

Gold Bond® BRAND

SoundBreak® XP® Gypsum Board



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Market Trends Driving The Need For Higher Rated STC Wall Partitions

Increasing land costs have resulted in larger amounts of high density multi-family housing in a growing number of United States housing markets. The result of high density housing is individual living units positioned closer together than traditional single-family housing.

Home theatre systems are becoming more prevalent in use and sophistication, resulting in the potential for more noise being transmitted between wall partitions. Commercial buildings such as schools, hospitals, hotels and government/military facilities also have an increasing need to control sound between areas of a building.

All of these changing market dynamics have resulted in an increased need for higher rated Sound Transmission Class (STC) wall partitions, which reduce the transmission of airborne sound between living spaces within buildings.

Gold Bond® BRAND SoundBreak® XP® Gypsum Board

Gold Bond® BRAND SoundBreak XP Gypsum Board is an acoustically enhanced gypsum board used in the construction of high STC wall assemblies. This innovative gypsum board allows for construction of high STC wall assemblies that are thinner, cost effective and more reliable than traditional methods for constructing these types of assemblies.

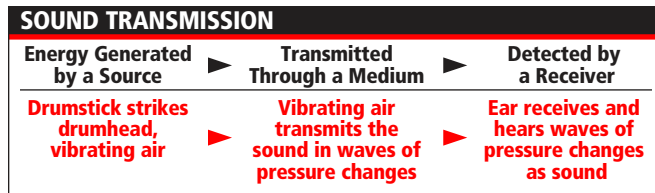
SoundBreak XP Gypsum Board allows for construction of higher STC area separation walls.

Key Acoustical Terms and Concepts

Airborne Sound

Airborne sound consists of energy generated by a source, transmitted through a medium, and detected by a receiver. All three of these conditions must be in place or airborne sound cannot exist. The following chart describes what happens when a drumstick strikes a drumhead.

The level of airborne sound is determined by the intensity of the vibration. Frequencies between 20 Hz and 20,000 Hz are detectable by children. Most humans are sensitive to the range of 100 Hz to 5000 Hz. Speech and other traditional sounds within a building range from 125 Hz – 4,000 Hz, which is the frequency range considered when calculating STC.



Sound Transmission Class

The Sound Transmission Class (STC) is a single number rating of the effectiveness of a material or construction assembly to retard the transmission of airborne sound. STC provides an indication of how loud transmitted sound is perceived by the listener. Higher STC values are more effective for reducing sound transmission.

STC values are derived by conducting a test according to a procedure outlined in ASTM E 90 *Standard*

Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions. The test data collected would be analyzed using ASTM E 413 Classification for Rating Sound Insulation and result in a single-number acoustical rating. The rating assesses the airborne sound transmission performance at a range of frequencies from 125 Hz to 4000 Hz, which is consistent with the frequency range of speech.

What is an Acceptable STC Rating for a Wall Partition?

National Research Council of Canada Survey

- 600 multi-family residences (300 party walls between them)
- Residents with lower STC rated walls are more likely to:
 - Want to move
 - Be awakened by noises
 - Have trouble falling asleep due to noises
 - Think neighbors are less considerate

General survey conclusions

- STC ≥55 A realistic goal for acceptable sound insulation
- STC ≥60 More ideal, would practically eliminate negative effects of noises from neighbors
- Music related sounds may require the highest rated walls

J. S. Bradley, Deriving Acceptable Values for Party Wall Sound Insulation survey results

Decibel

Decibels (dB) are used in acoustics to provide relative measurement of sound level. Higher dB levels relate to loud sounds while lower dB levels relate to quiet sounds. A change of 3 dB would be barely noticeable to

most human's ears, while a change of 5 dB would generally be noticeable to most people. An increase of 10 dB would sound twice as loud and a decrease of 10 dB would sound half as loud.

RATING	ACTIVITY	SOUND LEVEL (dB)
Painful	Jet Engine	120+
Very Loud	Industrial Machinery	100
Loud	Stock Trader Floor	80
Moderate	Normal Speech	65
Quiet	Suburban Home	45
Very Quiet	Barely Audible	25

HUMAN SENSITIVITY TO CHANGES IN SOUND INTENSITY LEVELS	
1 dB	Generally not perceptible
3 dB	Just perceptible
5 dB	Clearly noticeable
10 dB	Twice or half as loud
20 dB	Four times as loud or 1/4 as loud

Design Considerations in Acoustical Wall Partitions

The goal of a high rated STC wall partition is to decrease the amount of sound transmission through the partition. The following five variables can have an impact on the ability of the partition to provide this loss.

