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## SECTION 1

### ACOUSTIBLOK SOUND REDUCTION PRODUCTS OVERVIEW

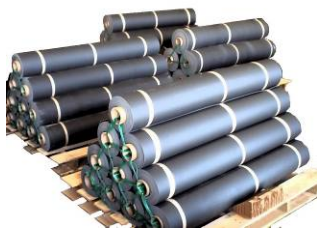
- Acoustiblok LEED Qualifying Credits
- Acoustiblok Sound Isolation Material Brochure
- Acoustiblok Application & FAQ
- Acoustiblok SpecData Specification Sheet
- Acoustiblok Amazing Facts: Limp Mass vs. Rigid Mass

## LEED Qualifying Credits

Acoustiblok	Acoustiwool WF-0.125	Acoustiwool TF-0.11	Thermablok	Category Description
<b>LEED for New Construction and Major Renovations v 2.2</b>				
	√	√	√	Minimum Energy Performance
	√	√	√	Optimize Energy Performance
√		√	√	Recycled Content
<b>LEED for Schools 2007</b>				
	√	√	√	Minimum Energy Performance
	√	√	√	Optimize Energy Performance
√		√	√	Recycled Content
√	√	√		Minimum Acoustical Performance
√	√	√		Enhanced Acoustical Performance
√	√	√	√	Mold Prevention
<b>LEED for Core and Shell v 2.0</b>				
	√	√	√	Minimum Energy Performance
	√	√	√	Optimize Energy Performance
√		√	√	Recycled Content

### Acoustiblok® - Quieting The World Sound Isolation Material

- 100% Recyclable
- 40% Pre Consumer Recycled Content
- Highest Mold Resistance Rating
- High Acoustical Performance Ratings



### Thermablok - Aerogel Energy Conservation Thermal Acoustic Isolation Strips

- 100% Recyclable
- 30% Pre Consumer Recycled Content
- Can increase Wall R Value over 40%
- Hydrophobic & Breathable



### Acoustiwool™ - TF0.11 Tile Floor Acoustic Underlayment

- 95% Recycled Content
- Antimicrobial Treatment Inhibits Mold Growth
- R value = 0.46
- Tested by Independent Lab



### Acoustiwool™ - WF0.125 Wood Floor Acoustic Underlayment

- 100% Sheep's Wool
- Rapidly Renewable Source
- R value = 0.65
- Tested by Independent Lab

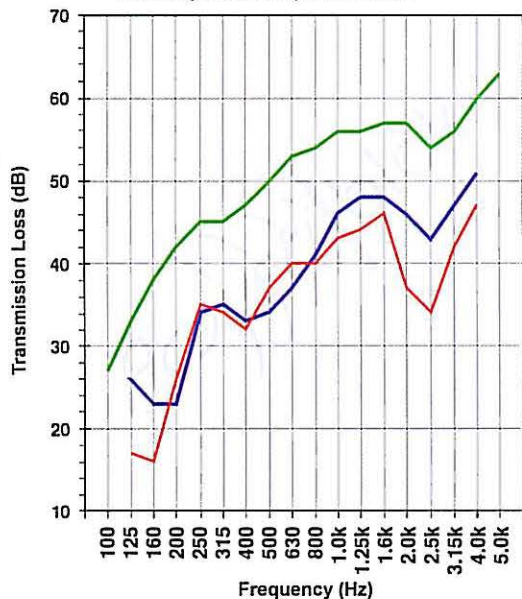




## Product Description

Acoustiblok is approximately 1.1 lb psf, 1/8" (3mm) reinforced noise isolating material, utilized as a structural treatment for reducing sound transmission. It contains no lead or asbestos and is 100% recyclable, made of over 90% recycled and organic material. It is typically applied as part of a layered wall or floor construction. Acoustiblok reduces sound transmission even in low frequencies under 100 Hz. Mold tests of "10". Higher STC 2 LB also available (STC 32). Non-corroding, waterproof, UV tolerant, self extinguishing, available in rolls 54 inches wide x 30', 60', or 350'.

ACOUSTIBLOK® vs. MULTIPLE LAYERS of DRYWALL  
Laboratory test results per ASTM E90



— One layer 5/8" drywall both sides, with Acoustiblok® STC = 53  
 — Two layers 5/8" drywall both sides, no Acoustiblok® STC = 40  
 — One layer 5/8" drywall both sides, no Acoustiblok® STC = 36

Test reports RAL TL04-274, NGC 2363, OCF 423

Independent laboratory tests confirm, multiple layers of drywall are not an acceptable substitute for 100% recyclable Acoustiblok. ©

Unlimited Noise & Privacy Applications

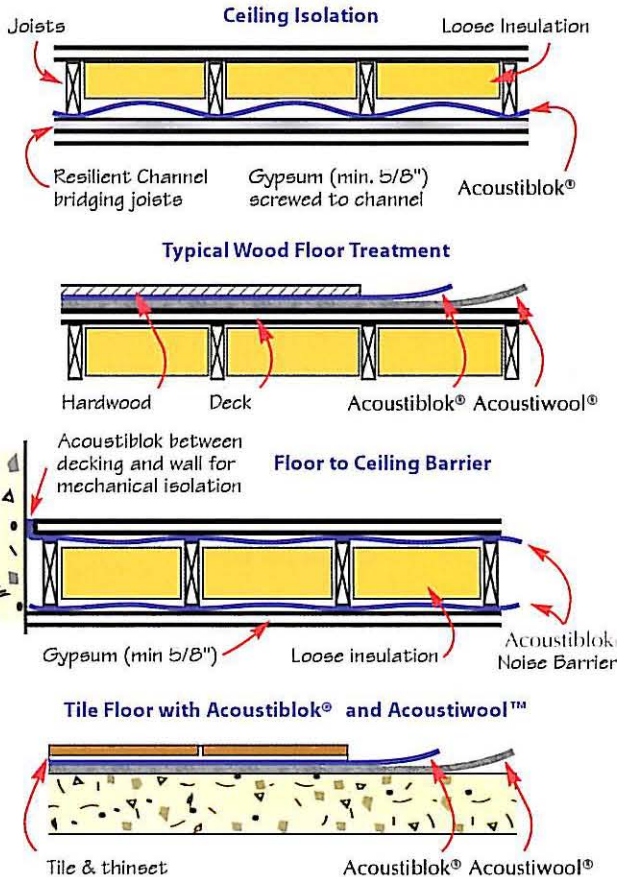


www.ACOUSTIBLOK.com

MADE IN USA

100% Recyclable

- |                  |                 |                |
|------------------|-----------------|----------------|
| Industrial       | Medical Offices | Plumbing Pipes |
| Condos           | Airports        | Restaurants    |
| Apartments       | Nurseries       | Automobiles    |
| Hotels           | Kennels         | Gymnasiums     |
| Home Theaters    | Air Handlers    | Marine         |
| Power Plants     | Shopping Plazas | Hospitals      |
| Schools          | Offices         | Factories      |
| Attorney Offices | Churches        | Libraries      |
| Residential      | Gun Ranges      | Military       |



