

Acoustical Assembly Guide



National 
Gypsum®

The Sound dB ook

These gypsum wallboard system details are intended solely as technical support incident to the sale and use of National Gypsum Company products. They may be used as a reference by architects, engineers, other design professionals, contractors, building code officials, or other competent construction industry trade personnel considering the selection, specification and use of National Gypsum Company products in these systems.

Architects, engineers, designers or contractors involved should review these details with the governing code or inspection official at the time of the job submittal to determine if there are any discrepancies with local code or regulatory requirements. In any event, they must NOT be used without a complete evaluation by the owner's design professional to verify the suitability of the system for a given application.

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These system performance details are the result of tests conducted in accordance with ASTM E90 under controlled laboratory conditions. Actual sound transmission loss of systems constructed in the field may vary from these performance details based upon many factors such as the actual field conditions, specific components used, and installation methods.

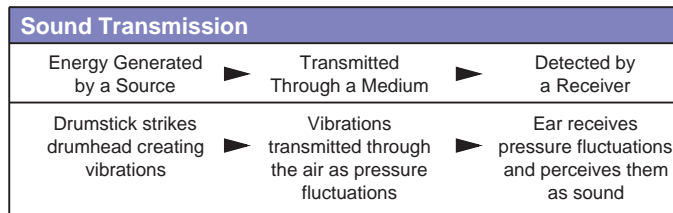
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Acoustical Terms and Concepts

Transmission of Airborne Sound

Airborne sound is acoustical energy generated by a source and transmitted by vibration through the air. The vibrations create sound pressure fluctuations that are detected by a receiver. Sound is characterized by its frequency, which determines the pitch of the sound, and by the intensity of the pressure fluctuations, which determines how loud the sound is perceived to be.



The frequency of sound refers to the number of sound pressure fluctuations or cycles that occur at a fixed point in one second. The unit of measure for frequency is the hertz (Hz), which is one cycle per second. The human auditory system is capable of detecting sound frequencies between 20 Hz and 20,000 Hz, but humans are typically most sensitive to sounds within the range of 125 Hz and 4,000 Hz. Sound frequency is perceived by humans as pitch. The lowest note on a piano has a frequency of 27.5 Hz, while the highest note on the piano is 4,186 Hz.

The intensity of sound, or loudness, is measured in decibels (dB). A quiet whisper might register at 20 dB, compared to about 60 dB for normal conversation, and 75 dB for loud singing. The decibel scale is logarithmic, not linear. A sound level change of 1 to 2 dB will be difficult to perceive while a change of 5 dB will be clearly noticeable. Sound is perceived to double in intensity for every 10 dB increase and quadruple for every 20 dB increase.

Human Sensitivity to Changes in Sound Intensity Levels	
1 dB	Generally not perceptible
3 dB	Just perceptible
5 dB	Clearly noticeable
10 dB	Twice as loud
20 dB	Four times as loud

Rating	Activity	Sound Level (dB)
Painful	Jet Engine	120+
Very Loud	Industrial Machinery	100
Loud	Stock Trading Floor	80
Moderate	Normal Speech	65
Quiet	Suburban Home	45
Very Quiet	Barely Audible	25

Sound Transmission Class

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

STC values are derived by conducting a test in accordance with ASTM E90, *Standard Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions*. The test data collected is analyzed using ASTM E413, *Classification for Rating Sound Insulation*, and results 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 the human ear. An STC rating of 50 has been designated as the minimum allowable design rating for unit-to-unit multifamily construction in the International Building Code.

Design Considerations for Acoustical Partitions

The goal of a high STC rated 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 attenuate the sound transmission.

Damping

Damping, or the ability to dissipate the vibrational energy produced by sound waves, reduces the amount of energy to pass through the partition.

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.

Mass

Increasing the mass of a partition increases the amount of material airborne sound waves must penetrate to reach the adjoining room and can be accomplished by installing multiple layers of gypsum board.

Cavity Absorption

Increasing the thickness of sound-absorbing material such as fiberglass or mineral fiber insulation in the cavity of a partition will increase the amount of sound transmission loss. The thickness of the insulation has a greater effect on sound transmission loss than the density.

Stiffness

Decreasing the stiffness of a partition will increase the amount of sound transmission loss. For this reason metal studs outperform wood studs, and framing that is 24" o.c. outperforms framing that is 16" o.c.

Acoustical Terms and Concepts

Constrained Layer Damping

A new approach in noise reduction is the concept of constrained layer damping, where a viscoelastic material is sandwiched between two stiffer materials. As a result, vibrations on either side of the constraining materials is dissipated by the polymer.

SoundBreak XP Family

The Gold Bond BRAND SoundBreak XP family of products incorporates this technology by inserting a viscoelastic polymer between two sheets of high-density gypsum board. The polymer absorbs and dissipates noise-producing vibrational energy by converting it into negligible heat.

SoundBreak XP products can be used alone or in conjunction with other sound reduction strategies for higher STC ratings. Because they can be installed and finished just like traditional gypsum board, requiring no additional labor or materials, it can be a cost-effective solution for reducing sound transmission.

SoundBreak XP products resist the growth of mold when tested in accordance with ASTM D3273 with a score of 10, the best possible score. Heavy abrasion resistant paper and a denser core provide greater resistance to surface abuse and indentation when tested in accordance with ASTM C1629.



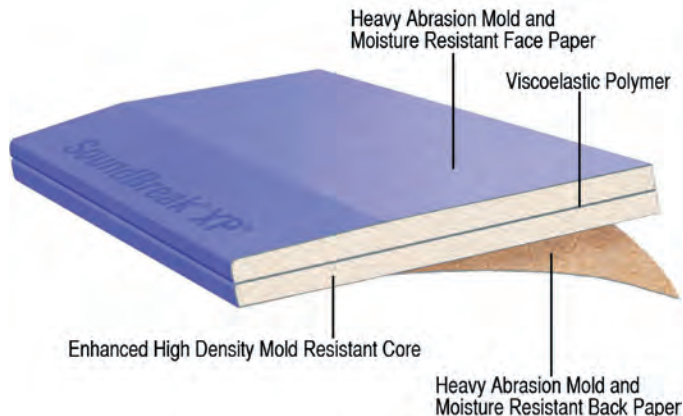
SoundBreak XP Wall Board is available in thicknesses of 1/2" or 5/8". 5/8" SoundBreak XP Wall Board features a fire-resistant Type X core and is UL classified. SoundBreak XP Wall board can be installed as the base layer or the face layer in multi-layer systems without affecting the STC. Use SoundBreak XP Wall board on wood or steel studs spaced 16 in. or 24 in. on center or on ceiling assemblies that do not require a fire rating or as an additional layer in a fire-rated, floor-ceiling assembly.



SoundBreak XP Ceiling Board is a 3/4" fire-resistant gypsum panel that is UL classified for use in specific floor-ceiling assemblies to provide a 1-hour fire rating.



SoundBreak XP Retrofit Board is a 5/16" high-density gypsum panel with a viscoelastic polymer adhered to the back paper for use over existing gypsum board partitions.



Guidelines for Optimum Performance and Sound Reduction

- Stagger gypsum board joints from one side of the partition to the other.
- Allow a 1/4" gap along all wall perimeter edges and completely seal 1/4" gap with acoustical sealant.
- Refrain from wall penetrations when possible.
- Limit necessary wall penetrations to one per stud cavity.
- Seal all penetrations with acoustical sealant or putty pads.

Ceiling Attenuation Class

Ceiling Attenuation Class (CAC) is a single number rating of the effectiveness of a ceiling system to reduce airborne sound transmission over a partition through a common plenum. Similar to Sound Transmission Class (STC), CAC is measured in decibels and provides an indication of how loud transmitted sound is perceived to be by the listener. A CAC value equal to the STC value of a partition helps mitigate the sound transmission over the partition when the partition terminates at a ceiling.

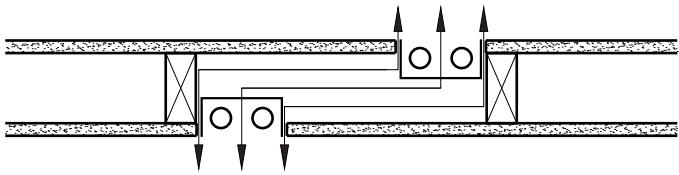
CAC sound tests are conducted in accordance with ASTM E1414, *Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum*. The test data collected is analyzed using ASTM E413, *Classification for Rating Sound Insulation*, and results in a single-number acoustical rating.

Impact Insulation Class

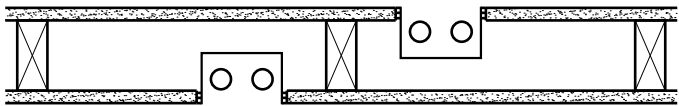
Impact Insulation Class (IIC) is a single-number rating system of the effectiveness of a floor system at reducing impact sounds such as foot traffic. Floor systems are tested with a tapping machine in accordance with ASTM E492, *Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine*. Data derived from the test is analyzed using ASTM E989, *Standard Classification for Determination of Single-Number Metrics for Impact Noise*, and results in a single number rating for the purpose of comparing the sound attenuation of various flooring systems.

Acoustical Terms and Concepts

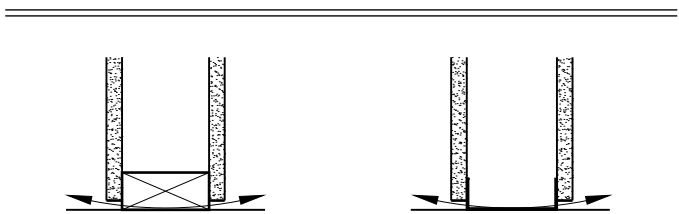
Sound Isolation Construction



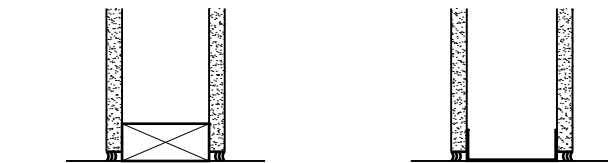
Arrows denote flanking paths for sound.



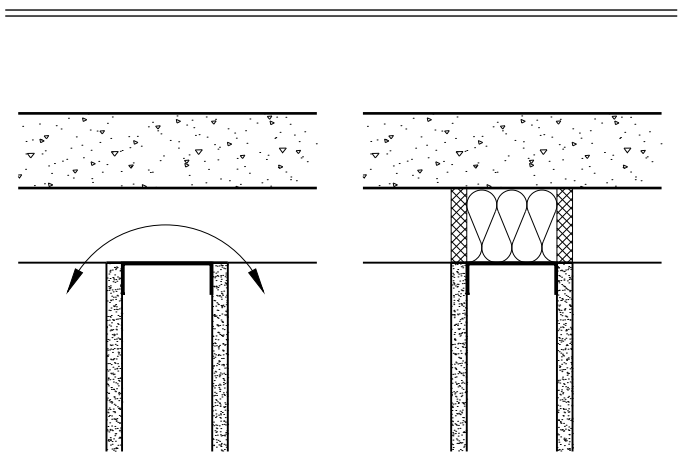
Electrical boxes offset one stud cavity and annular spaces sealed.



Arrows denote flanking paths for sound.



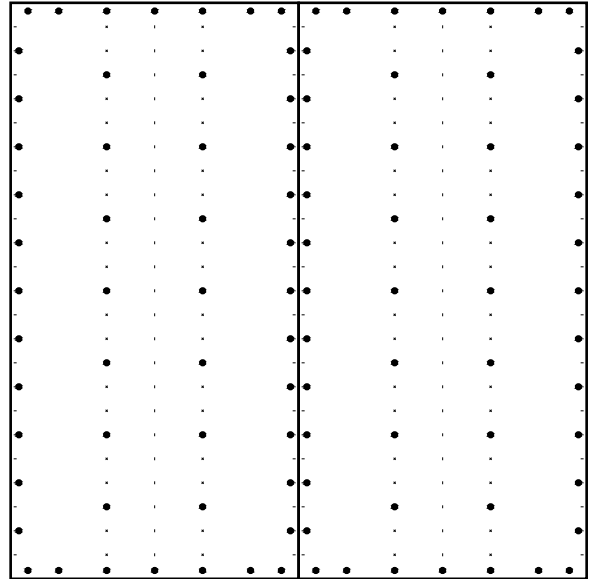
Perimeter of partition sealed.



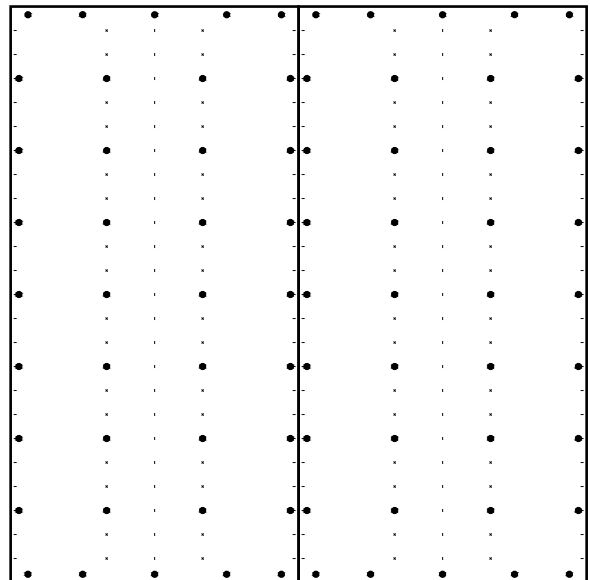
Arrows denote flanking paths for sound.

Flutes of metal deck insulated and sealed.

Increase the STC value of partitions by installing fewer fasteners using National Gypsum's MaX12 fastener pattern for 1-hour, single-layer, steel stud partitions. UL design V438 allows fasteners to be spaced 12" o.c. in the perimeter and field as opposed to 8" o.c. at the perimeter and 12" o.c. in the field for traditional 1-hour, steel stud partitions.