Mass

Increasing the mass of a wall partition increases the amount of sound transmission loss. Increasing mass in a cost and space effective way can be a challenge.

Stiffness

Increasing the stiffness of a wall partition will decrease the amount of sound transmission loss. For that reason metal studs outperform wood studs, and 24" o.c. framing spacing outperforms 16" o.c. framing spacing.

Damping

Introduction of damping will increase the amount of sound transmission loss. In particular, constrained layer damping can be effective for structure type applications.

Cavity Depth

Increasing the depth of the cavity of the partition can increase the amount of sound transmission loss, especially when the cavity is filled with acoustical insulation.

Cavity Absorption

Adding sound-absorbing material such as fiberglass or mineral fiber insulation to the cavity of a partition will increase the amount of sound transmission loss. The sound-absorbing material should completely fill the cavity but not be compacted or compressed in any way.

Gold Bond® BRAND

SoundBreak® XP® Gypsum Board

Description

Gold Bond® BRAND SoundBreak® XP® Gypsum Board has an acoustically enhanced, high density gypsum core encased in a heavy, abrasion and mold/mildew/ moisture resistant, 100% recycled, purple paper on both sides. Used in the construction of high rated STC wall assemblies, SoundBreak XP consists of a layer of viscoelastic damping polymer sandwiched between two pieces of high density mold resistant gypsum board, providing constrained layer damping.

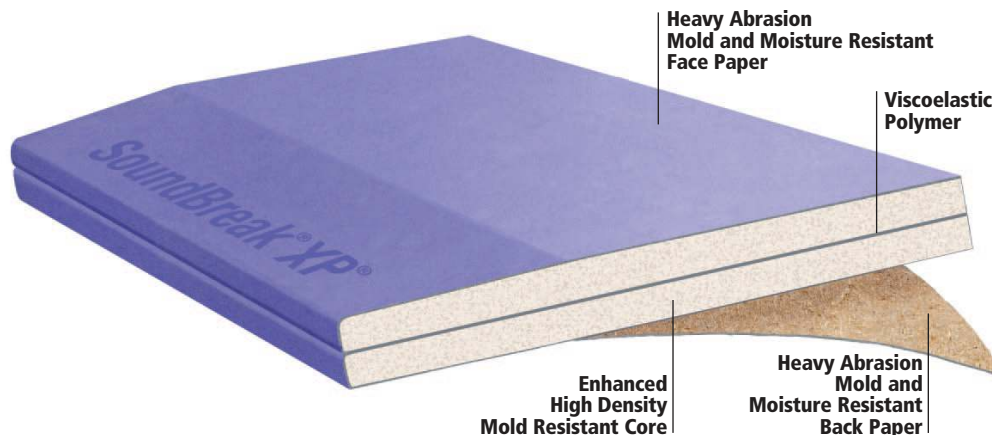
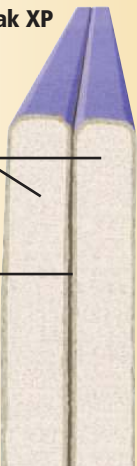
Basic Uses

For use as single-layer application or as a component of multi-layered wall assemblies where sound transmission between rooms or dwelling units is a concern.