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At last, a U.L. approved, 100% recyclable, easy to use sound proofing. Better than lead, a stud wall with a thin 1/8" (3mm) layer of Acoustiblok has more sound reduction than 12" of poured concrete (STC 51). An additional layer results in not only further sound reduction, but also increased thermal insulation value.

People are no longer willing to tolerate noise and loss of privacy. The EPA now enforces noise ordinances and the public is using these laws. Noise is the #2 litigation issue brought to court by owners of multi family units, and will soon be #1. Large settlements are commonplace, and liability may extend to developers and contractors. A survey by J.D. Powers and Associates found the #1 complaint in hotels was not service, food, nor cleanliness, but noise.

Current soundproofing materials do far less than Acoustiblok to reduce noise. Extra drywall, variations of drywall, or spray-in foam can not reduce sound or increase energy efficiency like Acoustiblok does. Acoustiblok also allows easy access to the interior of the wall for plumbing and wiring maintenance.

Acoustiblok is a truly unique product which has taken years to develop. It is a proprietary formula, heavy mineral filled viscoelastic polymer. While others attempt to reduce sound with solid or absorbing materials, Acoustiblok does neither. The thin flexible 1/8" material is stapled or screwed to studs before drywall. As Acoustiblok vibrates from sound, it actually transforms the acoustical energy into inaudible friction energy. Lead previously considered the best sound proofing, works on the same principle.



Acoustiblok was awarded 1st place for sound abatement innovation in the British House of Commons: "A revolutionary soundproofing material is to make a major impact on noise abatement." - Lord Whitty ©

## Acoustiblok® Installation Methods

Acoustiblok comes in rolls of 30', 60', or 350' long x 54". It is easily cut with a box knife and a straight edge.

▶ Stapling with a roofing cap stapler is an easy method to attach Acoustiblok to wood studs, ceiling joists, or furring strips.

▶ For metal studs, use self tapping panhead screws. For floors (wood or concrete), spot gluing is adequate. (varies for different floors) Also acts as a moisture barrier and crack isolator.

▶ Tape and sealants are available for all joints to make them airtight. 8" x 8" putty pads easily seal the back of all electrical boxes and other holes.

▶ The best sound barrier is one that expends the acoustic energy by flexing. Therefore, the best results are when the products are left somewhat loose when stapled to studs before drywall is hung.

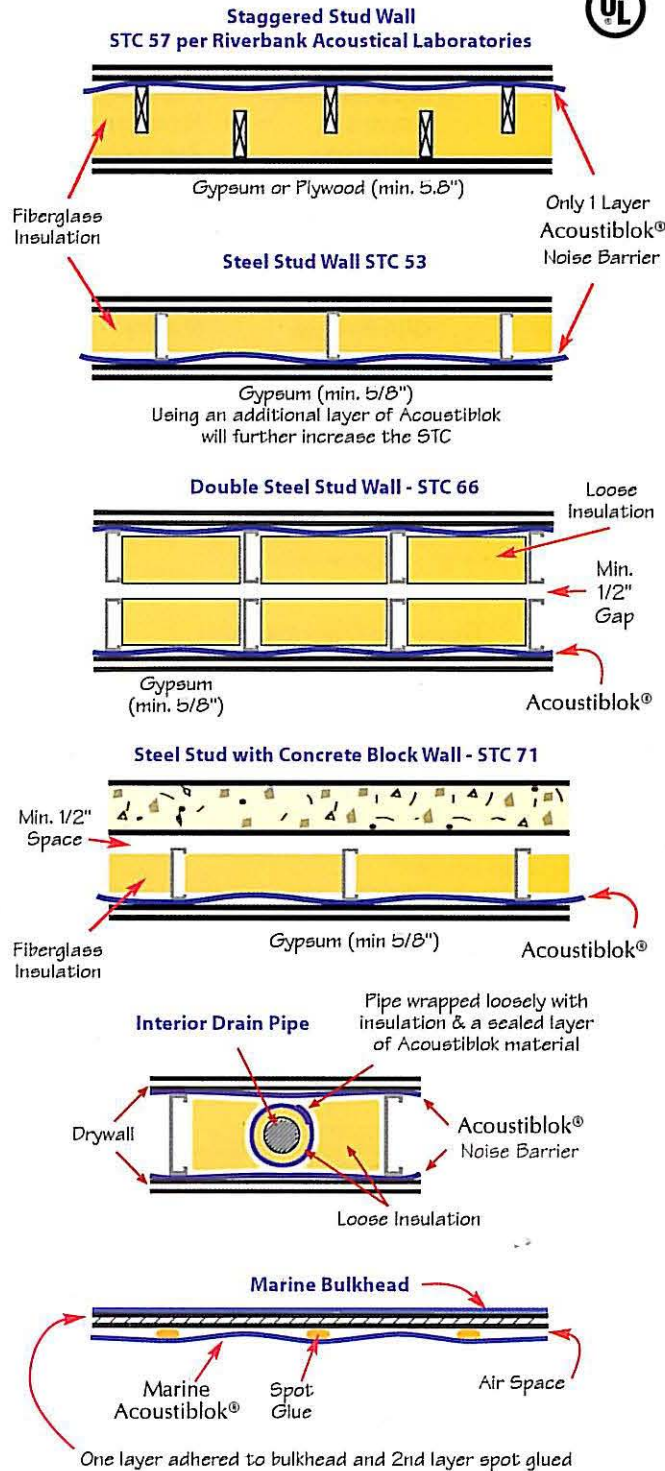
Acoustiblok also helps in eliminating solid mechanical linkage, which is a major cause of sound transmission. Thermal value of walls increases as well. (For additional thermal up to 40% use Thermablok™)