A traditional 8 ft. by 8 ft. 1-hour, steel stud partition requires 100 screws.



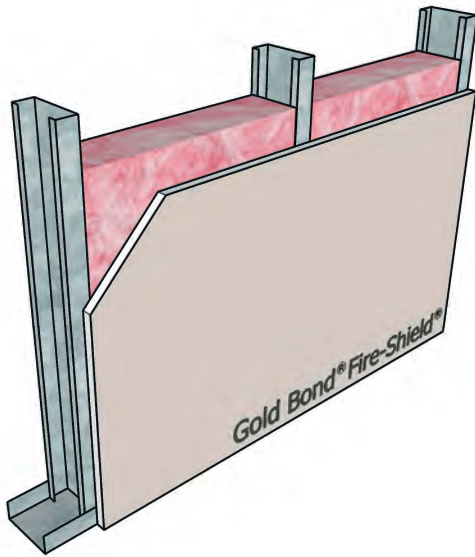
An 8 ft. by 8 ft. 1-hour, steel stud partition constructed with the MaX12 fastener pattern featured in UL design V438 only requires 76 screws.

Steel Stud Partitions
with Framing 16" o.c.



Steel Stud Partitions with Framing 16" o.c.

Figure 1



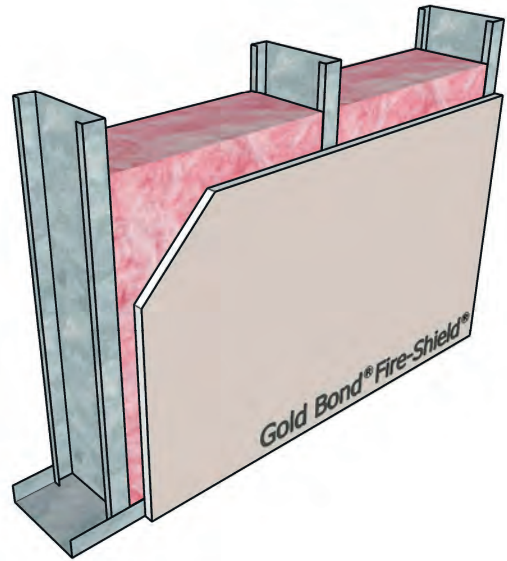
STC-34

NGC 2013012

Framing: 3-5/8" steel studs, 20 gauge (20 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: None
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: Not Rated

Figure 2



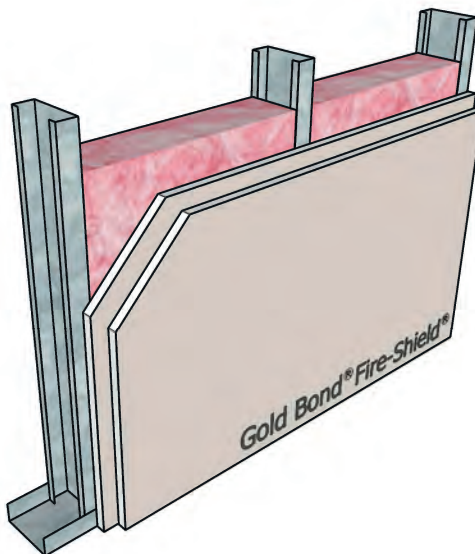
STC-37

NGC 2013021

Framing: 6" steel studs, 20 gauge (20 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: None
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: Not Rated

Figure 3



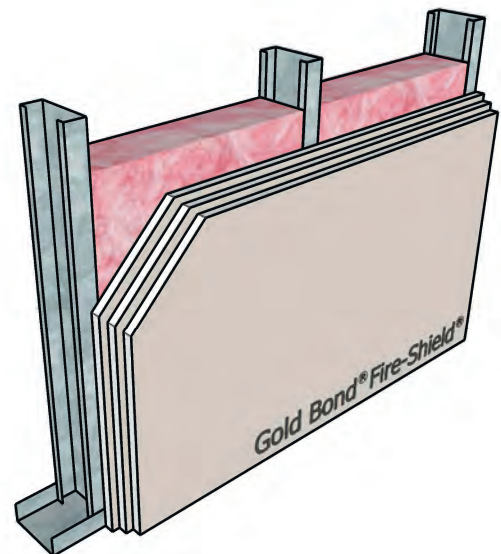
STC-38

NGC 2013013

Framing: 3-5/8" steel studs, 20 gauge (20 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: None
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V497 - 1 hour

Figure 4



STC-42

NGC 2018061

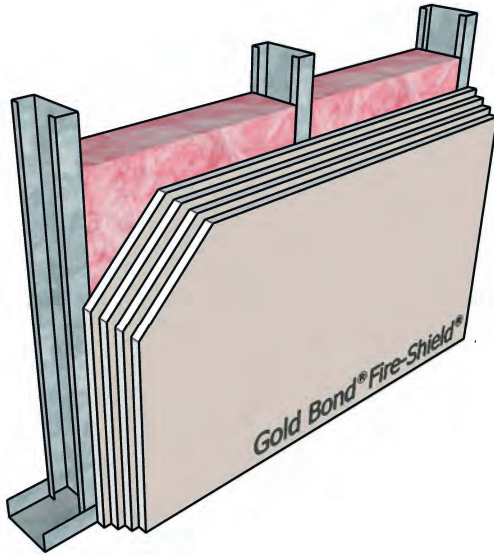
Framing: 3-5/8" steel studs, 20 gauge (19 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: None
 Side 2: 3 layers 5/8" Fire-Shield Gypsum Board

UL Design: V497 - 1 hour

Note: 25 gauge (15 mil) and 20 gauge (18 mil, 19 mil, and 20 mil) studs are equivalent gauge (EQ) studs.

Steel Stud Partitions with Framing 16" o.c.

Figure 5



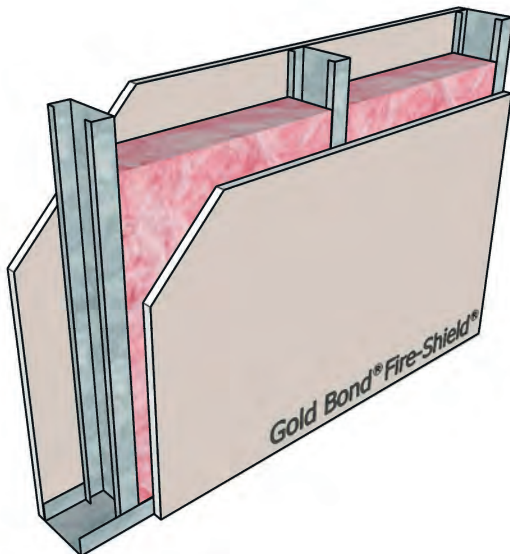
STC-44

NGC 2018059

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: None
 Side 2: 4 layers 5/8" Fire-Shield Gypsum Board

UL Design: V497 - 2 hour

Figure 7



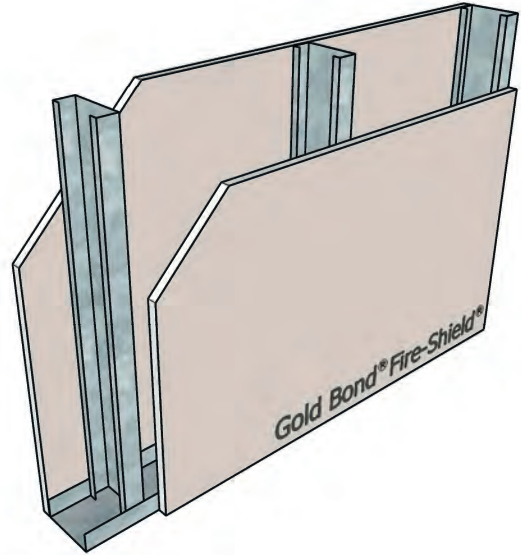
STC-48

NGC 2018107

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 16" o.c.
 Insulation: 2-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 6



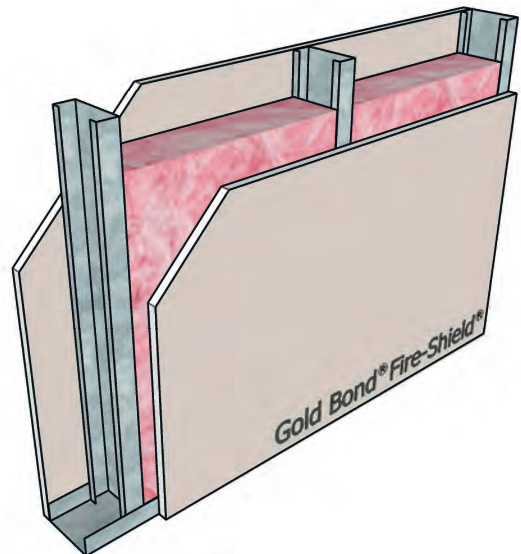
STC-40

NGC 2518

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 16" o.c.
 Insulation: None
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 8



STC-46

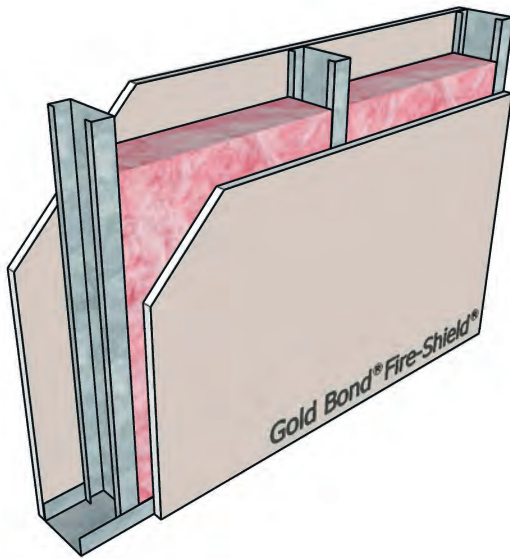
NGC 2018106

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 9



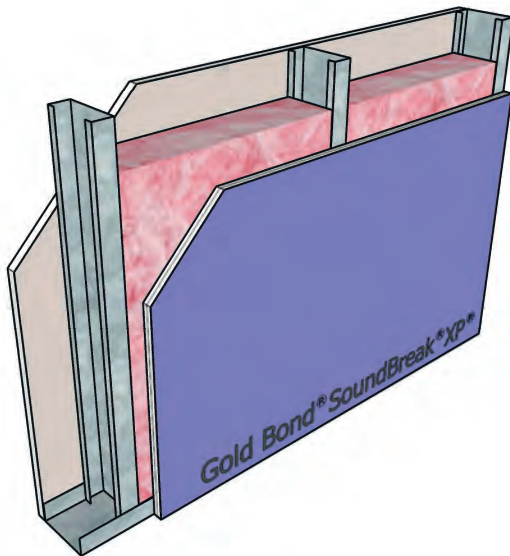
STC-40

NGC 2016074

Framing: 3-5/8" steel studs, 20 gauge (30 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 11



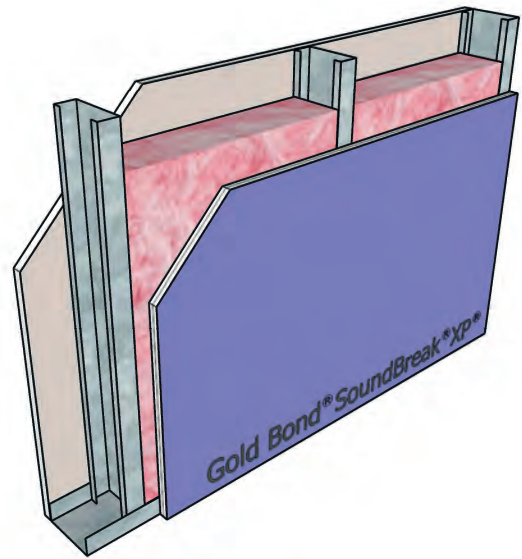
STC-48

NGC 2019057

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: V438, U465 - 1 hour

Figure 10



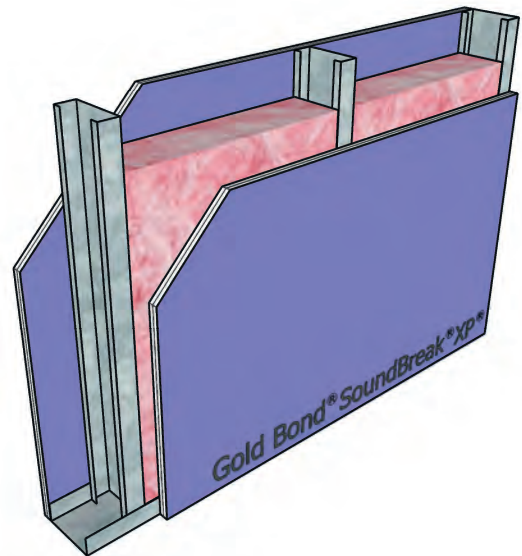
STC-49

NGC 2009058

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: V438, U465 - 1 hour

Figure 12



STC-50

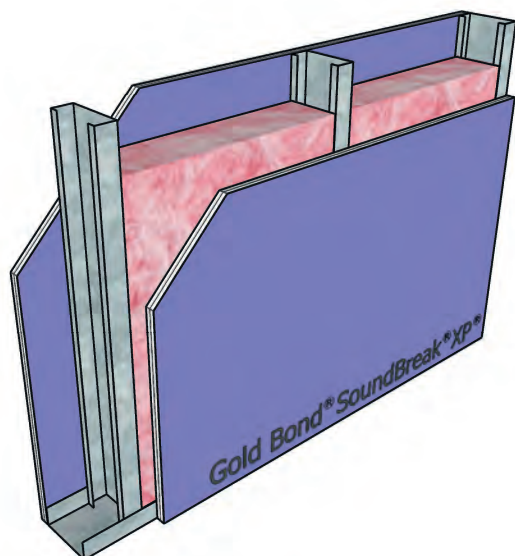
NGC 2018004

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 13



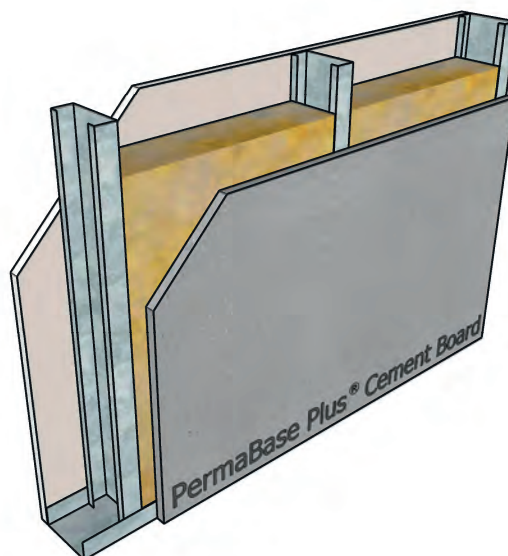
STC-45

NGC 2016055

Framing: 3-5/8" steel studs, 20 gauge (30 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: V438, U465 - 1 hour