How SoundBreak XP Gypsum Board Works

High density core provides increased mass

Viscoelastic polymer provides constrained layer damping



Features/Benefits

- Resists the growth of mold per ASTM G 21 with a score of 0, the best possible score.
- Resists the growth of mold per ASTM D 3273 with a score of 10, the best possible score.
- Use of SoundBreak XP Gypsum Board results in wall partitions with high rated STC values that are thinner than traditionally built high rated STC wall partitions providing increased usable floor space.
- Superior sound damping, cost-efficient material that is easily finished and decorated in the same manner as standard gypsum board.
- All SoundBreak XP Gypsum Board designs were tested by an independent third-party acoustical laboratory using the full-scale ASTM E90 test procedure.
- SoundBreak XP Gypsum Board is installed like traditional gypsum board, offering a more reliable and less complicated solution than alternative methods requiring clips and/or channels.
- SoundBreak XP Gypsum Board can be cut by scoring deeply from both sides of the board before snapping, or with the use of a hand or power saw.
- Heavy abrasion resistant paper and denser core provide greater resistance to surface abuse and indentation when tested in accordance with ASTM C 1629.
- Features a smooth, heavy face paper that is highly resistant to scuffing and provides a superior surface for decoration.
- 5/8" SoundBreak XP features a fire resistant Type X core and is UL Classified and approved for inclusion in specific UL fire-rated designs.
- SoundBreak XP Gypsum Board is GREENGUARD Children & SchoolsSM Certified for indoor air quality.
- Approved for use on walls and ceilings.
- SoundBreak XP Gypsum Board must be stored off the ground and under cover. Sufficient risers must be used to ensure support for the entire length of the gypsum board to prevent sagging.
- SoundBreak XP Gypsum Board must be kept dry to minimize the potential for mold growth. Adequate care should be taken while transporting, storing, applying and maintaining SoundBreak XP Gypsum Board. For additional information, refer to the Gypsum Association publication, "Guidelines for the Prevention of Mold Growth on Gypsum Board" (GA-238-03), which is available at gypsum.org under the "Download Free Gypsum Association Publications" section.
- Exposure to excessive or continuous moisture and extreme temperatures should be avoided. SoundBreak XP Gypsum Board is not recommended where it will be exposed to temperatures exceeding 125°F (52°C) for extended periods of time.
- Installing SoundBreak XP Gypsum Board panels over an insulating blanket, installed continuously across the face of the framing members, is not recommended. Blankets should be recessed and flanges attached to the sides of the studs.

Accessories

(See Installation Recommendations)

- Fasteners: Drywall Screws or Nails
- Joint Tape
- Joint Compound
- Cornerbead
- Trims
- Casing Beads
- Acoustical Sealant
- Acoustical Putty Pads

Installation

Applicable Standards and References

ASTM C 840
 Gypsum Association GA-216
 Gypsum Association GA-214
 National Gypsum
Gypsum Construction Guide

Recommendations

Installation of SoundBreak XP Gypsum Board should be consistent with methods described in the standards and references noted.

GUIDELINES FOR OPTIMUM PERFORMANCE AND SOUND REDUCTION

- Stagger SoundBreak XP Gypsum Board joints from one side of the wall to the other.
- Allow a 1/4" gap along all wall perimeter edges and completely seal 1/4" gap with acoustical sealant or caulk.
- Refrain from wall penetrations when possible.
- Limit necessary wall penetrations to one per stud cavity.
- Seal all penetrations with acoustical sealant and/or putty pads.
- The use of SoundBreak XP Gypsum Board in actual installations may not produce the same results as were achieved in controlled, laboratory conditions.

Cutting SoundBreak XP Gypsum Board

- SoundBreak XP Gypsum Board can be cut by scoring deeply from both sides of the board before snapping, or with the use of a hand or electric saw. Cutting across the 4' width may require use of a saw.

Acoustical Sealants and Putty Pads

- Use an acoustical sealant that is applied per ASTM C919, such as Grabber Acoustical Sealant GSCSF, STI SpecSeal Smoke N Sound Caulk, BOSS 824 Acoustical Sound Sealant or equivalent.
- Use a putty pad that has been tested per ASTM E90, such as STI SpecSeal SSP Putty Pads or BOSS 818 Fire-Rated Putty Pads or equivalent.

Decoration

For best painting results, all surfaces, including joint compound, should be clean, dust-free and not glossy. To improve fastener and joint concealment, a coat of a quality drywall primer is recommended to equalize the porosities between surface paper and joint compound.

The selection of a paint to give the specified or desired finished characteristics is the responsibility of the architect or contractor.

SoundBreak XP Gypsum Board that is to have a wall covering applied should be prepared and primed as described for painting.

Gypsum Association GA-214, Recommended *Specification for Levels of Gypsum Board Finish*, should be referred to in order to determine the level of finishing required to ensure a properly prepared surface that accepts the desired decoration.