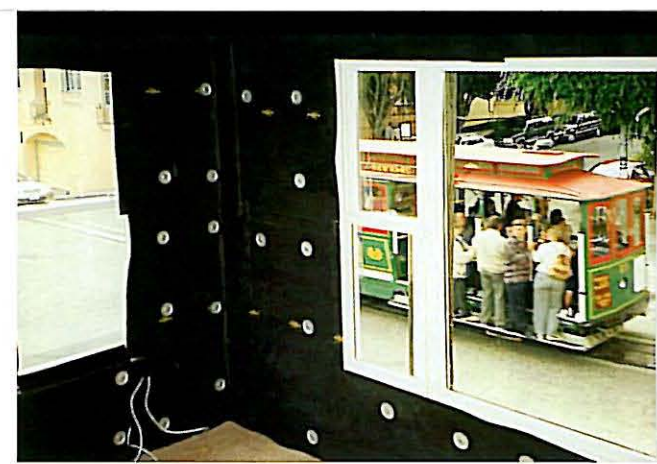
www.Acoustiblok.com

## Typical Wall Applications

(Lab Certified)



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Sound & Vibrations from trolley cars in San Francisco are blocked. (More Testimonials at Acoustiblok.com)

## Acoustiblok® is a very unique material

- ▶ 100% Recyclable
- ▶ Made from over 90% Recycled and Organic material
- ▶ U.L. Classified for virtually all walls, floors, and ceilings (over 380 designs).
- ▶ Impervious to saltwater and most oils
- ▶ Very flexible, cuts with box knife
- ▶ Can be nailed, stapled, or glued
- ▶ Acts as moisture barrier & crack isolator
- ▶ Highly UV tolerant, tested up to 200°
- ▶ It will not mildew or mold (Lab rated 10)
- ▶ Can be put in basements or in attics
- ▶ Will not compress under carpet
- ▶ Unlimited shelf life, is non corrosive
- ▶ Adds virtually no thickness to walls or floors



Acoustiblok® reduces industrial noise very effectively. Also available in 2 LB density with higher STC.

*Acousti*blok®

When  
What  
You  
Don't  
Hear  
Counts.



One Man's Music...  
Another Man's Noise...



Unless you have

*Acousti*blok

# Testimonials



## Acoustiblok wins 1st place at the British House of Commons:

"A revolutionary sound proofing material is set to make a major impact on noise abatement issues . . .", United Kingdom Noise Assoc.  
"An important contribution to controlling noise and, in so doing, improving life for many people", Lord Whitty, British House of Commons.  
". . . a solution on both cost and space, and with regards to decibel issues it is unrivaled", Mike Ervine, United Kingdom.



**Shephard's Beach Resort** has a popular nightclub called The Wave. Guests always complained about the vibrating loud music. After trying other products unsuccessfully, we decided to install Acoustiblok. The noise reduction was impressive, but more importantly, the complaints from guests have stopped. It really works.

Shephard's Beach Resort, Clearwater Beach, FL

Very pleased with the way Acoustiblok has reduced sound transmission between rooms in our monastery. We definitely recommend your product. The Carmelites of Boston, Monastery



I not only have sold 120 town homes with Acoustiblok in Baldwin Park, but I also live in one. Home owners all tell me they are very happy with the sound protection. I have a surround sound system and I have asked my neighbor repeatedly if they hear it and the answer is always no. I definitely recommend Acoustiblok.

Patrick de la Roza, Baldwin Park



I live in a hi-rise condo on Bayshore. I have one contiguous wall with a neighbor that could even tell what TV program I was watching. After doing some research, I installed Acoustiblok. The product has exceeded my expectations and I now have a happy neighbor.

Susan from Tampa



I recently moved into a prestigious area in Frisco. The noise and vibration from the trolley cars right outside my condominium were unbearable. I am amazed with how well Acoustiblok worked! Now my wife and I can enjoy peace and quiet in our home.

R. M., San Francisco, CA

Our experience with Acoustiblok was absolutely positive. We had a severe noise problem with a 90 ton AC chiller being 4 feet away from the residence. We tried concrete and Styrofoam with no success. We then made a simple sheet rock wall with only one layer of Acoustiblok. It exceeded our expectations with an impressive 20db reduction! I definitely recommend you give Acoustiblok a try, you will be impressed!

Francisco Brenes Obaldia, M.B.A.  
ALFA - President

## The Acoustiblok Noise Reduction System

# Acousti|blok®

Your beautiful new house should be more than a house, a home, where a family can enjoy life together as well as a respite of peace and privacy, a place of memories to make.

It should be all that you are, speaking your uniqueness and choices in every way. It will be the setting for the very soundtrack of your life. Each evening unforgettable, because of sound...or its absence. From your home theatre playing a symphony or roaring cinema cannon, to celebrating with friends and music in the family room. It may be a spring night, when the one you love leans near and whispers tenderly in your ear...You may listen for a baby's dreams, each sound precious... some to share, some not...

When  
What  
You  
Don't  
Hear  
Counts.

The Acoustiblok noise reduction system will ensure that what happens in your home remains there, and that the joy of others stays their own.

Acoustiblok is a revolutionary sound suppressing innovation, which follows the laws of nature. Unlike other products that attempt to stop or absorb sound, Acoustiblok has resolved the problem in a far more natural and simpler way. The thin 1/8" Acoustiblok membrane very heavy and flexible, is simply stapled to studs before drywall and sealed airtight. As it flexes (vibrates) from acoustic sound waves, it actually "transforms" the annoying acoustic energy into **inaudible** friction energy. The result is an astounding effective noise control system, such that only one layer reduces more sound than 12" of poured concrete!

Awarded 1st Place in the British House of Commons from the Noise Abatement Society, Acoustiblok sound reduction material requires no special preparation for installation and is easily placed along with regular insulation. It will even increase the thermal value of the walls.

In today's hectic life style the time you spend in your home is precious. It should afford all the tranquil ambiance or home cinema volume you or your family members desire. Music will never sound so pure, or a sigh so sweet. Acoustiblok does this for families all over the world. Can we do this for you...



Ask your architect about how easily Acoustiblok can be used throughout your entire home.