Figure 14



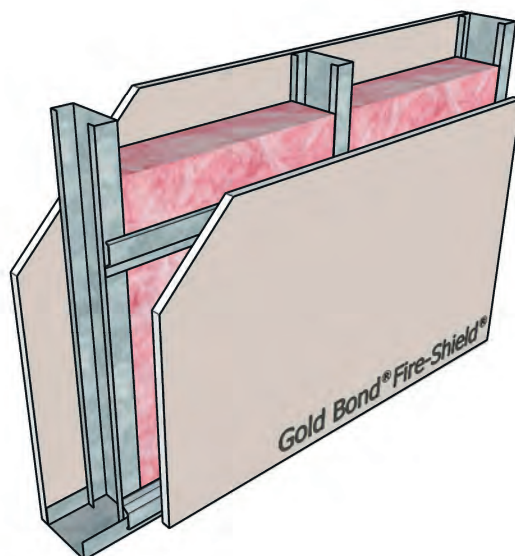
STC-40

NGC 2018037

Framing: 3-5/8" steel studs, 20 gauge (30 mil), 16" o.c.
 Insulation: 3" mineral wool
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 7/16" PermaBase Plus Cement Board

UL Design: W472 - 1 hour

Figure 15



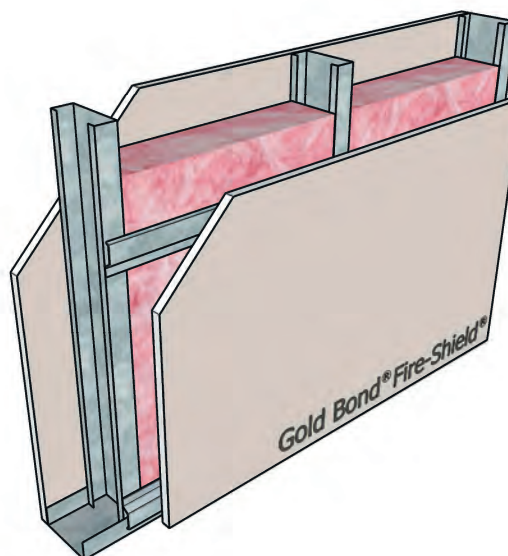
STC-48

NGC 2009059

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Figure 16



STC-51

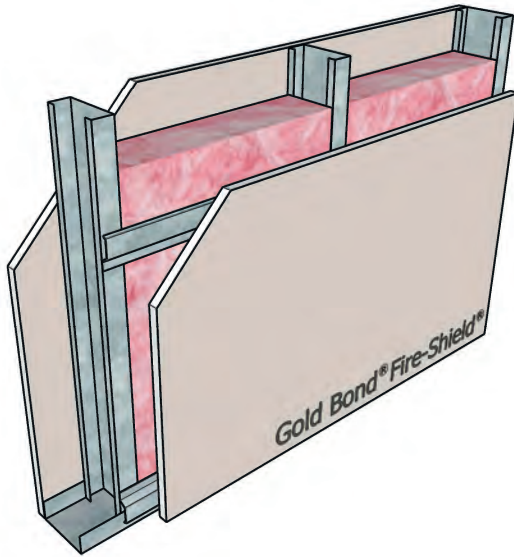
NGC 2017217

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 17



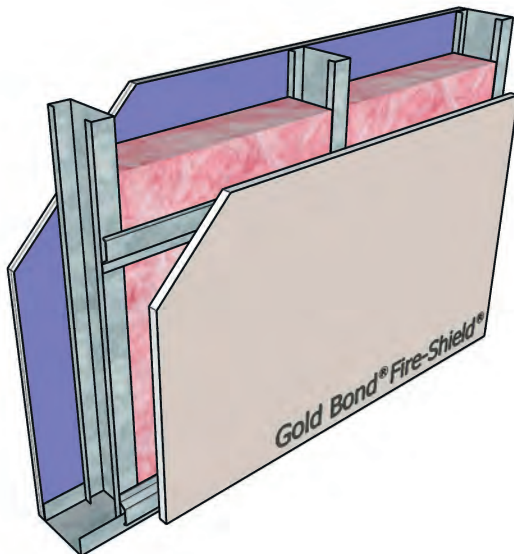
STC-47

NGC 2014086

Framing: 3-5/8" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465, W469 - 1 hour

Figure 19



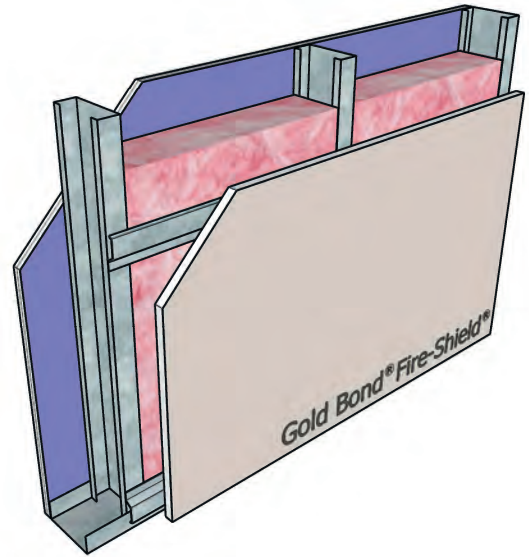
STC-51

NGC 2014085

Framing: 3-5/8" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465, W469 - 1 hour

Figure 18



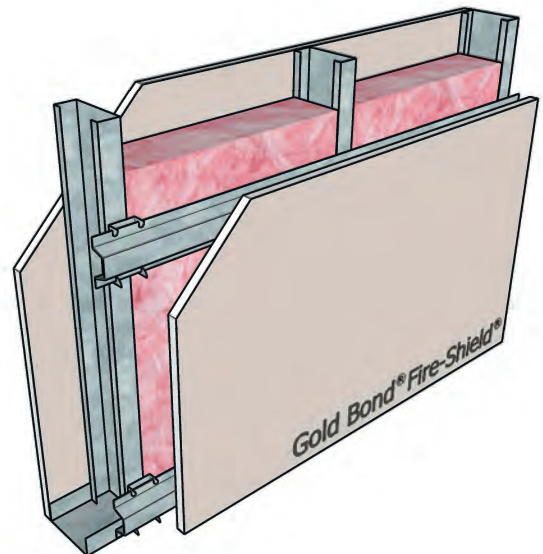
STC-54

NGC 2017218

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Figure 20



STC-57

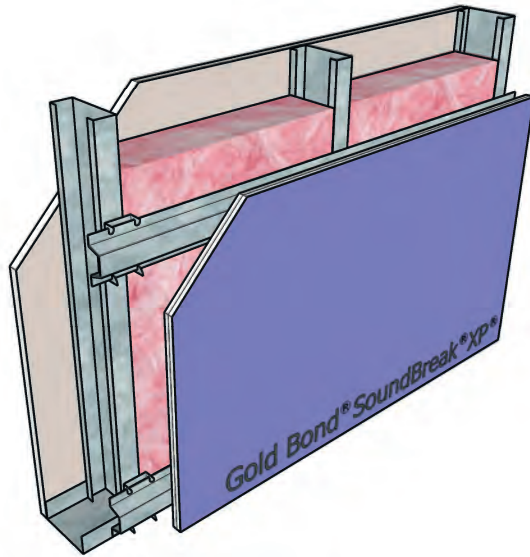
NGC 2018191

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on 7/8" furring channel and resilient isolation clips

UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 21

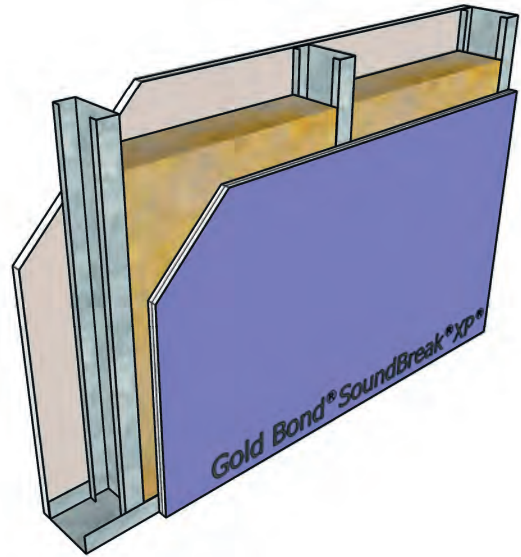


STC-59

NGC 2018197

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board on 7/8" furring channel and resilient isolation clips
 UL Design: V438, U465 - 1 hour

Figure 22



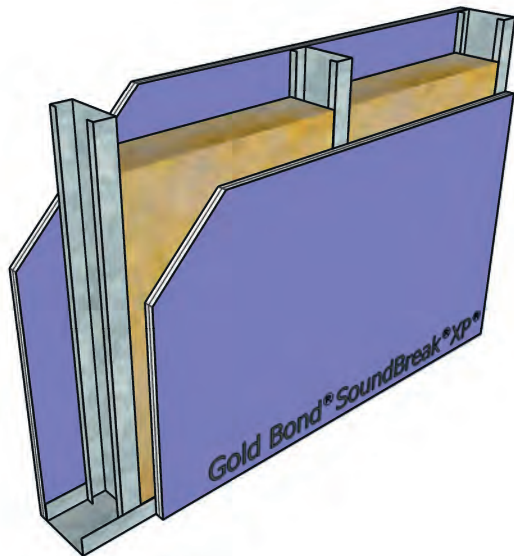
STC-41

NGC 2016042

Framing: 4" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 3" mineral wool
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: V438, U465, W469 - 1 hour

Figure 23



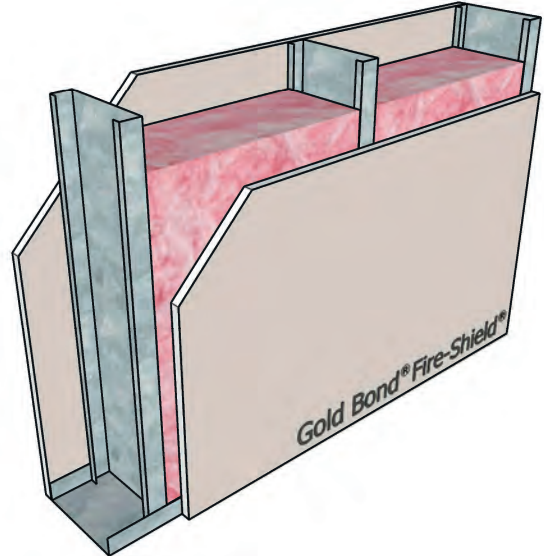
STC-43

NGC 2016041

Framing: 4" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 3" mineral wool
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: V438, U465, W469 - 1 hour

Figure 24



STC-44

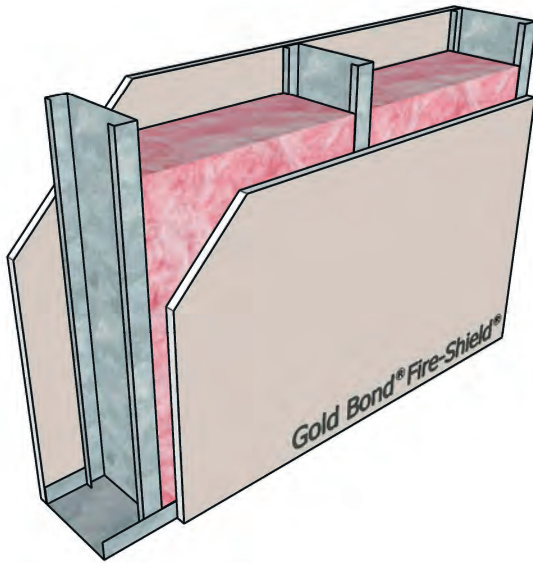
NGC 2018130

Framing: 6" steel studs, 20 gauge (19 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 25



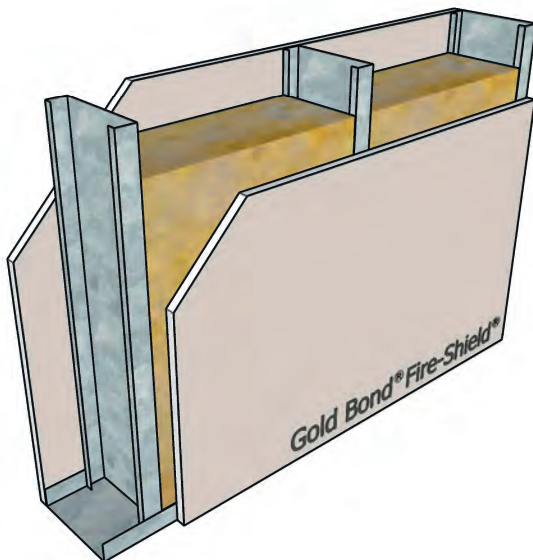
STC-44

NGC 2018133

Framing: 6" steel studs, 20 gauge (30 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 27



