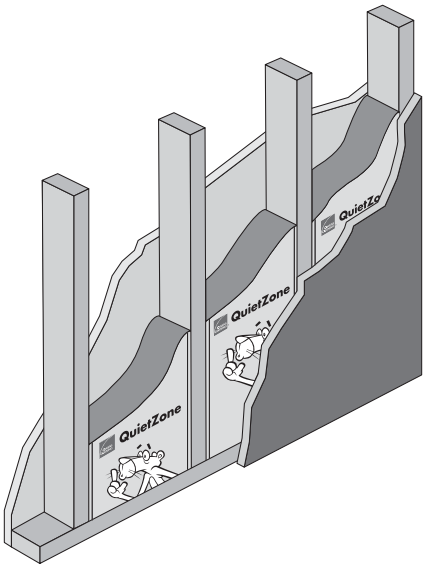
Seal walls on both sides at top and bottom plates with a non-hardening, permanently resilient caulking such as a butyl rubber-base compound. Where required, two layers of wallboard, properly staggered, joint compound and tape will effectively seal corners.

Doors

Where optimum acoustical control is desired, solid wood core doors or insulated metal doors should be specified. Door tops and sides should be gasketed with a soft weather stripping. Use of threshold closures at the bottom of the door or air seals will reduce sound transmission.

Figure 1

Single wood studs, *QuietZone* acoustic batt insulation and a single layer of ½" Type X gypsum board.



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QuietZone® Acoustic Batts

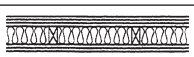
Product Data Sheet

Single Wood Stud Wall System

STC	STC Test No.	Construction Description		Fire Rating	Fire Test
36	OCF423	Single wood studs 16" o.c.; single layer 5/8" type "x" gypsum drywall each side; one thickness, 3½" thick *QuietZone* Acoustic Batts		1 Hr.	UL U305
39	W2069	Single wood studs 16" o.c.; single layer ½" type "x" gypsum drywall each side; one thickness, 3½" thick *QuietZone* Acoustic Batts		N.A.	—
40	W2469	Single wood studs 16" o.c.; double layer ½" type "x" gypsum drywall one side, single layer other side; one thickness, 3½" thick *QuietZone* Acoustic Batts		N.A.	—
45	W2569	Single wood studs 16" o.c.; double layer ½" type "x" gypsum drywall each side; one thickness, 3½" thick *QuietZone* Acoustic Batts		1 Hr.[1]	UL U305

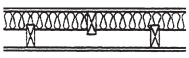
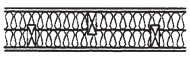
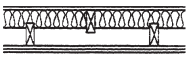
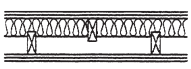
[1]Rating is estimated from tests using thinner assemblies of fewer layers of gypsum drywall. Specific test references are available and will be provided upon request.

Single Wood Stud with Resilient Channel Wall System

STC	STC Test No.	Construction Description		Fire Rating	Fire Test
46	W0769	Single wood studs, resilient channel; single layer ½" type "x" gypsum drywall each side; one thickness. 3½" thick *QuietZone* Acoustic Batts		N.A.	—
50	WP3230[2]	Single wood studs, resilient channel; single layer 5/8" type "x" gypsum drywall each side; one thickness, 3½" thick *QuietZone* Acoustic Batts		1 Hr.	OSU T-3127
52	W0669	Single wood studs, resilient channel; single layer ½" type "x" gypsum drywall one side, double layer other side; one thickness, 3½" thick *QuietZone* Acoustic Batts		N.A.	—
56	W0569	Single wood studs, resilient channel; double layer ½" type "x" gypsum drywall each side; one thickness, 3½" thick *QuietZone* Acoustic Batts		1 Hr.[1]	OSU T-3127

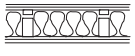
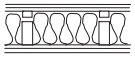
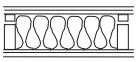
[1]Rating is estimated from tests using thinner assemblies of fewer layers of gypsum drywall. Specific test references are available and will be provided upon request.
[2]Listed in the Gypsum Association *Fire Resistance Design Manual*