©

## FREQUENTLY ASKED QUESTIONS:

Q: Doesn't the building code insure adequate sound abatement?

A: Building codes and HUD Standards (US Department of Housing and Urban Development) are improving slightly, but are losing ground to today's video game and surround sound life style. In residential building standards there is a little if any concern for sound proofing or privacy. Amplifying the problem is the fact that everyone is using non absorbing building materials like tile and granite which dramatically increase the level of noise in an area.

Q: Does Acoustiblok meet required building fire codes?

A: Yes, actually far beyond to say the least. Acoustiblok is UL laboratories approved for over 380 commercial types of construction assemblies. Commercial UL approval is significantly beyond residential requirements, especially in fire and smoke concerns.

Q: What is Acoustiblok?

A: Acoustiblok is a 1/8" (3mm) heavy mineral filled viscoelastic polymer. It is extremely soft and flexible. The proprietary formula has taken years to develop. It passes both UL commercial "fire" and "smoke", while still producing maximum reduction in specific frequencies of sound that other products are unable to control. It is very different from other products known as "mass loaded vinyls".

Q: Why does Acoustiblok do a better job than other methods?

A: The 1/8" thick Acoustiblok works like a curtain of lead. It is extremely flexible and very heavy (1lb./sq.ft.) As sound waves cause it to move, it changes the sound energy into mechanical movement, thus transforming the acoustic energy into inaudible friction energy. This is a far superior method than

using solid rigid items which transfer energy from one side to the other. In fact, only one layer of Acoustiblok in a typical wall stops more sound than 12" of poured concrete (STC 53 vs. 51) and will provide **double** the reduction in low frequencies that adding two additional layers of drywall would.

Q: How well does spray in foam work?

A: In regards to sound it does virtually nothing because it is closed cell and is a relatively solid object. Test show that it can actually **increase** sound transmission from wall to wall. This is definitely not recommended to reduce sound.

Q: Does Acoustiblok afford me 100% sound proofing?

A: NO. 100% sound proofing is not obtainable with any material. Sound abatement is a science of significantly reducing sound to inaudible levels. The STC numbers reflect to what degree the reduction is, the higher the number the better. A 10DB difference represents a 50% difference to the human ear. (However, the STC figures should be used in conjunction with the frequency graphs used to produce the STC)

Q: Can I add sound abatement later?

A: Possible, but extremely expensive as it would require removal of the wall surface or adding a new wall.

Q: When is the latest time during construction that Acoustiblok can be installed?

A: Acoustiblok requires no changes in construction and may be installed anytime before drywall on walls, or tile on floors if doing floors.

Q: Can I sell my residence for more if it has an "Acoustiblok Sound Reduction System"?

A: Absolutely. Acoustiblok is known throughout the world and privacy has become a real concern in residential dwellings in multifamily, sometimes the prime concern.

Q: In light of potential hurricane damage, how does mold affect Acoustiblok?

A: Acoustiblok has the highest mold resistance achievable. Lab tested at "10" on a scale of 1 to 10.



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MADE IN USA



**Acousti|blok**  
When What You Don't Hear Counts...

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**1. Product Name**

Acoustiblok® Sound Isolation Material and Acoustiblok All Weather Sound Panels™

**2. Manufacturer**

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 Tampa, FL 33616  
 (813) 980-1400  
 Fax: (813) 849-6347  
 E-mail: [sales@acoustiblok.com](mailto:sales@acoustiblok.com)  
[www.acoustiblok.com](http://www.acoustiblok.com)  
[www.thermablok.com](http://www.thermablok.com)

**3. Product Description**

**BASIC USE**

Acoustiblok offers high performance sound reduction solutions for multifamily projects, condominiums, hotels, hospitals, construction sites, industrial areas and other projects where privacy and sound control are important.

Acoustiblok® Sound Isolation Material  
 Acoustiblok is a heavy, yet very flexible viscoelastic polymer material that provides sound reduction through a unique adiabatic process. Rather than attempting to block or absorb sound, Acoustiblok transforms sound energy into inaudible friction energy as the material flexes from sound waves. A layer 1/8" (3 mm) thick in a single stud wall assembly (STC 53) can provide more sound reduction than 12" (305 mm) of poured concrete (STC 51). Acoustiblok is UL classified for wall, floor and ceiling fire-rated assemblies, and is nailed or stapled to wood framing or screwed to metal framing prior to drywall, ceiling or floor installation.

Acoustiblok All Weather Sound Panels™  
 Acoustiblok All Weather Sound Panels, with an inner layer of Acoustiblok Sound Isolation Material, are designed to withstand hostile indoor or outdoor environments. With a NRC rating of 1.0, these rigid framed sound panels not only absorb extreme levels of sound, but also block sound and have an STC rating of 29 with only a 2.4" (61 mm) panel thickness.

Acoustiblok All Weather Sound Panels are easily installed and easily moved. They resist sun, water, dirt, UV and mold and are suitable for indoor and outdoor high energy noise



Acoustiblok is easy to install — requires no special tools or labor.

applications: roadway, railway, HVAC, gymnasiums, construction, engine and generator rooms and many other industrial projects.

**COMPOSITION & MATERIALS**

Acoustiblok Sound Isolation Material  
 Acoustiblok Sound Isolation Material is a 1/8" (3 mm) or 1/4" (6 mm) thick proprietary viscoelastic polymer with a high density mineral content.

Acoustiblok All Weather Sound Panels  
 Acoustiblok All Weather Sound Panels are constructed of a specially engineered 2" (51 mm) thick weather resistant sound absorbing material and a layer of Acoustiblok Sound Isolation Material. They are framed of corrosion resistant aluminum and have acoustically transparent perforated aluminum front sides and solid aluminum back sides.

**SIZES**

- Acoustiblok Sound Isolation Material
- 1/8" (3 mm), 1 lb/ft<sup>2</sup> (4.88 kg/m<sup>2</sup>); available in rolls 4.5' (1.4 m) wide x 30', 60' or 350' (9, 18 or 107 m) long
  - 1/4" (6 mm), 2 lb/ft<sup>2</sup> (9.76 kg/m<sup>2</sup>); available in rolls 4.5' wide x 100' long (1.4 m wide x 31 m long)

Acoustiblok All Weather Sound Panels  
 Standard stock sizes:

- 4' x 12' x 2.42" (1.22 x 3.66 m x 61 mm)
- 4' x 10' x 2.42" (1.22 x 3.05 m x 61 mm)
- 4' x 8' x 2.42" (1.22 x 2.44 m x 61 mm)
- 4' x 6' x 2.42" (1.22 x 1.83 m x 61 mm)
- 4' x 4' x 2.42" (1.22 x 1.22 m x 61 mm)

Custom sizes are also available.