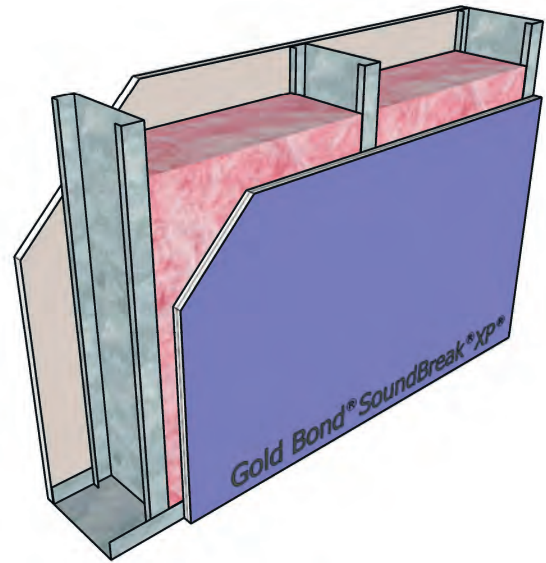
STC-44

NGC 2017169

Framing: 6" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 5-1/2" mineral wool
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465, W469 - 1 hour

Figure 26



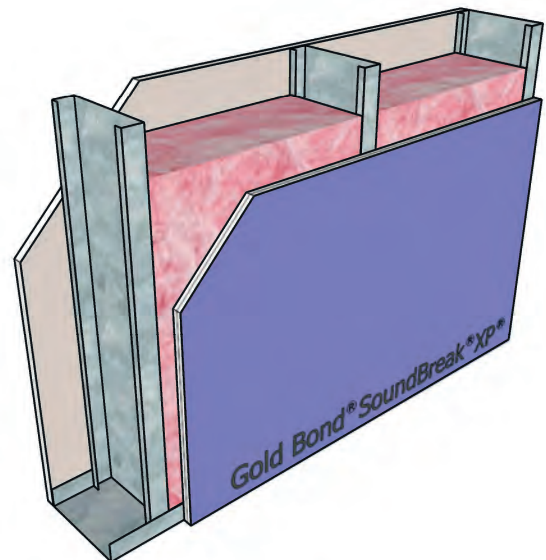
STC-47

NGC 2018129

Framing: 6" steel studs, 20 gauge (19 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: V438, U465 - 1 hour

Figure 28



STC-49

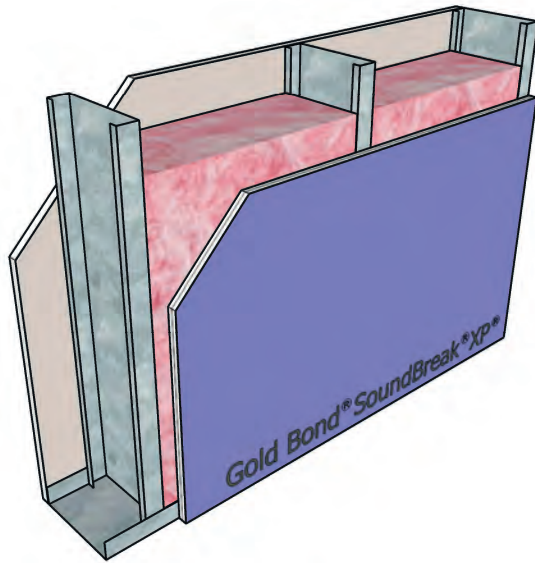
NGC 2015007

Framing: 6" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: V438, U465, W469 - 1 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 29



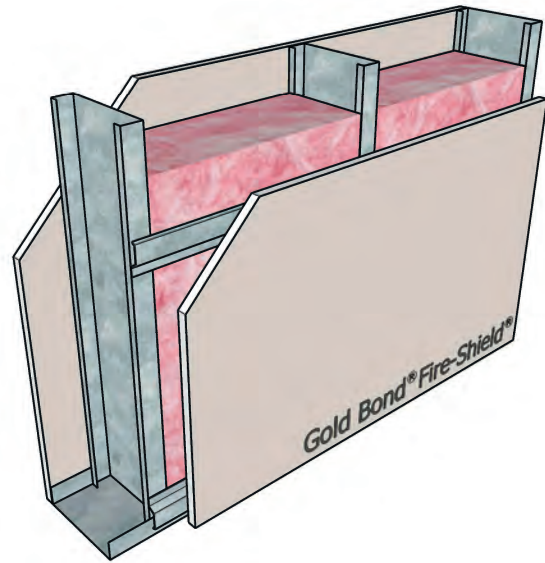
STC-50

NGC 2017031

Framing: 6" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" Hi-Impact XP Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: V438, U465, W469 - 1 hour

Figure 30



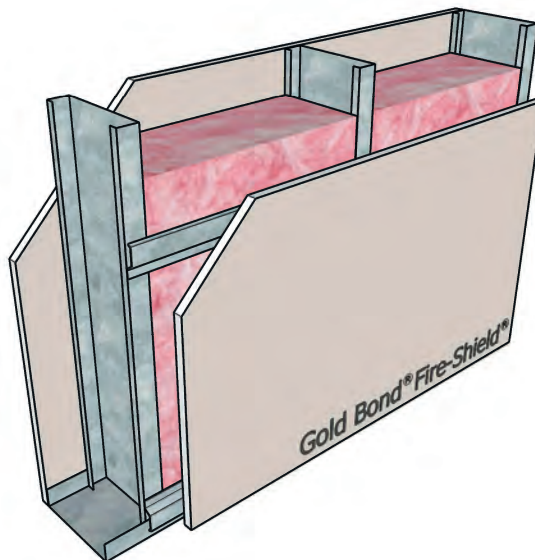
STC-53

NGC 2013026

Framing: 6" steel studs, 20 gauge (20 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Figure 31



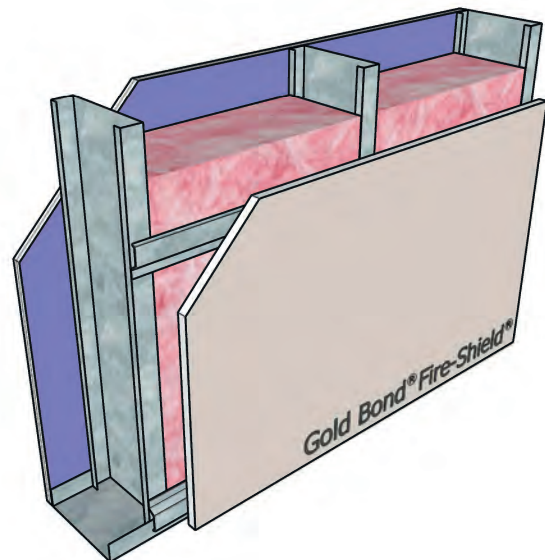
STC-50

NGC 2015001

Framing: 6" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465, W469 - 1 hour

Figure 32



STC-57

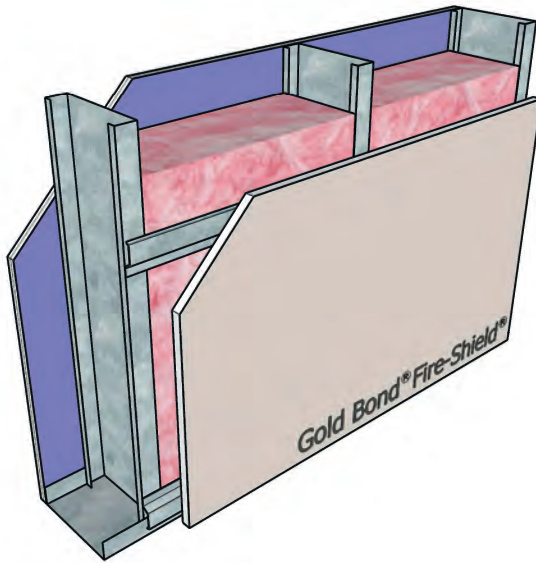
NGC 2013027

Framing: 6" steel studs, 20 gauge (20 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 33



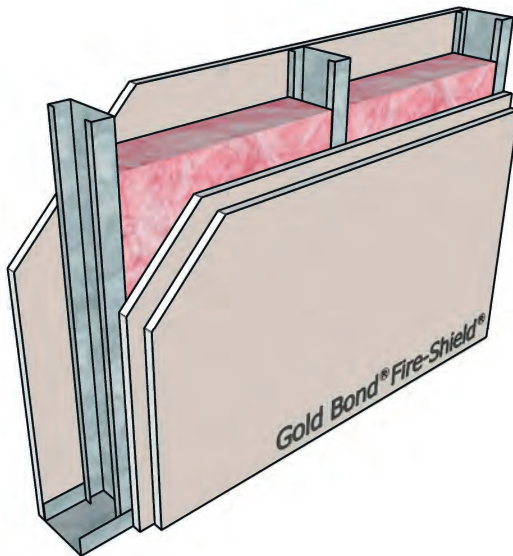
STC-55

NGC 2015002

Framing: 6" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465, W469 - 1 hour

Figure 35



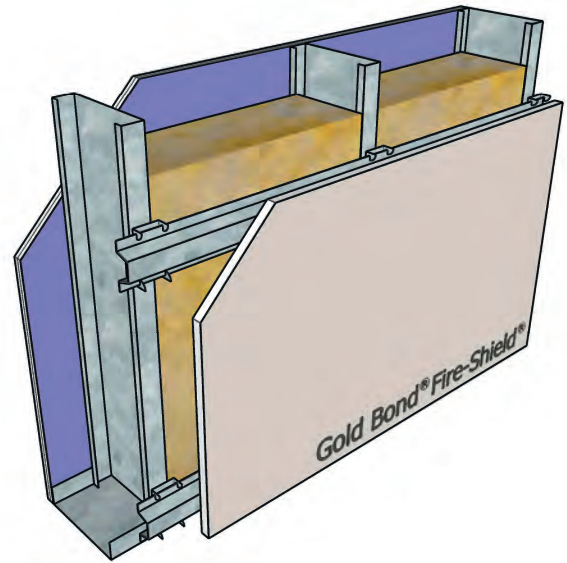
STC-52

NGC 2018108

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 16" o.c.
 Insulation: 2-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 34



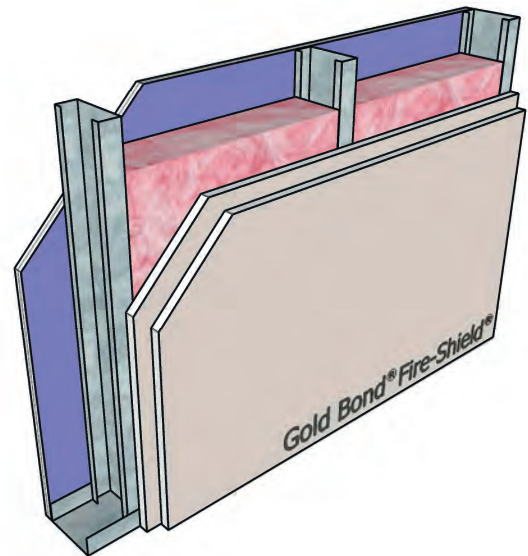
STC-62

NGC 2019029

Framing: 6" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 6" mineral wool
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Fire-Shield Gypsum Board on 7/8" furring channel and resilient isolation clips

UL Design: V438, U465 - 1 hour

Figure 36



STC-52

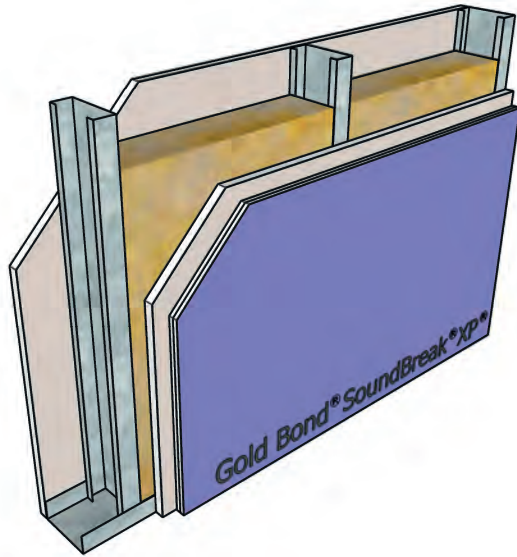
NGC 2019059

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 37

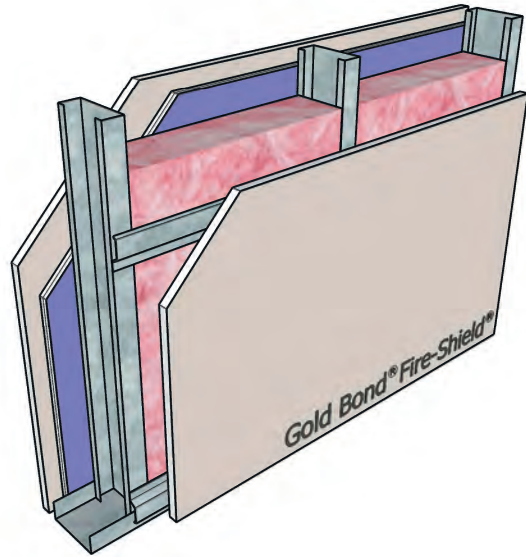


STC-45

NGC 2016047

Framing: 4" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 3" mineral wool
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board on
 5/8" Fire-Shield Gypsum Board
 UL Design: V438, U465, W469 - 1 hour

Figure 38

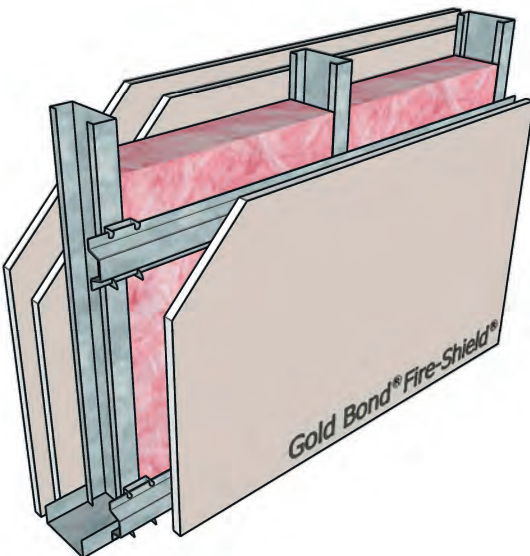


STC-58

NGC 2017216

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1
 UL Design: V438, U465 - 1 hour