Technical Data

Fire Resistance Ratings

Fire resistance ratings represent the results of tests on assemblies in a specific configuration. When selecting construction designs to meet certain fire resistance requirements, caution must be used to ensure that each component of the assembly is the one specified in the test. Further precautions should be taken that assembly procedures are in accordance with those of the tested assembly. For copies of specific tests, call 1-800-NATIONAL. For fire safety information, go to nationalgypsum.com.

5/8" SoundBreak XP can be used as a substitute for Type X gypsum board in some proprietary fire-rated assemblies.

As an option, 1/2" SoundBreak XP may be used as an additional layer on one or both sides of fire-rated wall assemblies. 1/2" SoundBreak XP cannot be used as a substitute for 5/8" Type X gypsum board in a fire-rated assembly.

SoundBreak XP shall be attached in accordance with manufacturer's recommendations. When SoundBreak XP is installed between the framing

and the UL Classified gypsum board, the UL Classified gypsum board layer(s) required for the design is/are to be installed as indicated in the design as to fastener type and spacing, except that the required fastener length shall be increased by a minimum of 5/8".

Mold and Mildew Resistance*

SoundBreak XP Gypsum Board was designed to provide extra protection against mold and mildew compared to standard gypsum board products. When tested by an independent laboratory, SoundBreak XP received the highest possible ratings on ASTM G 21 and ASTM D 3273.

The use of SoundBreak XP in actual installations may not produce the same results as were achieved in controlled laboratory conditions.

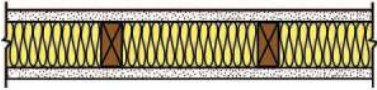

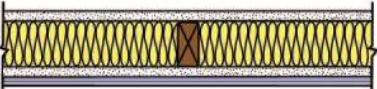
*No material can be considered "mold-proof," nor is it certain that any material will resist mold or mildew indefinitely. When used in conjunction with good design, handling, and construction practices, SoundBreak XP Gypsum Board can provide increased mold resistance versus standard gypsum board products. As with any building material, avoiding water exposure during handling, storage and installation, and after installation is complete, is the best way to avoid the formation of mold or mildew.

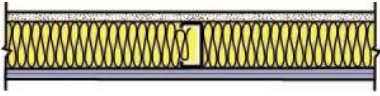
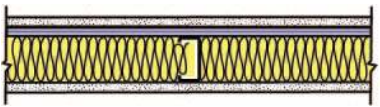
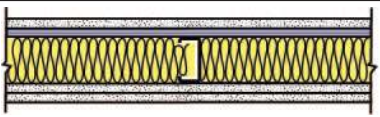
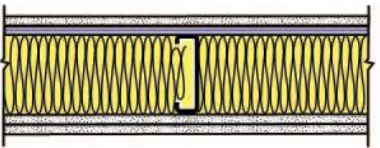
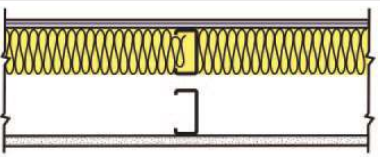
PHYSICAL PROPERTIES		
	1/2" Regular (12.7 mm)	5/8" Type X (15.9 mm)
Thickness, nominal	1/2" Regular (12.7 mm)	5/8" Type X (15.9 mm)
Width, nominal	4' (1219 mm)	4' (1219 mm)
Length, standard*	8' through 12' (2438 mm – 3657 mm)	8' through 12' (2438 mm – 3657 mm)
Weight, lbs./sq. ft., nominal	2.3	2.7
Edges	Tapered	Tapered
Surface Burning Characteristics (per ASTM E 84)	Flame spread: 15 Smoke developed: 0	Flame spread: 15 Smoke developed: 0
Surface Abrasion Resistance (per ASTM C 1629)	Level 3	Level 3
Indentation Resistance (per ASTM C 1629)	Level 1	Level 1
Soft Body Impact Resistance (per ASTM C 1629)	Level 1	Level 1

* Special lengths may be available. Consult your sales representative for more information.