**BENEFITS**

- Acoustiblok Sound Isolation Material
- Effectively reduces interior sound levels per certified independent lab sound tests
  - UL classified for over 300 fire-rated assemblies, including all U300, U400, V400 and L500 wall, floor and ceiling assemblies
  - Easy to install - Can be cut with a utility knife and requires no special tools or labor
  - Water, dirt, corrosion and UV resistance allows installation in a variety of applications
  - Per ASTM D3273/3274, Acoustiblok achieved the highest possible score for mold and mildew resistance, earning a rating of 10 for no fungal growth

- Acoustiblok All Weather Sound Panels
- Not only absorb sound (NRC 1.0), but also block sound (STC 29)
  - Durable, solid construction withstands harsh indoor and outdoor environments
  - Easily installed and moved - Need not be a

Acoustiblok, Inc.



freeze at -40 degrees F (-40 degrees C). Do not unroll material at this temperature or below, as the material will crack. Freeze and thaw cycles do not affect the physical or acoustic properties of Acoustiblok.

For optimum results, maintain environmental conditions (temperature, humidity and ventilation) within limits recommended by the manufacturer and do not install the product under conditions outside absolute limits of the manufacturer.

**ACCESSORIES**

- Acoustigrip™ Tape
- Acoustiblok Acoustical Sound Sealant
- Acoustiputty™ Sound Sealant pads
- Acoustipad™ for carpeted floors
- Acoustiwool™-WFO.125 for wood floors
- Acoustiwool™-TF0.11 for tile floors
- Thermablok™ Thermal Acoustic Isolation Strips
- Acoustifence

**4. Technical Data**

**APPLICABLE STANDARDS**

ASTM International

- ASTM C423 Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
- ASTM C627 Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester

Acoustiblok provides tremendous sound reduction between rooms.

permanent installation

- Washable with a hose and soapy water
- Resistant to water, sun, dirt, mold and UV rays
- Can be mounted to a permanent surface or can be assembled as a freestanding temporary enclosure

**LIMITATIONS**

Acoustiblok Sound Isolation Material must be clean and dry for installation. Exposure of Acoustiblok Sound Isolation Material to sunlight is permissible. Do not permit the material to be creased, cut or punctured.

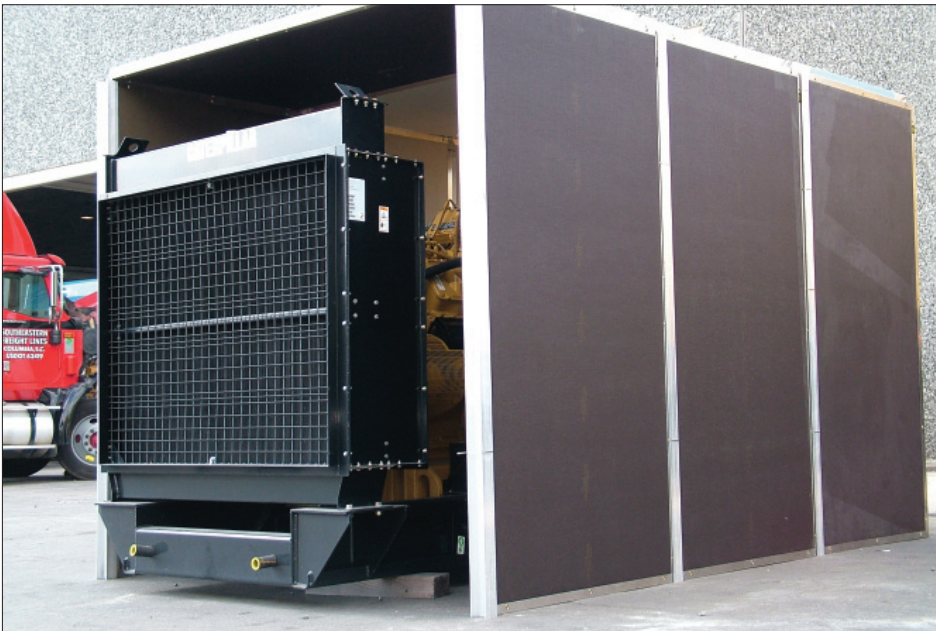
Acoustiblok Sound Isolation Material will

TABLE 1 PHYSICAL AND TECHNICAL PROPERTIES

	Acoustiblok Sound Isolation Material: 1/8" (3 mm)	Acoustiblok Sound Isolation Material 1/4" (6 mm)	All Weather Sound Panels (Standard Size Panels)
Size	Width 54" ± 0.125" (1.4 m ± 3.2 mm) Thickness 0.11" ± 0.03" (2.8 ± 0.8 mm) Rolls 30', 60', 350' (9, 18, 107 m)	Width 54" ± 0.125" (1.4 m ± 3.2 mm) Thickness 0.22" ± 0.03" (5.6 ± 0.8 mm) Rolls 100' (31 m)	4' x 12' x 2.42" (1.22 x 3.66 m x 61 mm) 4' x 10' x 2.42" (1.22 x 3.05 m x 61 mm) 4' x 8' x 2.42" (1.22 x 2.44 m x 61 mm) 4' x 6' x 2.42" (1.22 x 1.83 m x 61 mm) 4' x 4' x 2.42" (1.22 x 1.22 m x 61 mm)
Weight	Per 30' roll (9 m): Approx. 150 lb (68 kg) Per 60' roll (18 m): Approx. 280 lb (127 kg) Per 350' roll (107 m): Approx. 1600 lb (726 kg)	Per 100' (31 m) roll: 900 lb (409 kg)	12' (3.66 m) panel: 165 lb (74.8 kg) 10' (3.05 m) panel: 135 lb (61.2 kg) 8' (2.44 m) panel: 104 lb (47.2 kg) 6' (1.83 m) panel: 75 lb (34.0 kg) 4' (1.22 m) panel: 45 lb (20.4 kg)
Color	Black	Black	Aluminum mill finish, field paintable
Acoustical properties, ASTM E90, ASTM E413, ASTM C423, ASTM E795	STC 26	STC 32	NRC 1.0/STC 29
Environmental properties	Heat tolerance 200 degrees F (93 degrees C) for 7 days - less than 1% shrinkage, no deformation; freezes at -40 degrees F (-40 degrees C); UV resistant; ASTM D3273/3274, rating = 10	See 1/8" (3 mm) Acoustiblok	Capable of withstanding outdoor exposure in full sunlight and weather; UV tolerant
Uniform static air pressure, TAS 202			Rated for winds to 270 mph (435 kph)
Fire-rated properties	UL classified for use in U300, U400, V400, L500 fire-rated wall, floor, ceiling designs		UL 723 - Class A Flamespread - 0 Smoke development - 0



Acoustiblok, Inc.