Figure 39

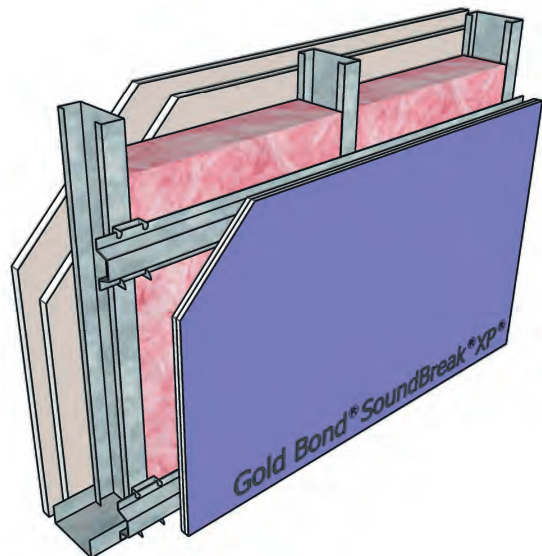


STC-61

NGC 2018192

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on 7/8" furring
 channel and resilient isolation clips
 UL Design: V438, U465 - 1 hour

Figure 40



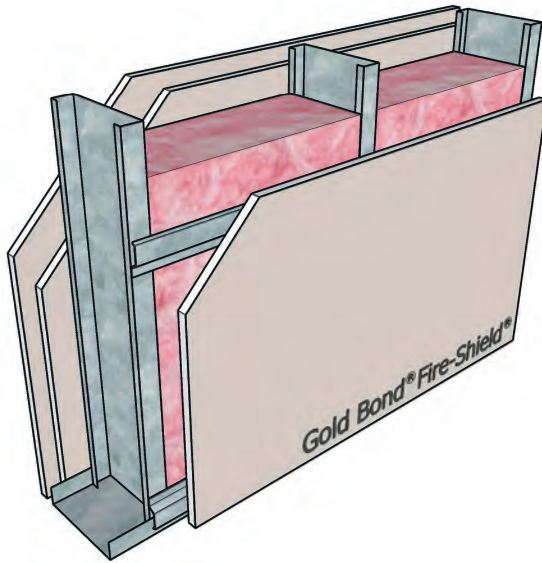
STC-63

NGC 2018194

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board on 7/8" furring
 channel and resilient isolation clips
 UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 41



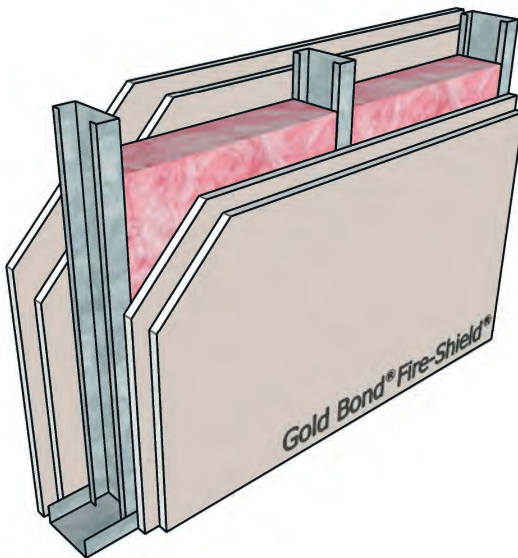
STC-54

NGC 2017173

Framing: 6" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465, W469 - 1 hour

Figure 43



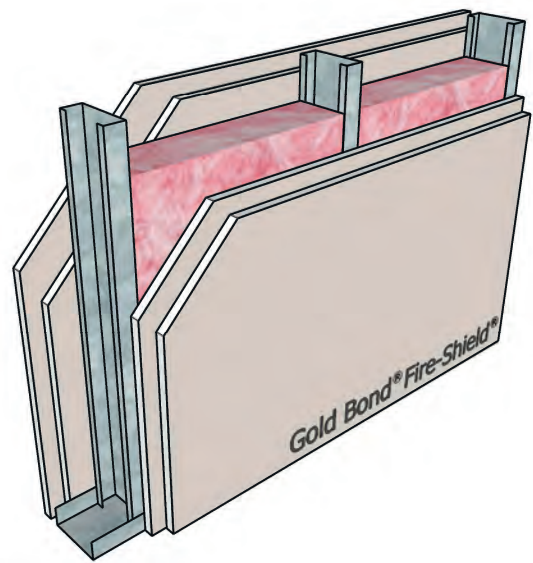
STC-52

NGC 2018113

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 16" o.c.
 Insulation: 2-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411 - 2 hour

Figure 42



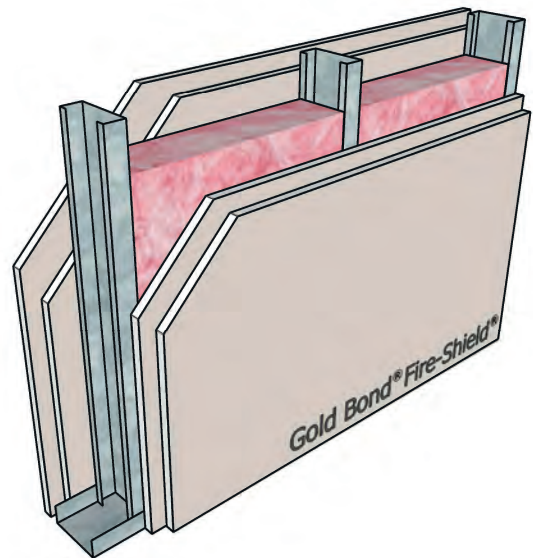
STC-56

NGC 2018109

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 16" o.c.
 Insulation: 2-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411 - 2 hour

Figure 44



STC-49

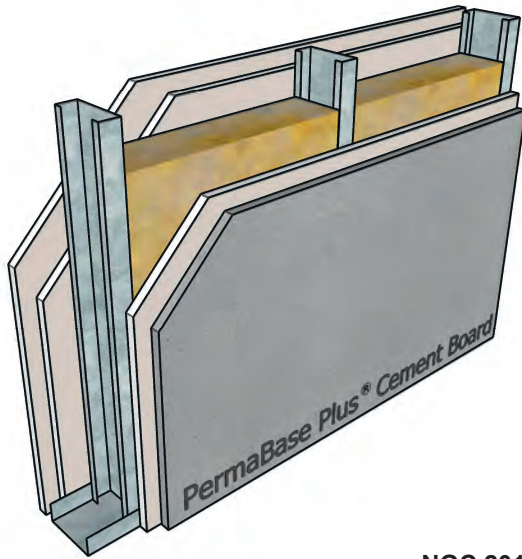
NGC 2016082

Framing: 3-5/8" steel studs, 20 gauge (30 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411 - 2 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 45



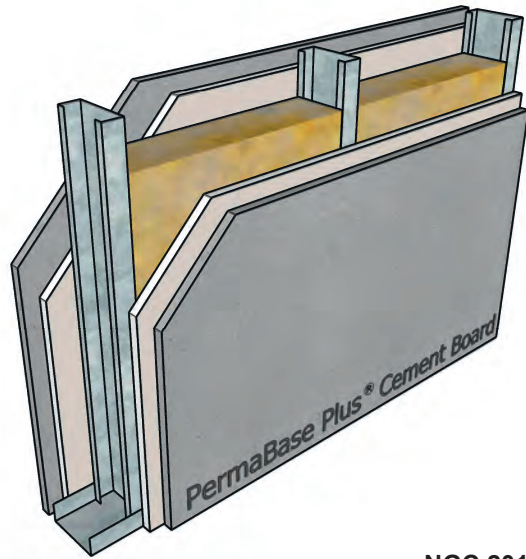
STC-43

NGC 2018036

Framing: 3-5/8" steel studs, 20 gauge (30 mil), 16" o.c.
 Insulation: 3" mineral wool
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 7/16" PermaBase Plus Cement Board on
 5/8" Fire-Shield Gypsum Board

UL Design: W472 - 2 hour

Figure 46



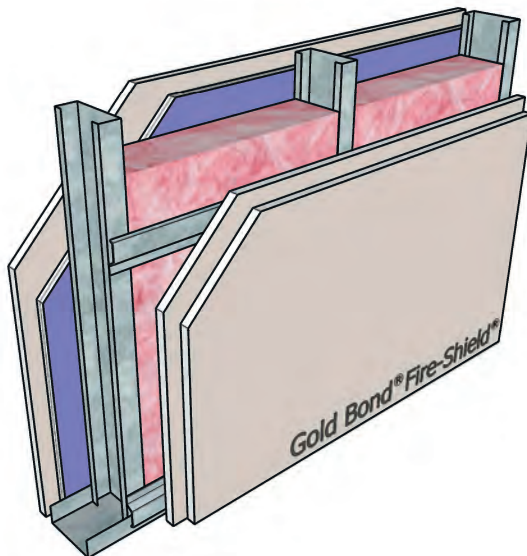
STC-42

NGC 2018035

Framing: 3-5/8" steel studs, 20 gauge (30 mil), 16" o.c.
 Insulation: 3" mineral wool
 Side 1: 7/16" PermaBase Plus Cement Board on
 5/8" Fire-Shield Gypsum Board
 Side 2: 7/16" PermaBase Plus Cement Board on
 5/8" Fire-Shield Gypsum Board

UL Design: W472 - 2 hour

Figure 47

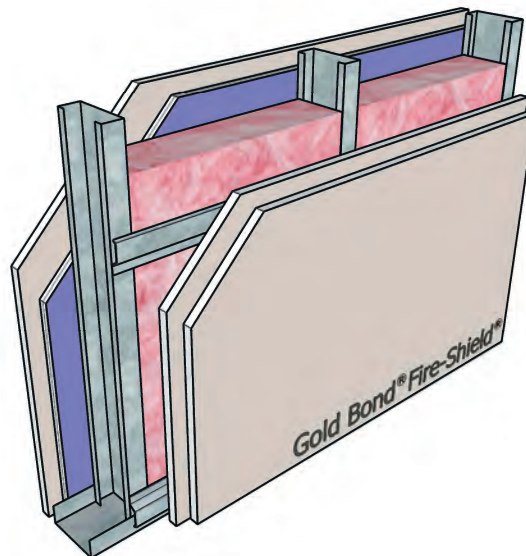


STC-61

NGC 2017215

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on RC-1
 UL Design: V438, U411 - 2 hour

Figure 48



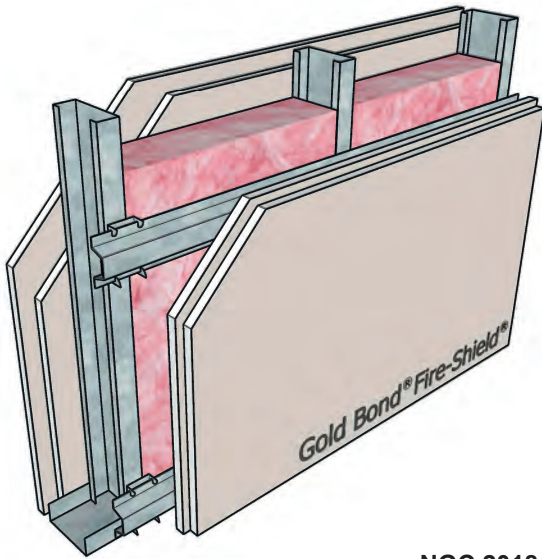
STC-59

NGC 2014084

Framing: 3-5/8" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on RC-1
 UL Design: V438, U411, W469 - 2 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 49



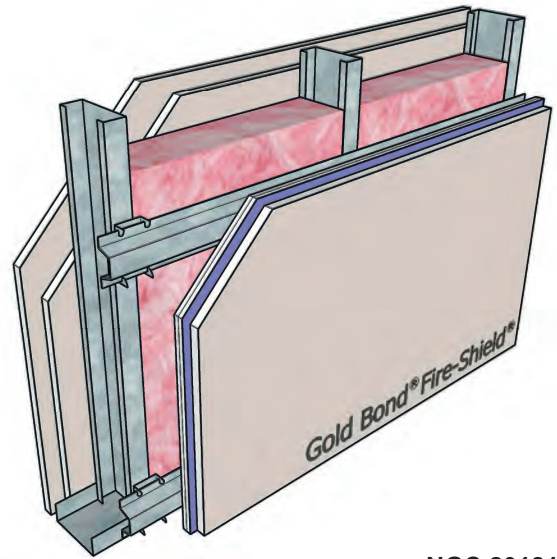
STC-63

NGC 2018193

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on 7/8" furring channel and resilient isolation clips

UL Design: V438, U411 - 2 hour

Figure 50



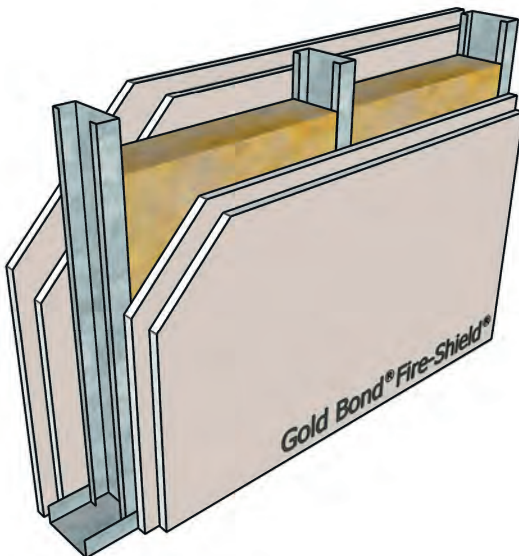
STC-65

NGC 2018195

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on 5/8" SoundBreak XP Wall Board on 7/8" furring channel and resilient isolation clips