APPLICABLE STANDARDS AND REFERENCES
ASTM C 1396
ASTM C 1629
ASTM C 840
ASTM D 3273
ASTM G 21
Gypsum Association GA-216
Gypsum Association GA-214

SoundBreak® XP® Gypsum Board Acoustical Selector Guide

1/2" REGULAR GYPSUM BOARD PARTITIONS – WOOD FRAMING						
Description					Test No.	STC
SINGLE LAYER – 2X4 STUDS						
	1/2" Regular Gypsum Board vertically applied to each side of 2x4 studs 16" o.c. with 1-1/4" type W screws 12" o.c. Joints staggered on opposite side. 3" glass fiber insulation in stud cavity.				NBC-W1b	34
1/2" SOUNDBREAK XP® GYPSUM BOARD PARTITIONS – WOOD FRAMING						
Description					Test No.	STC
SINGLE LAYER – 2X4 STUDS						
	1/2" SoundBreak XP Gypsum Board vertically applied to one side of 2x4 studs 24" o.c. with 1-1/4" type W screws 12" o.c. 1/2" Gold Bond Gypsum Board vertically applied to opposite side with 1-1/4" type W screws 12" o.c. Joints staggered on opposite side. 3" glass fiber insulation in stud cavity.				NGC 2009027	49
UNBALANCED – 2X4 STUDS						
	Base layer of 1/2" Gold Bond Gypsum Board vertically applied to one side of 2x4 studs 24" o.c. with 1-1/4" type W screws 24" o.c. Face layer of 1/2" SoundBreak XP Gypsum Board vertically applied with 1-5/8" type W screws 12" o.c. 1/2" Gold Bond Gypsum Board vertically to opposite side with 1-1/4" type W screws 12" o.c. Joints staggered each layer and opposite sides. 3" glass fiber insulation in stud cavity.				NGC 2009028	51
5/8" SOUNDBREAK XP® GYPSUM BOARD PARTITIONS – WOOD FRAMING						
Fire Rating	Ref.	Design No.	Description	Test No.	STC	
SINGLE LAYER – 2X4 STUDS						
1 hr.	UL	U309	5/8" SoundBreak XP Gypsum Board vertically applied to each side of 2x4 studs spaced 24" o.c. with 1-1/4" type W screws 12" o.c. 3-1/2" glass fiber in stud cavity.	RAL TL-07-145	53	
UNBALANCED STAGGERED – 2X4 STUDS						
1 hr.	GA	Based on WP3514	Base layer 5/8" Fire-Shield Gypsum Board vertically applied to staggered 2x4 studs spaced 16" o.c. on 2x6 plates with 1-1/4" type W screws 12" o.c. Face layer of 5/8" SoundBreak XP vertically applied with 2" type W screws 16" o.c. 5/8" Fire-Shield Gypsum Board vertically applied to opposite side with 1-1/4" type W screws 12" o.c. Vertical joints staggered 16" each layer and opposite sides. 2-1/2" glass fiber in stud cavity.	RAL TL-07-170	60	
UNBALANCED DOUBLE ROW – 2X4 STUDS						
1 hr.	GA	Based on WP3514	Base layer 5/8" Fire-Shield Gypsum Board vertically applied to double row of 2x4 studs spaced 16" o.c. on separate plates with 1-1/4" type W screws 12" o.c. Face layer of 5/8" SoundBreak XP vertically applied with 2" type W screws 16" o.c. 5/8" Fire-Shield Gypsum Board vertically applied to opposite side with 1-1/4" type W screws 12" o.c. Vertical joints staggered 16" each layer and opposite sides. 3-1/2" glass fiber in stud cavity.	RAL TL-07-147	64	
H-STUD AREA SEPARATION WALL						
2 hr.	UL	U347	Two layers of 1" Fire-Shield Shaftliner inserted in 2"H-studs spaced 24" o.c. Minimum 3/4" air space between shaftliner and adjacent construction. 5/8" SoundBreak XP Gypsum Board vertically applied to outside of 2x4 studs spaced 16" o.c. with 1-1/4" type W screws 12" o.c. 3-1/2" glass fiber in stud cavity.	NRCC B-3451.1	67	