Acoustiblok All Weather Sound Panels™ solve indoor and outdoor noise pollution problems.

- ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
- ASTM D3274 Standard Test Method for Evaluating Degree of Surface Disfigurement of Paint Films by Microbial (Fungal or Algal) Growth or Soil and Dirt Accumulation
- ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
- ASTM E413 Classification for Rating Sound Insulation
- ASTM E492 Standard Test Method for Laboratory Measurement of Impact Sound Transmission through Floor-Ceiling Assemblies Using the Tapping Machine
- ASTM E795 Standard Practices for Mounting Test Specimens During Sound Absorption Tests
- ASTM E989 Standard Classification for Determination of Impact Insulation Class (IIC)

Florida Building Code Testing Application Standard (TAS) - TAS 202 Criteria for Testing Impact & Nonimpact Resistant Building Envelope Components Using Static Uniform Air Pressure

Underwriters Laboratories, Inc. (UL)

- UL 723 Tests for Surface Burning Characteristics of Building Materials
- UL 263 Fire Tests of Building Construction and Materials

**APPROVALS**

Underwriters Laboratories, Inc. (UL) File # R21490

**PHYSICAL/CHEMICAL PROPERTIES**

See Table 1.

**Mold and Mildew Resistance**

When tested by an independent laboratory per ASTM D3273/3274, Acoustiblok achieved a score of 10, the best possible score for this test.

**FIRE PERFORMANCE**

Acoustiblok All Weather Sound Panels have the following fire performance properties when tested to UL 723:

- Flamespread - 0
- Smoke developed - 0

Acoustiblok Sound Isolation Material is UL classified for use in all U300, U400, V400, L500 fire-rated wall, floor and ceiling designs per UL 263 testing.

**5. Installation**

**PREPARATORY WORK**

Installation of Acoustiblok should be in accordance with methods described by the manufacturer. The information here is a general overview. Refer to individual product and assembly installation instruction sheets for complete detailed procedures.

Handle and store this product according to Acoustiblok recommendations. Ensure that the material is clean and dry.

Deliver and store this product protected from exposure to extreme or harmful environmental conditions and at the temperatures and humidity conditions recommended by the manufacturer.

With the exception of common hand tools, the materials and tools required for Acoustiblok installation are available from Acoustiblok, Inc.

**Acoustiblok Sound Isolation Material**

Because Acoustiblok is a heavy, high density product, a minimum of 2 installers should be available for preparation and installation.

Do not begin installation until substrates have been properly prepared. Whenever possible, Acoustiblok should be installed on the noise side of the assembly to help minimize the amount of acoustical energy that is converted into mechanical noise.

Acoustiblok can be cut with a utility knife and a straight edge. Stapling or nailing with a roof cap is an easy way to attach Acoustiblok to wood studs, ceiling joists or furring strips. For metal studs, use self-tapping wafer head-screws with tin roof caps or a wafer head screw. For floors, spot gluing is adequate.

The most effective sound barrier is one that expends the acoustical energy through an adiabatic process. Acoustiblok is most effective when it is allowed to flex, so leave it slightly loose or limp (not pulled tight like a drum head) between the framing and assembly finish, i.e., between the studs and the dry-wall or joist and subfloor. Acoustiblok also provides decoupling of the solid mechanical linkage between materials, which is a major contributor of sound transmission to other areas.

**Acoustiblok All Weather Sound Panels**

Several panel installation methods are available:

- Install between standard 3" (76 mm) I-beams or T-beams
- Bolt together or use stainless steel wire ties for self-supporting installations
- Fasten through mounting eyelets to wall surface
- Hang from mounting eyelets in frame

Before installing, examine substrates and conditions for compliance with requirements and installation tolerances. Proceed with installation only after all conditions are satisfactory.

The sound absorbing side of the panel is the perforated aluminum side. This side is always installed facing the noise source.

**BUILDING CODES**

Current data on product compliance with building code standards can be obtained from Acoustiblok technical support specialists.



Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

**6. Availability & Cost****AVAILABILITY**

Acoustiblok products are available internationally.

**COST**

Cost information may be obtained from the manufacturer or an Acoustiblok distributor.

**7. Warranty**

Complete warranty terms and conditions are available from the manufacturer. For details, consult Acoustiblok, Inc.

**8. Maintenance**

No specific care or maintenance is required for properly installed products.

**9. Technical Services**

Detailed information, product literature, test results, project lists, assistance in preparing project specifications and arrangements for application supervision are available through Acoustiblok, Inc.

**10. Filing Systems**

- MANU-SPEC®
- Additional product information is available from the manufacturer upon request

## A few amazing facts about Acoustiblok®

A standard metal stud 5/8-inch gypsum board wall with only one layer of 16 oz. Acoustiblok has better sound reduction, (STC 53\*, Riverbank Laboratories), than a solid 12-inch poured concrete wall (STC 51).

Lead, no longer permitted in construction, was the best sound-isolating performance per weight material with a Sound Transmission Class (STC) of 26 @ 16 link oz. sq. ft. Acoustiblok 16 oz. material not only has a minimum STC of 26 (Riverbank Labs), but is environmentally friendly and is U.L. classified & approved for public or commercial construction.

A standard 2 x 4 wall with 5/8-inch gypsum has a STC of 36. Adding only one layer of Acoustiblok provides an impressive STC of 52! (To the human ear this represents an approximate 80-percent reduction). With 2 layers of Acoustiblok, STC can be in the 60s, depending on wall configuration.