UL Design: V438, U411 - 2 hour

Figure 51



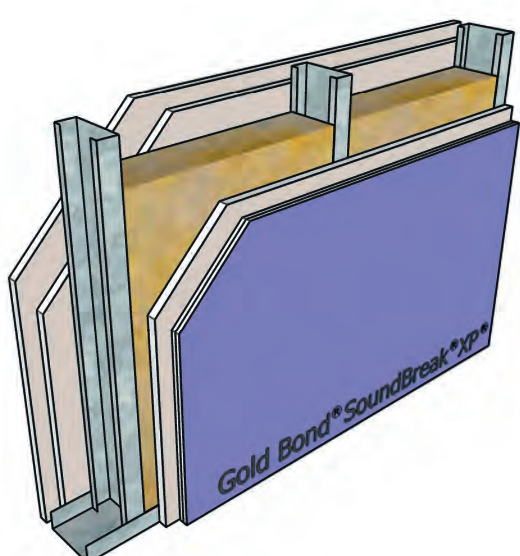
STC-45

NGC 2016049

Framing: 4" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 3" mineral wool
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411, W469 - 2 hour

Figure 52



STC-50

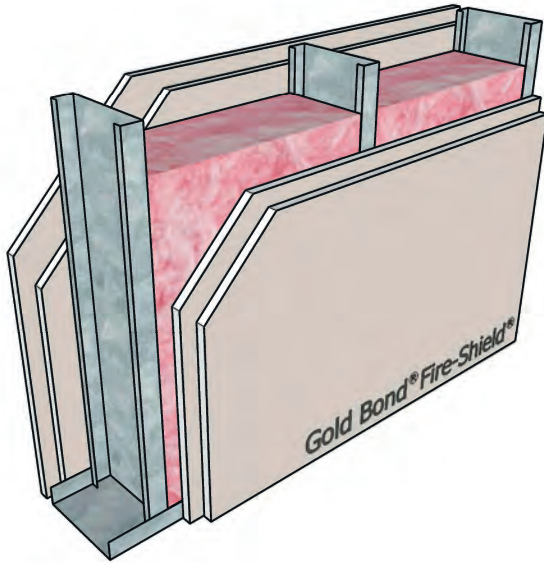
NGC 2016048

Framing: 4" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 3" mineral wool
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board on 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411, W469 - 2 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 53



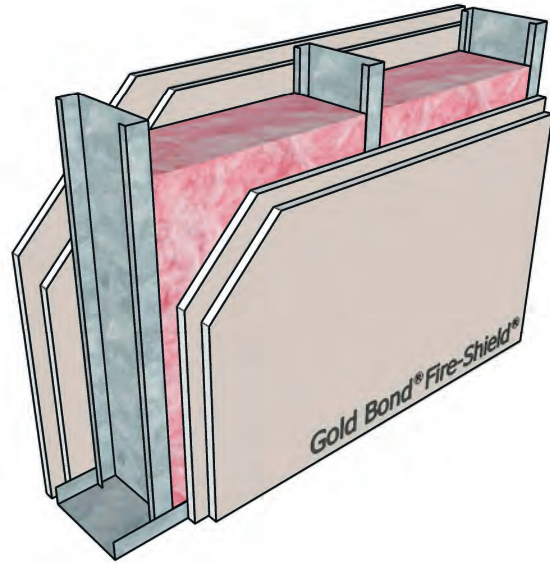
STC-54

NGC 2018132

Framing: 6" steel studs, 20 gauge (30 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411 - 2 hour

Figure 54



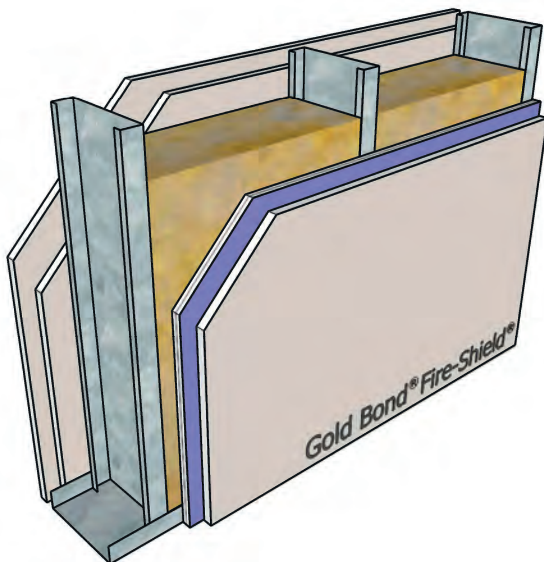
STC-52

NGC 2017174

Framing: 6" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411, W469 - 2 hour

Figure 55



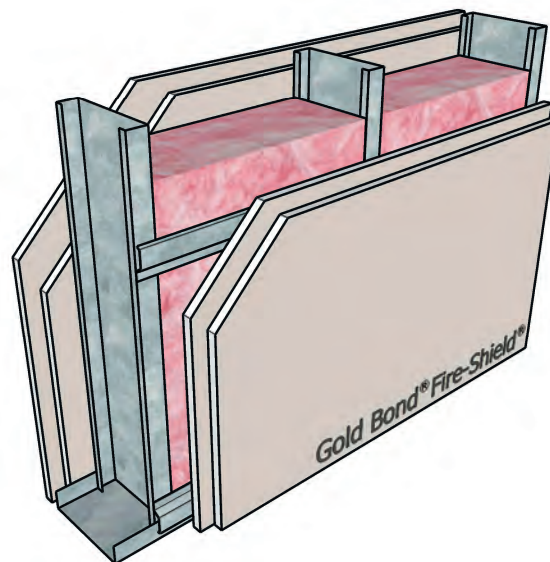
STC-62

NGC 2019062

Framing: 6" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 6" mineral wool
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board

UL Design: V438, U411 - 2 hour

Figure 56



STC-60

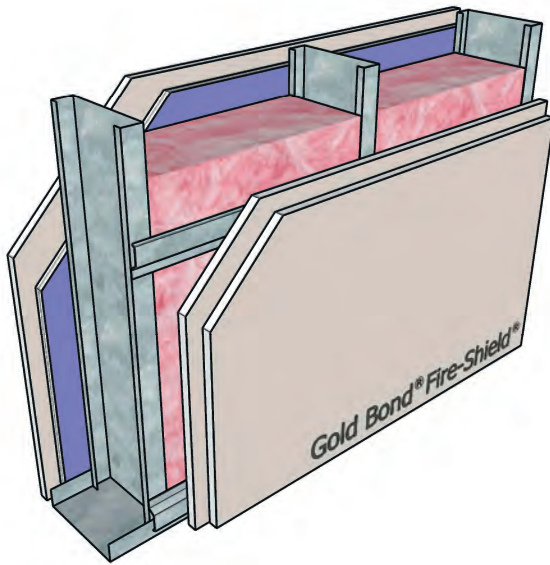
NGC 2017172

Framing: 6" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U411, W469 - 2 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 57

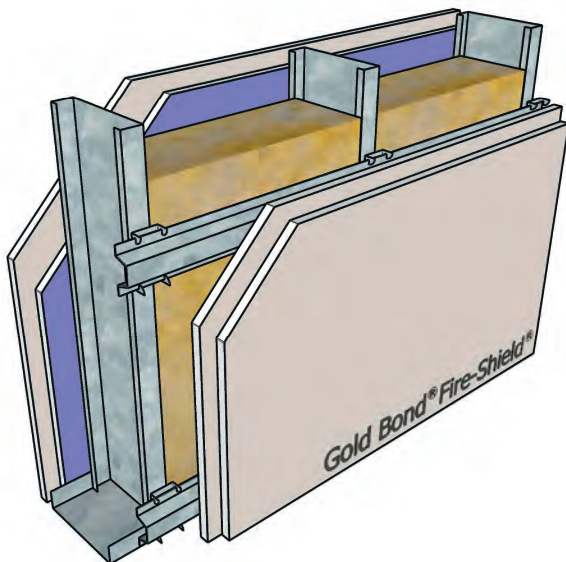


STC-61

NGC 2015003

Framing: 6" steel studs, 16 gauge (54 mil), 16" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on RC-1
 UL Design: V438, U411, W469 - 2 hour

Figure 59

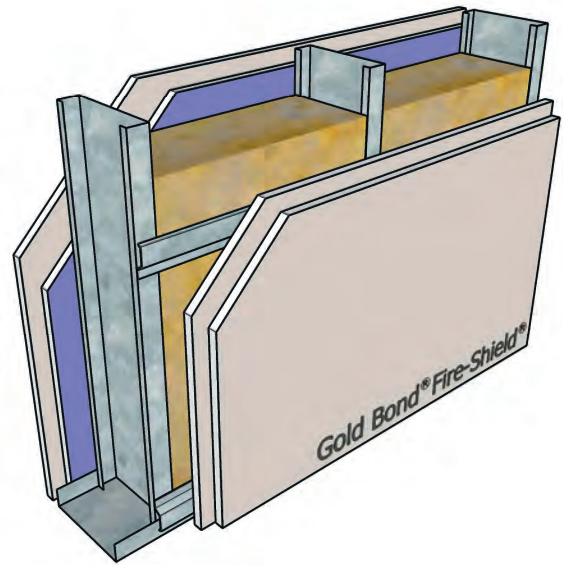


STC-69

NGC 2019032

Framing: 6" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 6" mineral wool
 Side 1: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on 7/8"
 furring channel and resilient isolation clips
 UL Design: V438, U411, W469 - 2 hour

Figure 58

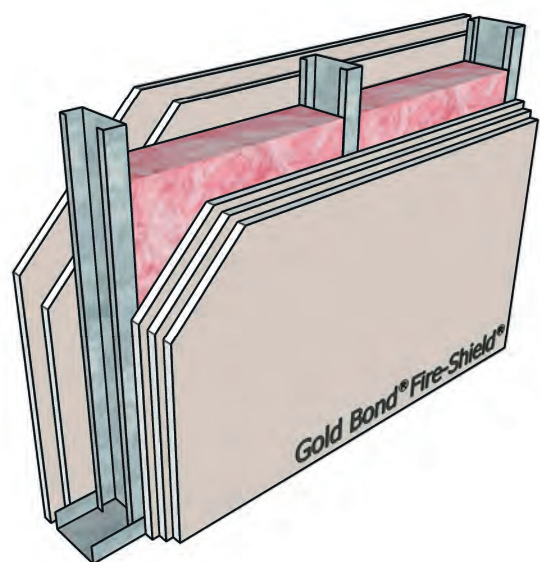


STC-64

NGC 2019061

Framing: 6" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 6" mineral wool
 Side 1: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on RC-1
 UL Design: V438, U411, W469 - 2 hour

Figure 60



STC-49

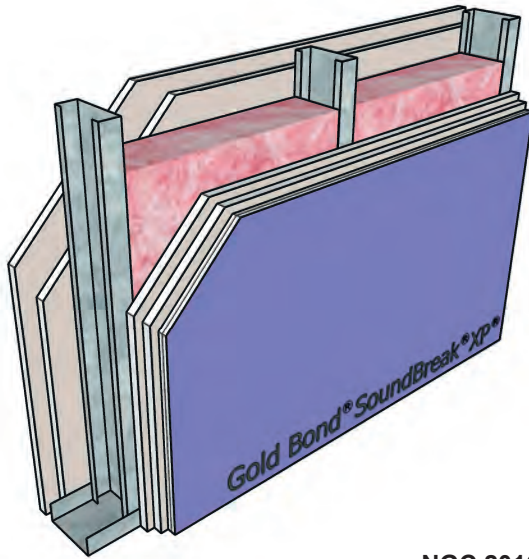
NGC 2016085

Framing: 3-5/8" steel studs, 20 gauge (30 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 3 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411 - 2 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 61



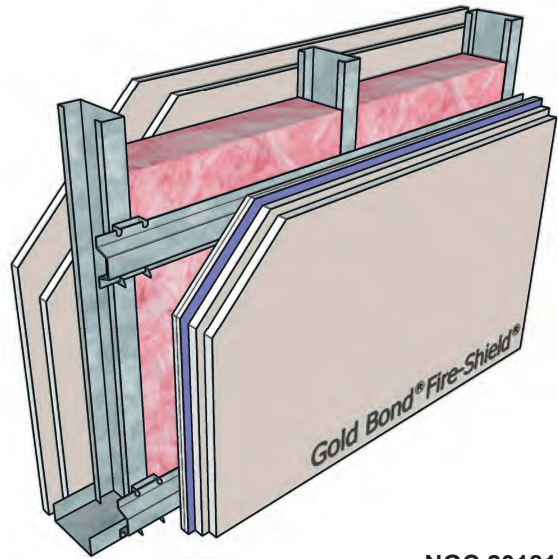
STC-51

NGC 2016086

Framing: 3-5/8" steel studs, 20 gauge (30 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board on
 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411 - 2 hour

Figure 62



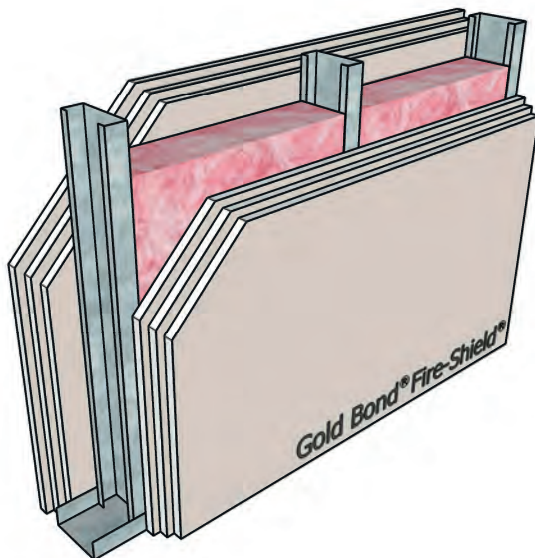
STC-67

NGC 2018196

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on 5/8"
 SoundBreak XP Wall Board on 7/8" furring
 channel and resilient isolation clips