Staggered Wood Stud Wall System

STC	STC Test No.	Construction Description		Fire Rating	Fire Test
46	W5769	Staggered wood studs 16" o.c.; single layer 5/8" type "x" gypsum drywall each side; one thickness, 3½" thick *QuietZone* Acoustic Batts		1 hr.[1]	UL U305
51	W01486	Staggered wood studs 16" o.c.; single layer ½" type "x" gypsum drywall each side; one thickness, 3½" thick *QuietZone* Acoustic Batts		N.A.	—
51	OC5FC	Staggered wood studs 16" o.c.; single layer ½" type "x" gypsum drywall each side; two thicknesses, 3½" thick *QuietZone* Acoustic Batts		1 hr.	OSU 4970
53	W4769	Staggered wood studs 24" o.c.; double layer ½" type "x" gypsum drywall one side, single layer other side; one thickness, 3½" thick *QuietZone* Acoustic Batts		N.A.	—
55	W4869	Staggered wood studs 24" o.c.; double layer ½" type "x" gypsum drywall each side; one thickness, 3½" thick *QuietZone* Acoustic Batts		1 hr.[1]	UL U309

[1]Rating is estimated from tests using thinner assemblies of fewer layers of gypsum drywall. Specific test references are available and will be provided upon request.

QuietZone Wall Framing System

STC	STC Test No.	Construction Description		Fire Rating	Fire Test
57	E90-99087	2x4 *QuietZone* Acoustic Framing on 16" centers, double layers ½" type "x" gypsum drywall each side, 3½" thick *QuietZone* Acoustic Batts		1 hr.[1]	UL U305
60	E90-01029	2x6 *QuietZone* Acoustic Framing on 16" centers, double layers 5/8" type "x" gypsum drywall each side; 5½" thick *QuietZone* Acoustic Batts		N.A.	—
63	E90-99102	2x6 *QuietZone* Acoustic Framing on 24" centers, double layers 5/8" type "x" gypsum drywall each side; 5½" thick *QuietZone* Acoustic Batts		1 hr.	OSU 4970

Product Data Sheet

Sliding doors should be avoided where optimum noise control is desired. Doors opening on hallways should not open across from one another.

Electrical

Light switches and outlets should not be located back-to-back. Ceiling fixtures should be surface mounted and openings around boxes should be sealed airtight.

Circuit breaker boxes, telephone outlets and intercom systems should be located on well-insulated interior walls and never on exterior, part or hallway walls.

Plumbing

Pipe runs should be designed with swing arms so expansion and contraction can occur without binding, thus eliminating unwanted water flow generated sound. Piping should also be isolated from surrounding structures with resilient mounts.

Installation of fixtures back-to-back should be avoided. In all cases, openings made in walls should be caulked or sealed to ensure optimum acoustical integrity.

Ducts and HVAC Equipment

Since ducts can easily transmit sound, duct design should be given special consideration when planning the heating and air conditioning system.

The installation of a quiet, high quality heating and air conditioning unit is recommended to reduce duct-carried noise. When possible, isolate equipment away from "quiet" areas.

Owens Corning offers a variety of duct systems, wraps and liners that effectively reduce noise.

Fire Safety

Kraft facing will burn. Do not leave exposed. Facing must be installed in substantial contact with an approved ceiling, floor or wall material. Keep open flame and other heat sources away from facing. Do not place insulation within 3" of light fixtures or similar electrical devices unless device is labeled for contact with insulation. Use only unfaced insulation between wood framing and masonry chimneys. Do not use insulation in spaces around metal chimneys, fireplaces, or flues. Unfaced insulation is considered non-combustible by model building codes. Flame Spread 25 products are flame spread rated and can be left exposed where codes allow. See package for warnings, fire hazard and installation instructions, or call 1-419-248-8234.