Not only can Acoustiblok be sold as an added feature in high rise construction, it is usually less expensive and easier to install than other types of sound abatement wall construction. Acoustiblok also allows easier accessibility to the interior of the wall for electrical & plumbing maintenance.

Acoustiblok was recently awarded first place in the British House of Commons, for best sound abatement product of the year.

References from:

Underwriters Laboratories  
Riverbank Audio Laboratories  
Architectural Acoustics - M. David Egan  
California Office of Noise Control

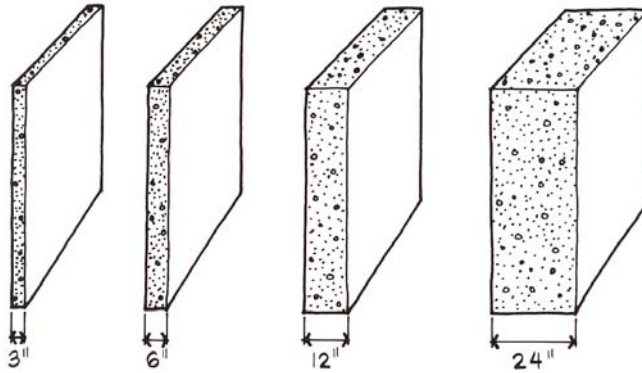
NOTE: Our U.L. Classification number is R21490, (which will specify all U.L. approved uses on U.L. website.) Our audio specifications (STC, NRC) are independent laboratory test results by Riverbank Acoustical Laboratories. Don't put your project at risk by relying on uncontrolled vendor "field test" or self test results -- ask for a certified lab report.

Do not rely on the "U.L. 94" flame test standard, which "...tests for flammability of plastic materials used for parts in devices and appliances." Underwriters Laboratories specifically states, "**These requirements do not cover plastics when used as materials for building construction or finishing.**"

- STC = "Sound Transmission Class", the higher the better for noise abatement.

## Sound Transmission Loss (TL) IMPROVEMENT FROM INCREASING WEIGHT

The figure below shows the Sound Transmission Class (STC) ratings for 3-in-thick dense concrete (12 lb/ft<sup>2</sup> per inch of thickness) and for three successive doubled thicknesses of 6 in, 12 in, and 24 in.



Weight ( lb/ft <sup>2</sup> ) :	36	72	<b>144</b>	288
STC Rating:	42	46	<b>51</b>	58

**STC comparison with 12" solid concrete wall:**

**Wood 2x4 / Gypsum with 16 oz Acoustiblok = 52 (Riverbank Labs)**

Mass law follows the law of diminishing returns. As shown by the above data, the STC of a homogeneous construction increases about 5 for each doubling of weight. However, **it is the initial doubling that provides the most practical improvement. Each successive doubling produces proportionally less STC (or TL) improvement per unit weight and a greater increase in cost per unit STC (or TL) increase. Consequently, complex constructions are required when it is necessary to achieve high STCs and TL improvements, especially at low frequencies.**

From *Architectural Acoustics* by M. David Egan © McGraw-Hill Inc ISBN 0-07-019111-5  
*Emphasis added by Acoustiblok, gray field is our comment*

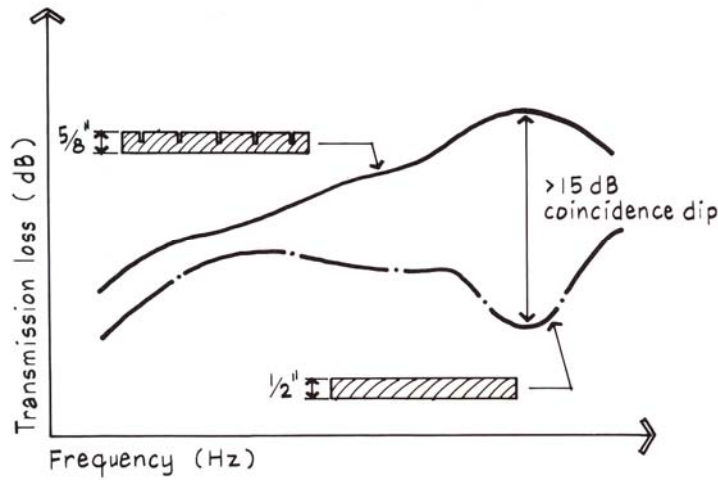
**Effectiveness of STC Ratings:** The following chart estimates what sound privacy various STC levels provide.

STC	PRIVACY AFFORDED
25	Normal speech easily understood
30	Normal speech audible, but unintelligible
35	Loud speech understood
40	Loud speech audible, but unintelligible
45	Loud speech barely audible
50	Shouting barely audible
55	Shouting not audible

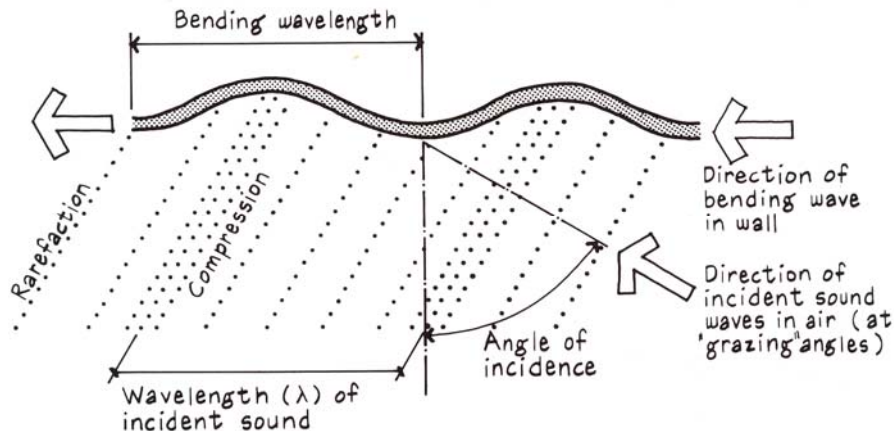
Source: U.S. Dept. of Commerce / National Bureau of Standards. Handbook 119, July, 1976: *Quieting: A Practical Guide to Noise Control*; Page 61

## EFFECT OF STIFFNESS ON TL

The sound isolation efficiency of materials depends on stiffness as well as mass. For example, the graph below shows TL performance for two plywood layers of equivalent total weight. According to the mass law, the TL performance should be the same. **However, the grooved, less stiff layer has much higher TL performance, especially at mid- and high frequencies.**



As shown by the above graph, the coincidence dip can be greater than 15 dB for stiff materials. **This significant difference in TL is caused by the altered response to bending waves, which are excited by the impinging sound energy.** Bending waves are similar to the wave motion in a rope shaken at one end. The exaggerated sketch below shows bending-wave coincidence for a wall.