UL Design: V438, U411 - 2 hour

Figure 63



STC-51

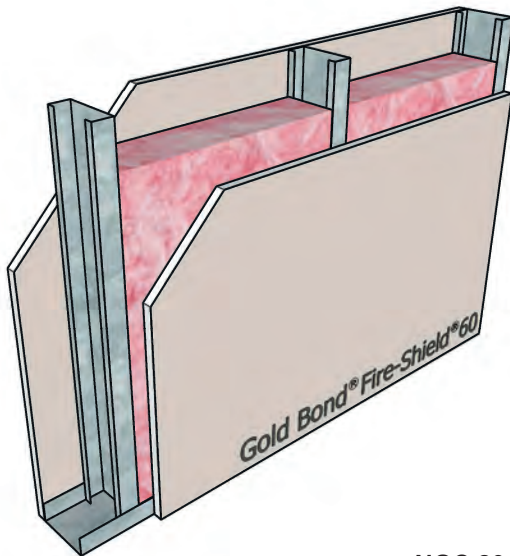
NGC 2016088

Framing: 3-5/8" steel studs, 20 gauge (30 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 3 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 3 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438 - 3 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 64



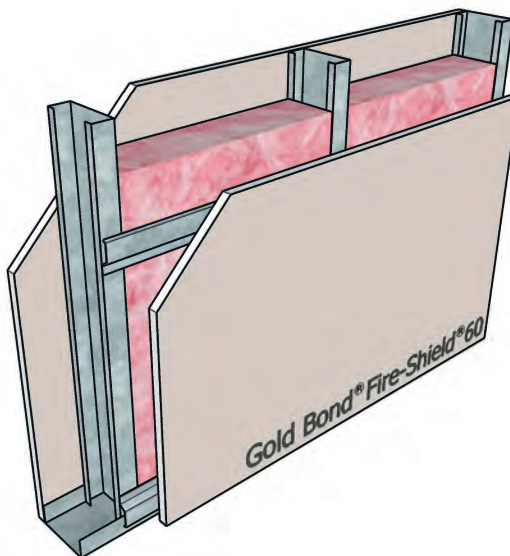
STC-44

NGC 2018159

Framing: 3-5/8" steel studs, 25 gauge (15 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 60 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 60 Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 66



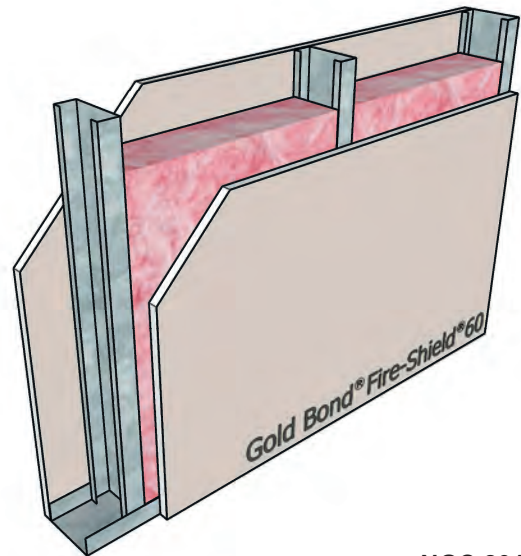
STC-50

NGC 2018158

Framing: 3-5/8" steel studs, 25 gauge (15 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 60 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 60 Gypsum Board
 on RC-1

UL Design: V438, U465 - 1 hour

Figure 65



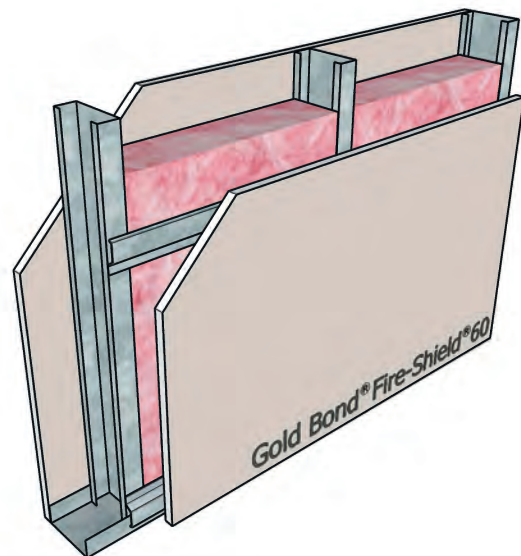
STC-41

NGC 2018168

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 60 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 60 Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 67



STC-48

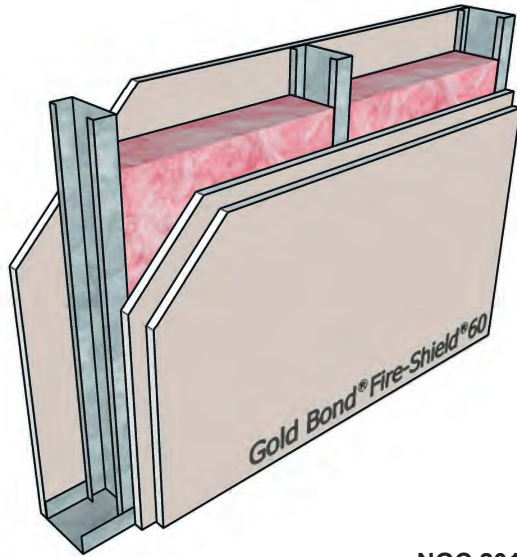
NGC 2018167

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 60 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 60 Gypsum Board
 on RC-1

UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 68



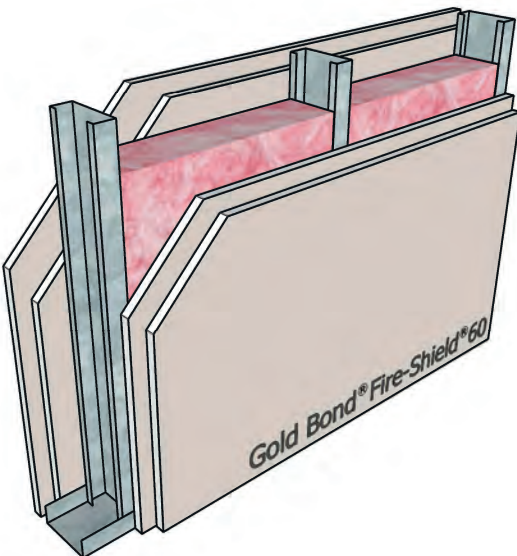
STC-43

NGC 2018169

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 60 Gypsum Board
 Side 2: 2 layers 5/8" High Strength Fire-Shield 60 Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 70



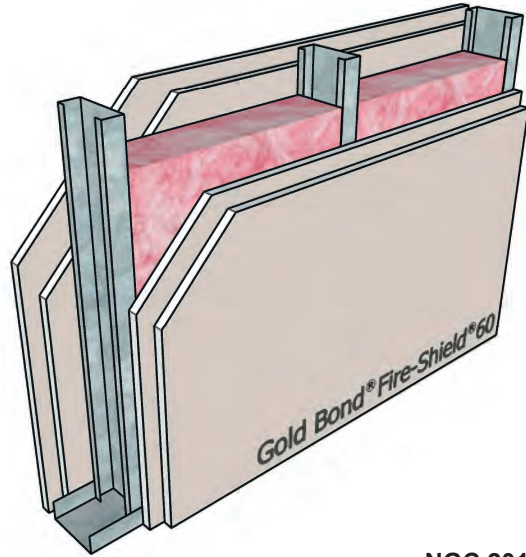
STC-48

NGC 2018170

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers High Strength 5/8" Fire-Shield 60 Gypsum Board
 Side 2: 2 layers High Strength 5/8" Fire-Shield 60 Gypsum Board

UL Design: V438, U411 - 2 hour

Figure 69



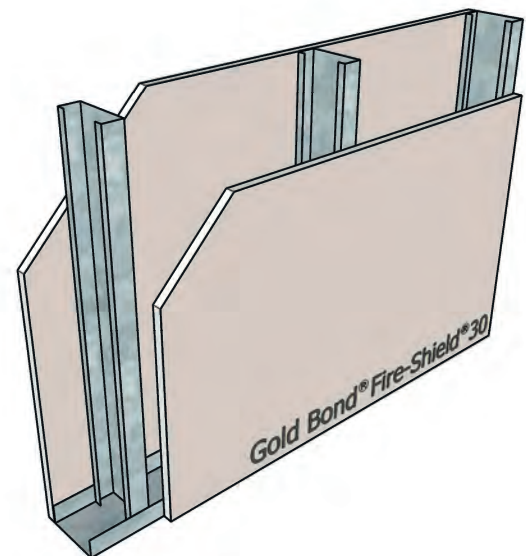
STC-50

NGC 2018160

Framing: 3-5/8" steel studs, 25 gauge (15 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" High Strength Fire-Shield 60 Gypsum Board
 Side 2: 2 layers 5/8" High Strength Fire-Shield 60 Gypsum Board

UL Design: V438, U411 - 2 hour

Figure 71



STC-35

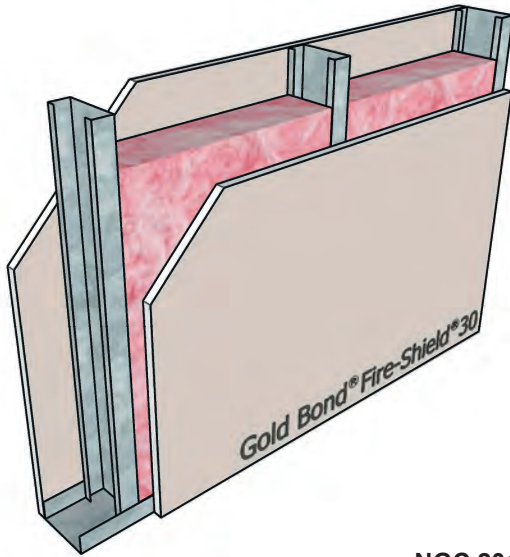
NGC 2014011

Framing: 3-5/8" steel studs, 20 gauge (20 mil), 16" o.c.
 Insulation: None
 Side 1: 5/8" High Strength Fire-Shield 30 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 30 Gypsum Board

UL Design: W411 - 1/2 hour

Steel Stud Partitions with Framing 16" o.c.

Figure 72



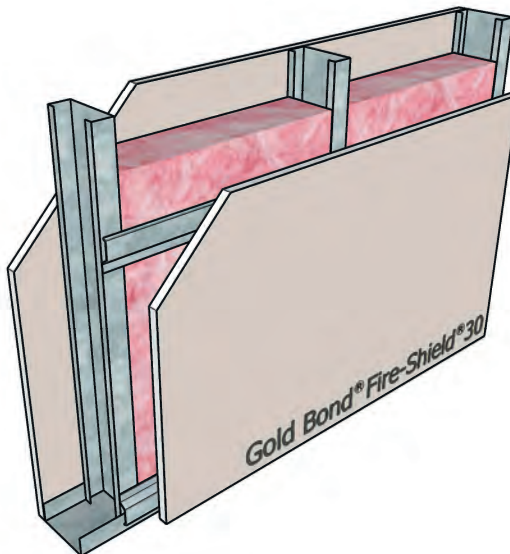
STC-38

NGC 2014009

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 30 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 30 Gypsum Board

UL Design: W411 - 1/2 hour

Figure 74



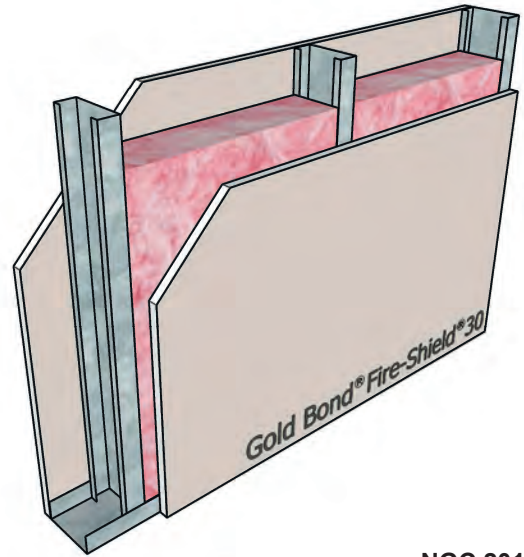
STC-45

NGC 2014012

Framing: 3-5/8" steel studs, 20 gauge (20 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 30 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 30 Gypsum Board on RC-1

UL Design: W411 - 1/2 hour

Figure 73



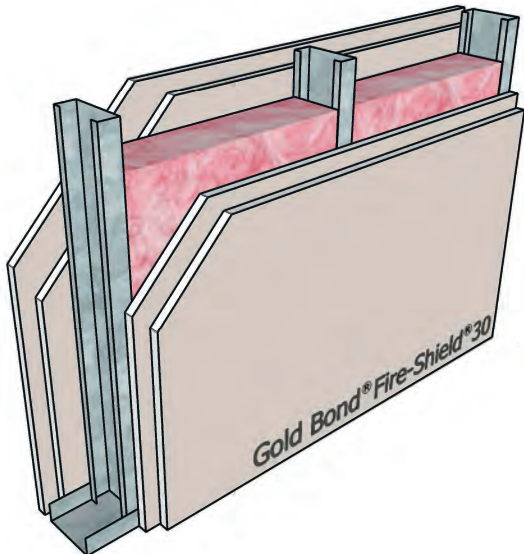
STC-39

NGC 2014010

Framing: 3-5/8" steel studs, 20 gauge (20 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 30 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 30 Gypsum Board

UL Design: W411 - 1/2 hour

Figure 75



STC-44

NGC 2014013

Framing: 3-5/8" steel studs, 20 gauge (20 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" High Strength Fire-Shield 30 Gypsum Board
 Side 2: 2 layers 5/8" High Strength Fire-Shield 30 Gypsum Board

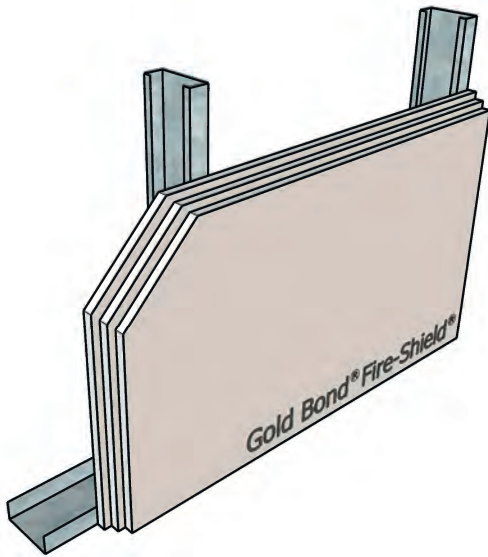
UL Design: W411 - 1 hour

Steel Stud Partitions
with Framing 24" o.c.