Applicable Standards

QuietZone acoustic batts comply with:

- ASTM C 665, Type II, Class C. Federal Specification HH-I-521F has been cancelled and is replaced by ASTM C 665.
- Uniform Building Code (ICBO) building types III, IV, and V
- National Building Code (BOCA) building types 3, 4, and 5
- Standard Building Code (SBCCI) building types III, V, and VI.

Always check with your local building code official regarding local requirements affecting installation of all building components.

Fiber Glass and Mold

As manufactured, fiber glass insulation is resistant to mold growth. However, mold growth can occur on building materials, including insulation, when it becomes contaminated with organic material and when water is present. To avoid mold growth on fiber glass insulation, remove any water that has accumulated and correct or repair the source of that water as soon as possible. Insulation that has become wet should be inspected for evidence of residual moisture and contamination, and any insulation that is contaminated should be promptly removed and replaced.

For more information on *QuietZone* acoustic batts or the *QuietZone* Noise Control System, call 1-800-GET-PINK or visit our Web site at: www.quietzone.com

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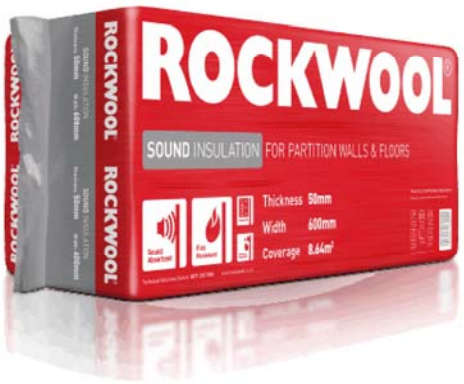
ROCKWOOL Sound insulation slab



ROCKWOOL Sound Insulation is made from stone, with a non-directional fibre orientation and a higher density, which means it traps sound waves and dampens vibration.

Easy to cut to fit around cables, pipes, sockets and services, and featuring the patented "FLEXI" edge, ROCKWOOL Sound Insulation is quick and easy to friction fit without leaving gaps or cracks, which can significantly reduce performance.

ROCKWOOL Sound insulation repels water and is vapour permeable, and resists rot and mould.

Being made from stone also means exceptional fire performance; capable of withstanding temperatures of up to 1,177C and achieving the highest Euroclass A1 fire resistance classification. ROCKWOOL Sound insulation is ideal for use in residential applications such as home offices, studies, bedrooms and bathrooms, and TV media and gaming rooms.

- Excellent Acoustic performance - Quiet MarkTM approved.
- Highest Euroclass fire rating – A1
- Water repellent and vapour permeable
- Resists rot and mould
- Easy to cut and fit
- Patented "FLEXI" Edge