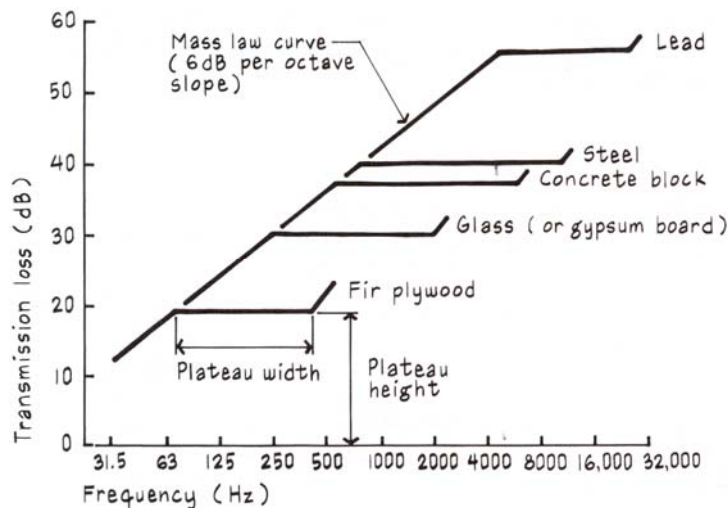


To achieve high TL performance, use double-wall constructions with wide separation between layers, **light-gauge metal studs instead of wood studs**, or metal channels to "resiliently" support gypsum board layers. These elements, if properly installed, can **reduce the stiffness of a barrier. The ideal sound-isolating construction would be heavy, limp, and airtight!** (Acoustiblok is "heavy, flexible, and airtight"!)

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## Transmission Loss (TL) FOR SINGLE WALLS

The graph below shows transmission loss performance based on equal surface weight for several materials. The curve describing TL performance for most single (or homogeneous) walls consists of three basic parts: the low frequency mass-controlled region at about 6 dB per octave slope; the plateau region of relatively constant TL which depends on bending stiffness and internal damping of the material; and the critical frequency (and mass controlled) region above the plateau, usually at 10 dB per octave slope. Consequently, high-frequency hissing or whistling sounds can be isolated by a material which allows low-frequency rumbling sounds to be easily transmitted.



**The stiffer a wall, the lower the plateau height, meaning the poorer the sound-isolating performance**  
**Conversely, the limper a material, the higher the plateau height and the better the sound-isolating performance.** As shown by the curves, **lead has the highest plateau height and the best sound-isolating performance on an equivalent weight basis.** The more damping a wall has (i.e. energy loss from internal friction), the narrower the plateau width, resulting in **better sound-isolating performance.** Notice that plywood and lead have far narrower plateau widths than steel. When plywood is struck, it "thuds" because of its internal damping. When steel is struck, it "rings" because it has far less internal damping. For example, sheet metal air-conditioning ducts are poor isolators of sound and, as a consequence, often must be enclosed by gypsum board when they pass through noisy areas (see Chap. 5).

The TL at 500 Hz of homogeneous materials can be estimated by the formula:

$$TL = 20 + 20 \log G, \text{ where } TL = \text{transmission loss at 500 Hz (dB), and } G = \text{surface density (lb/ft}^2\text{)}$$

Surface densities for common building materials are: brick at 10 lb/ft<sup>2</sup> per inch of thickness, concrete block at 6 to 12 lb/ft<sup>2</sup> per inch, plywood at 3 lb/ft<sup>2</sup> per inch, and plaster at 9 lb/ft<sup>2</sup> per inch.

**Acoustiblok, at 1.1 lbs/ft<sup>2</sup>, does far better than any of the above, including (unusable) lead.**

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*Emphasis added by Acoustiblok, gray field is our comment*



## INDEPENDENT LAB TEST RESULTS OF STC RATINGS FOR WALL ASSEMBLIES

<b>Without Acoustiblok</b>	<b>STC</b>
<u>Wood Stud</u>	
• Standard 2 x 4 wood stud 24-inch O.C. with 5/8 gypsum both sides	<b>36</b>
• Staggered 2 x 4 wood studs 24-inch O.C. on 2 x 6 plate, with 5/8-inch gypsum both sides	<b>39</b>
• Standard 2 x 4 wood stud, 16-inch O.C. with 5/8 gypsum, and resilient channel	<b>45</b>
<u>Metal Stud</u>	
• Standard 3-5/8-inch metal stud wall	<b>43</b>
<u>Concrete</u>	
• 12-inch poured concrete wall	<b>51</b>
<b>With Acoustiblok</b>	<b>STC</b>
<u>Wood Stud</u>	
• Standard 2 x 4 wood stud, 5/8-inch gypsum, with one layer of 16 oz. Acoustiblok and 3-inches of loose fiberglass insulation	<b>52</b>
• Standard staggered wood stud, 5/8-inch gypsum, one layer of 16 oz Acoustiblok	<b>57</b>
• Double 3-5/8-inch wood stud, 5/8-inch gypsum, two layers of 16 oz Acoustiblok and 2 layers of 6-inches of fiberglass insulation	<b>61</b>
<u>Metal Stud</u>	
• Standard metal stud, 5/8-inch gypsum, one layer of 16 oz Acoustiblok	<b>53</b>
• Standard metal stud, 5/8-inch gypsum, two layers of 16 oz Acoustiblok	<b>57</b>
• Double 3-5/8-inch metal stud, 5/8 gypsum, two layers of 16 oz Acoustiblok and 2 layers of 6-inch fiberglass insulation	<b>66</b>
<u>Concrete</u>	
• 8-inch concrete block wall with a 3-5/8-inch metal stud, 5/8-inch gypsum, one layer of 16 oz Acoustiblok on one side of the block wall	<b>71</b>
• 8-inch concrete block wall with a 3-5/8" metal stud, 5/8-inch gypsum, one layer of 16 oz Acoustiblok on each side of the block wall	<b>85</b>