5/8" SOUNDBREAK XP® GYPSUM BOARD PARTITIONS – STEEL FRAMING						
Fire Rating		Ref.	Design No.	Description	Test No.	STC
SINGLE LAYER – 3-5/8" STUDS						
1 hr.		UL	U465	5/8" SoundBreak XP Gypsum Board vertically applied to one side of 3-5/8" steel studs spaced 24" o.c. with 1" type S screws 8" o.c. at perimeter and 12" o.c. in the field. 5/8" Fire-Shield Gypsum Board vertically applied to opposite side with 1" type S screws 8" o.c. at perimeter and 12" o.c. in the field. Joints staggered on opposite side. 3-1/2" glass fiber in stud cavity.	RAL TL-07-389	58
UNBALANCED – 3-5/8" STUDS						
1 hr.		UL	U465	Base layer 5/8" SoundBreak XP Gypsum Board vertically applied to 3-5/8" steel studs spaced 24" o.c. with 1" type S screws 24" o.c. Face layer 5/8" Fire-Shield Gypsum Board vertically applied with 1-5/8" type S screws 12" o.c. 5/8" Fire-Shield Gypsum Board vertically applied to opposite side with 1" type S screws 12" o.c. Vertical joints staggered 24" each layer and opposite sides. 3-1/2" glass fiber in stud cavity.	RAL TL-06-334	57
DOUBLE LAYER – 3-5/8" STUDS						
2 hr.		UL	V484	Base layer 5/8" SoundBreak XP Gypsum Board vertically applied to 3-5/8" steel studs spaced 24" o.c. with 1" type S screws 24" o.c. Face layer 5/8" Fire-Shield Gypsum Board vertically applied with 1-5/8" type S screws 12" o.c. Two layers 5/8" Fire-Shield Gypsum Board vertically applied to opposite side. Base layer attached with 1" type S screws 24" o.c. Face layer attached with 1-5/8" type S screws 12" o.c. Vertical joints staggered 24" each layer and opposite sides. 3-1/2" glass fiber in stud cavity.	RAL TL-07-168	60
DOUBLE LAYER – 6" STUDS						
2 hr.		UL	V484	Base layer 5/8" SoundBreak XP Gypsum Board vertically applied to 6" steel studs spaced 24" o.c. with 1" type S screws 24" o.c. Face layer 5/8" Fire-Shield Gypsum Board vertically applied with 1-5/8" type S screws 12" o.c. Two layers 5/8" Fire-Shield Gypsum Board vertically applied to opposite side. Base layer attached with 1" type S screws 24" o.c. Face layer attached with 1-5/8" type S screws 12" o.c. Vertical joints staggered 24" each layer and opposite sides. 6" glass fiber in stud cavity.	NRCC B-3456.2	63
SINGLE LAYER DOUBLE ROW – 2-1/2" STUDS						
1 hr.		UL	V488	5/8" SoundBreak XP Gypsum Board applied vertically to double row of 2-1/2" steel studs 24" o.c. with 1" type S screws 8" o.c. at perimeter and 12" o.c. in the field. 5/8" Fire-Shield Gypsum Board applied vertically to opposite side with 1" type S screws 8" o.c. at perimeter and 12" o.c. in the field. Joints staggered on opposite side. 3" glass fiber or mineral wool insulation in stud cavity.	NGC 2008036	59

Note: In multi-layer systems, SoundBreak XP Gypsum Board can be used as either a face layer or a base layer without affecting the STC rating.

UL Listed Assemblies

The 5/8" SoundBreak XP Gypsum Board is tested in accordance with ASTM Standard E 119 and is classified as Type X for use in the following UL listings:

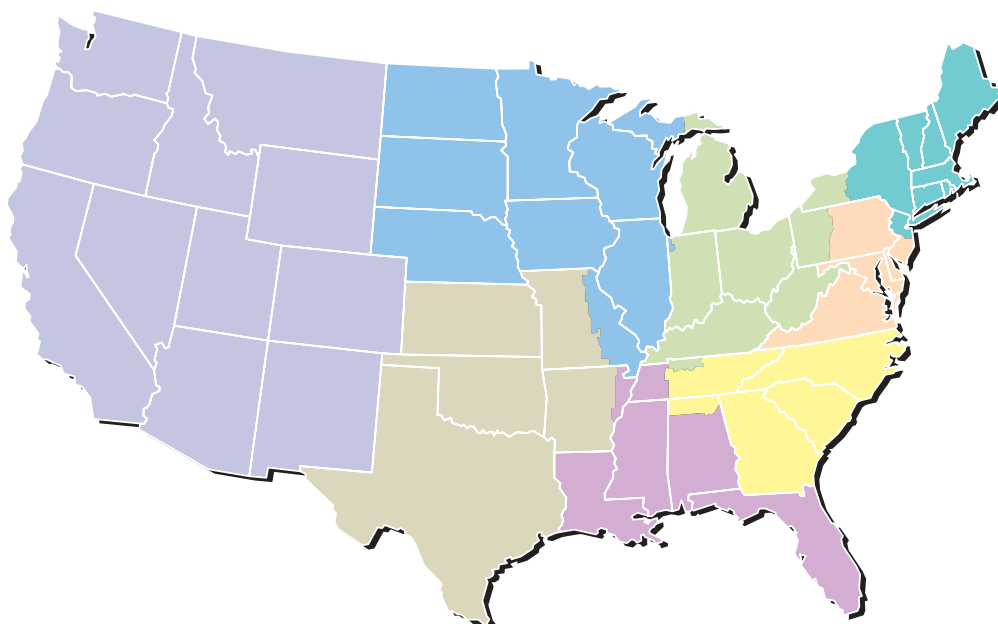
- U017, U301, U302, U305, U309, U326, U330, U332, U338, U339, U341, U342, U351, U354, U355, U356, U357, U358, U360, U364, U368, U369, U371, U379, U392,

- U405, U411, U418, U420, U425, U428, U429, U434, U439, U449, U450, U460, U465, U466, U475, U487, U494, U499, U505, U524, U525, U531, U646, U647, U648, U649, U651, U652, U926, V408, V415, V419, V420, V421, V425, V430, V432, V433, V434, V435, V438, V449, V450, V486, V483, V484, V488

UL Core Designation

5/8" SoundBreak XP Gypsum Board: SoundBreak XP

CUSTOMER SERVICE SALES AREAS



Atlantic Area

Phone: (800) 237-9167
Fax: (877) 252-0430

Central Area

Phone: (800) 252-1065
Fax: (866) 232-0440

Gulf Area

Phone: (800) 343-4893
Fax: (866) 482-8940

Midwest Area

Phone: (800) 323-1447
Fax: (866) 692-8590

Northeast Area

Phone: (800) 253-3161
Fax: (866) 632-1480

Southeast Area

Phone: (800) 548-9394
Fax: (866) 732-1990

Southwest Area

Phone: (800) 548-9396
Fax: (866) 792-7520

Western Area

Phone: (800) 824-4227
Fax: (800) 438-6266

National Accounts

Phone: (800) 440-1230
Fax: (866) 622-3590

Manufactured Housing

Phone: (800) 455-3185
Fax: (800) 639-1714

LIMITED WARRANTY AND REMEDIES

Products manufactured and sold by National Gypsum are warranted by National Gypsum to its customers to be free from defects in materials and workmanship at the time of shipment. THIS EXPRESS WARRANTY IS THE ONLY WARRANTY APPLICABLE TO SUCH PRODUCTS, AND IS IN LIEU OF AND EXCLUDES ALL OTHER EXPRESS ORAL OR WRITTEN WARRANTIES AND ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

National Gypsum will not be liable for any incidental, indirect or consequential losses, damages or expenses. The customer's exclusive remedy for any type of claim or action for defective products will be limited to the replacement of the products (in the form originally shipped) or, at National Gypsum's option, to a payment or credit not greater than the original purchase price of the products.

National Gypsum will not be liable for products claimed to be defective where the defect resulted from causes not within National Gypsum's control, or which arose or occurred after shipment, including but not limited to accidents, misuse, mishandling, improper installation, contamination or adulteration by other materials or goods, or abnormal conditions of temperature, moisture, dirt or corrosive matter.

Any claim that products sold by National Gypsum were defective or otherwise did not conform to the contract of sale is waived unless the customer submits it in writing to National Gypsum within thirty (30) days from the date the customer discovered or should have discovered the defect or nonconformance. No legal action or proceeding complaining of goods sold by National Gypsum may be brought by the customer more than one year after the date the customer discovered or should have discovered the defect or problem of which it complains.

Gold Bond® BRAND
SoundBreak® XP
Gypsum Board
soundbreakxp.info



PRODUCT
CERTIFIED FOR
LOW CHEMICAL
EMISSIONS:
UL.COM/GG
UL 2818

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