CE

Product Range

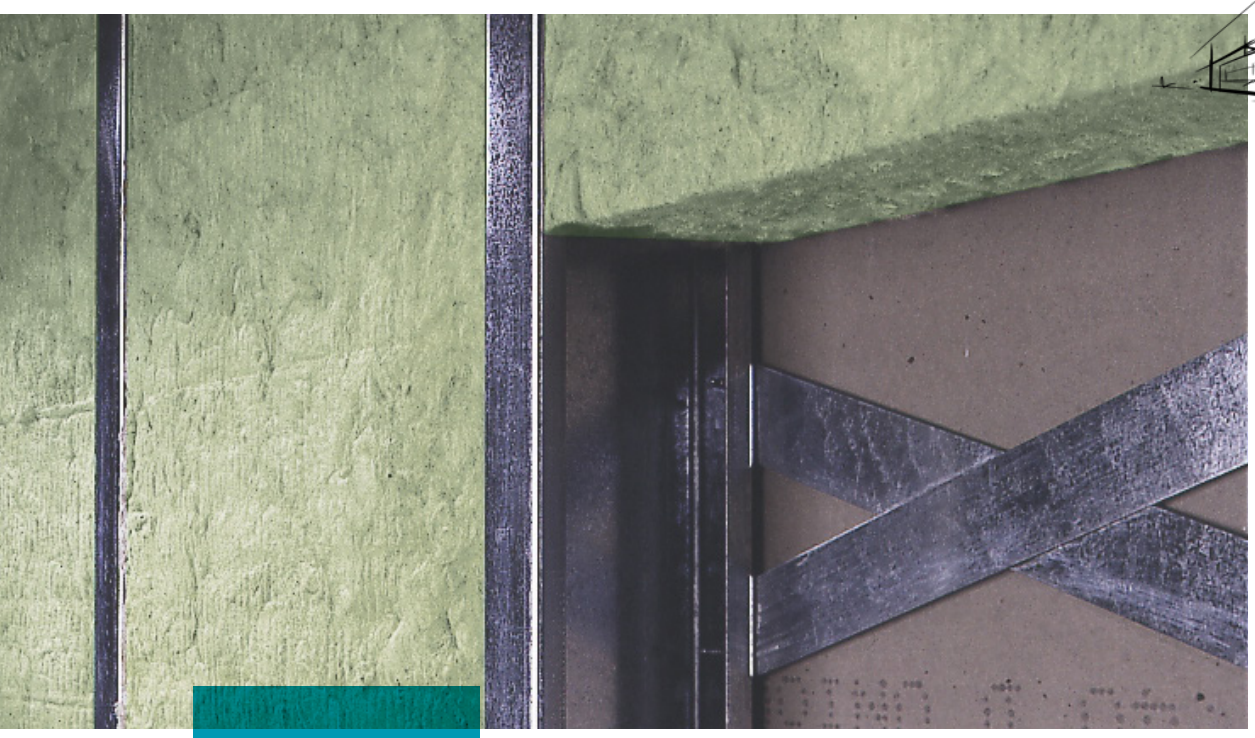
Product Code	Additional information	Thickness (mm)	Width (mm)	Length (mm)	Pieces/Pack	Area/Pallet (m2)	Area/Pack (m2)	Packs/Pallet
180885	Slab	50	600	1200	12	77.76	8.64	9
180887	Slab	70	600	1200	8	69.12	5.76	12
180889	Slab	100	600	1200	6	64.8	4.32	15
180891	Slab	100	400	1200	6	72	2.88	25

Technical Information

Property	Description
Dimensions	400mm & 600mm width x 1200mm length
Thickness	50mm / 70mm / 100mm
Acoustic Performance	
Fire Classification	Eurcoclass A1 (BS EN 13501-1)
Water Repellency	Repells water
Environmental	Zero ODP & GWP. 97% recyclable
Standards	BS EN 13162

AFB®

Acoustical Fire Batt Insulation



ROCKWOOL AFB® is a lightweight, acoustical fire batt stone wool insulation specifically designed for steel stud interior wall and floor applications. Its superior sound absorbency and fire protection contribute to the overall comfort and safety of occupants.

It provides increased density that reduces sound transmission. Greater noise control is further achieved when AFB® is part of the wall assembly along with gypsum boards and resilient channels.

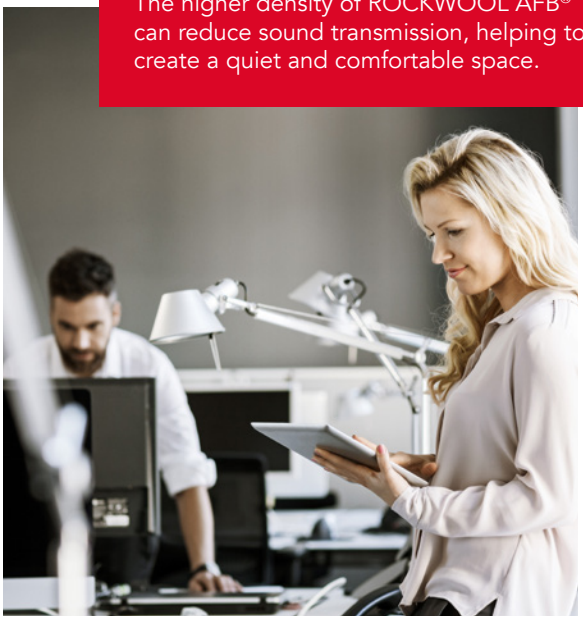
AFB® is non-combustible and will not develop toxic smoke or promote flame spread, even when directly exposed to fire. This helps to provide valuable extra time for people to reach safety and for fire services personnel to control the spread. It is a key component of fire-rated partitions.

AFB® comes in a number of thicknesses to meet the requirements of both retrofit and new construction applications.

Learn more at rockwool.com

Quiet Spaces

The higher density of ROCKWOOL AFB® can reduce sound transmission, helping to create a quiet and comfortable space.



ROCKWOOL™

AFB®
Acoustical Fire Batt Insulation

Technical Data Sheet

Batt Insulation 07210 & 09820* • Blanket Insulation 07 21 16**
Acoustical Blanket Insulation 09 81 16**

ROCKWOOL AFB® is a mineral wool batt insulation for interior partitions in commercial constructions where superior fire resistance and acoustical performance are required.

	Performance	Test Standard
Compliance	Mineral Fiber Thermal Insulation for Buildings, Type 1 Compliant	CAN/ULC S702
	Mineral Fiber Blanket Thermal Insulation, Type 1 Compliant	ASTM C665
	Mineral Fiber Blanket Thermal Insulation, Type 7 Compliant	ASTM C553
	MEA Approval, New York City Approval	338-97-M
	City of Los Angeles Approval	RR 25444
Reaction to Fire	Flame spread index = 0; Smoke developed index = 0	ASTM E84 (UL 723)
	Flame spread index = 0; Smoke developed index = 0	CAN/ULC S102
	Determination of Non-combustibility of Building Materials - Non-combustible	CAN/ULC S114
	Behavior of materials at 750°C - Non-combustible	ASTM E136
	Smolder Resistance - 0.09%	CAN/ULC S129
Density	Actual Density at thicknesses ≥ 3" (76.2 mm) - 2.5 lbs/ft³ (40 kg/m³)	ASTM C303
	Actual Density at thicknesses < 3" (76.2 mm) - 2.8 lbs/ft³ (45 kg/m³)	
Corrosion Resistance	Stress Corrosion Cracking Tendency of Austenitic Stainless Steel - Passed	ASTM C795
	Corrosion of Steel - Passed	ASTM C665
Air Erosion	Maximum Air Velocity - 1000 fpm (5.08 m/s)	UL 181
Thickness Dimensions	1" through 4" (25.4 mm - 101.6 mm) in 1/2" increments as well as 5" (127 mm) and 6" (152.4 mm) 16" x 48" (413 mm x 1219 mm), 24" x 48" (610 mm x 1219 mm)	
Acoustical Performance	Thickness / 125 Hz / 250 Hz / 500 Hz / 1000 Hz / 2000Hz / 4000 Hz / NRC	ASTM C423
	1.0" / 0.14 / 0.25 / 0.65 / 0.9 / 1.01 / 1.01 / 0.7	
	1.5" / 0.18 / 0.44 / 0.94 / 1.04 / 1.02 / 1.03 / 0.85	
	2" / 0.28 / 0.6 / 1.09 / 1.09 / 1.05 / 1.07 / 0.95	
	3" / 0.52 / 0.96 / 1.18 / 1.07 / 1.05 / 1.05 / 1.05	
	4" / 0.86 / 1.11 / 1.2 / 1.07 / 1.08 / 1.07 / 1.1	
	Please contact ROCKWOOL for STC ratings on tested wall assemblies	ASTM E90
Fire Rated Designs	ULC Classification Code: BZJZC UL Classification Code: BZJZ	

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NOTE: *Master Format 1995 Edition **Master Format 2004 Edition. As ROCKWOOL has no control over installation design and workmanship, accessory materials or application conditions, ROCKWOOL does not warranty the performance or results of any installation containing ROCKWOOL's products. ROCKWOOL's overall liability and the remedies available are limited by the general terms and conditions of sale. This warranty is in lieu of all other warranties and conditions expressed or implied, including the warranties of merchantability and fitness for a particular purpose.

ROCKWOOL™

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