Steel Stud Partitions with Framing 24" o.c.

Figure 76



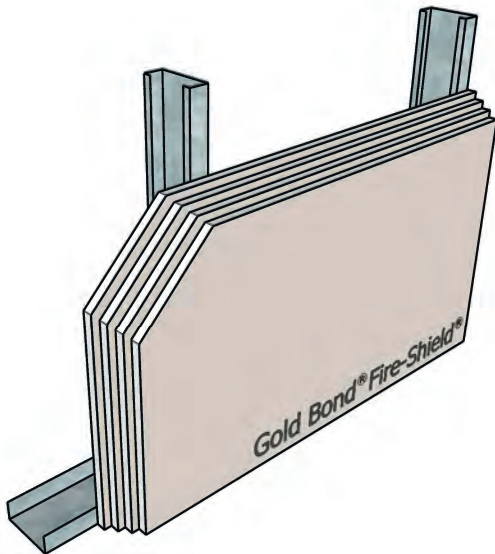
STC-34

NGC 2018049

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 24" o.c.
 Insulation: None
 Side 1: None
 Side 2: 3 layers 5/8" Fire-Shield Gypsum Board

UL Design: V497 - 1 hour

Figure 78



STC-36

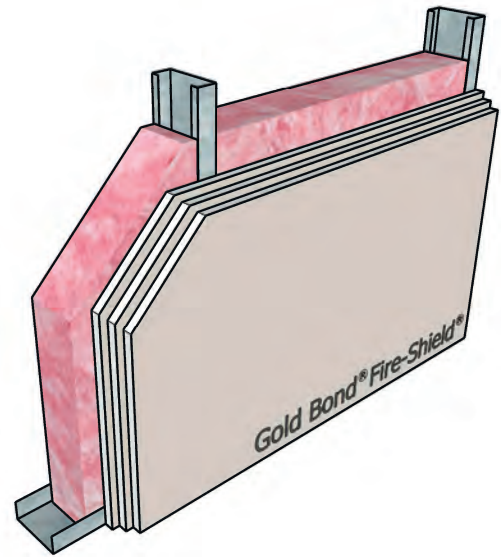
NGC 2018054

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 24" o.c.
 Insulation: None
 Side 1: None
 Side 2: 4 layers 5/8" Fire-Shield Gypsum Board

UL Design: V497 - 2 hour

Note: 25 gauge (15 mil) and 20 gauge (18 mil, 19 mil, and 20 mil) studs are equivalent gauge (EQ) studs.

Figure 77



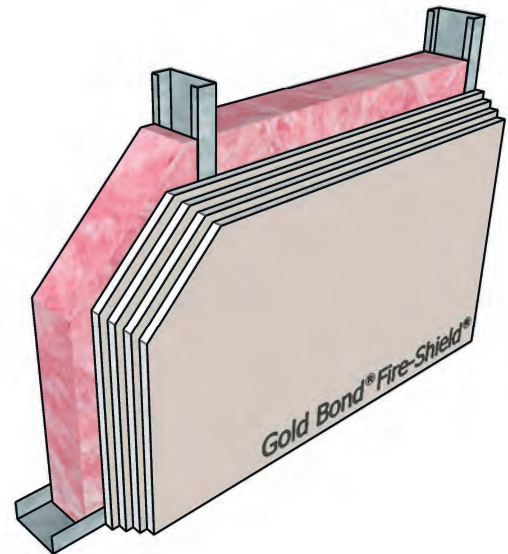
STC-42

NGC 2018048

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: None
 Side 2: 3 layers 5/8" Fire-Shield Gypsum Board

UL Design: V497 - 1 hour

Figure 79



STC-44

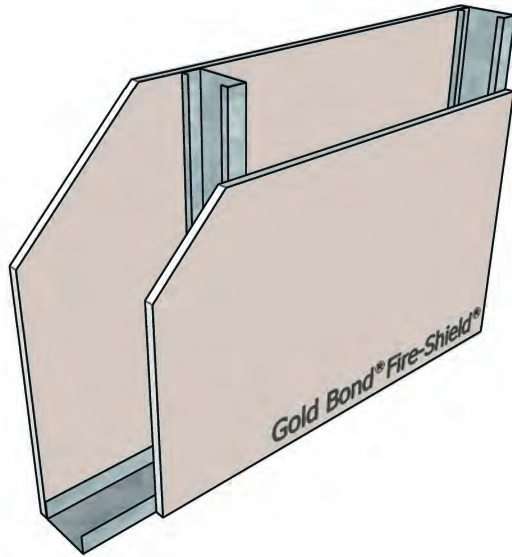
NGC 2018047

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: None
 Side 2: 4 layers 5/8" Fire-Shield Gypsum Board

UL Design: V497 - 2 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 80



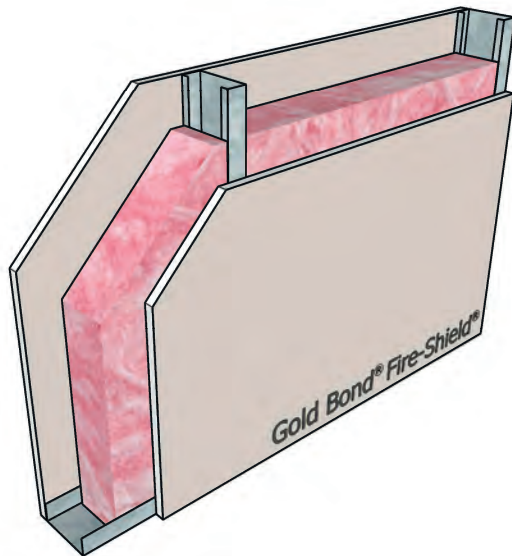
STC-42

NGC 2385

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: None
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 82



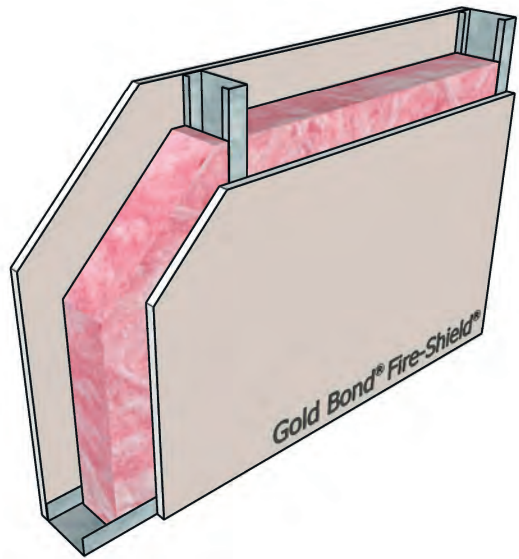
STC-47

NGC 2016104

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 81



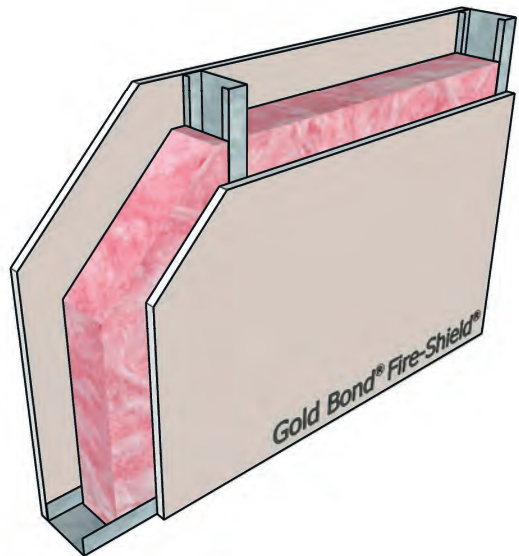
STC-44

NGC 2013015

Framing: 3-5/8" steel studs, 20 gauge (20 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 83



STC-39

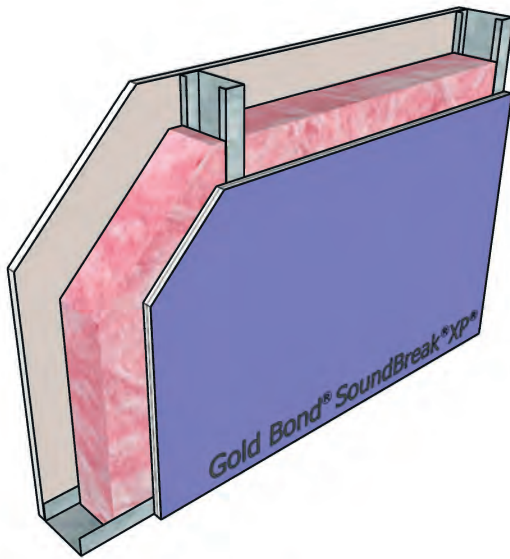
NGC 2017040

Framing: 3-1/2" steel studs, 20 gauge (33 mil), 24" o.c.
 Insulation: 3" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465, W469 - 1 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 84



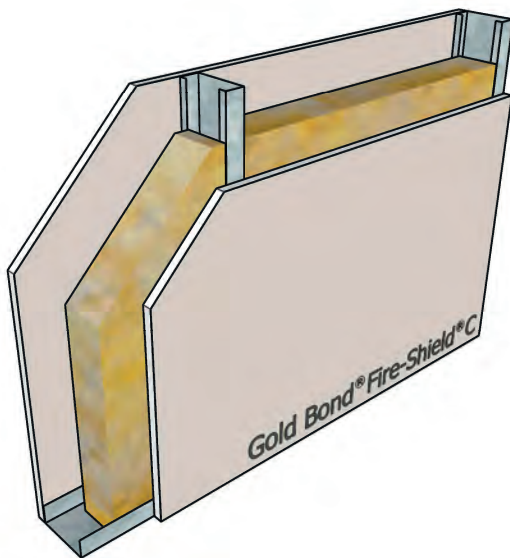
STC-55

OL14-0404

Framing: 3-5/8" steel studs, 20 gauge (20 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: V438, U465 - 1 hour

Figure 86



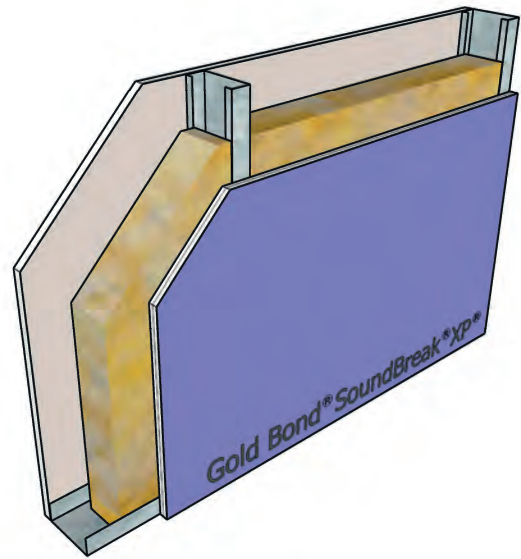
STC-47

NGC 2017009

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3" mineral wool
 Side 1: 1/2" Fire-Shield C Gypsum Board
 Side 2: 1/2" Fire-Shield C Gypsum Board

UL Design: V438, V401 - 1 hour

Figure 85



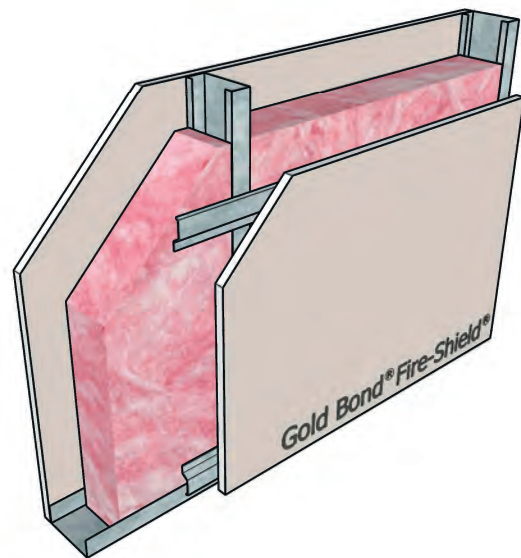
STC-54

RAL-TL07-389

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3" mineral wool
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: V438, U465 - 1 hour

Figure 87



STC-53

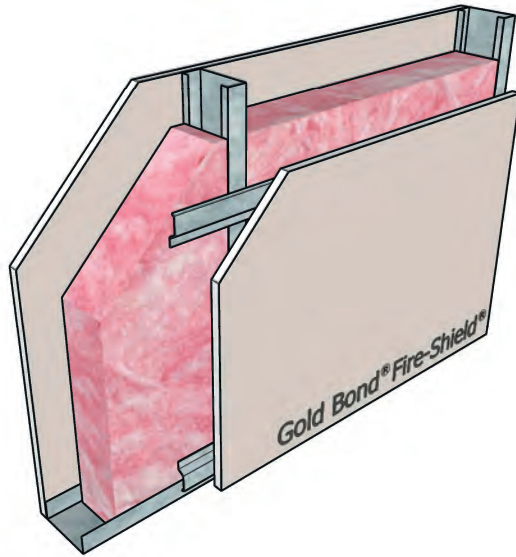
NGC 2017102

Framing: 3-5/8" steel studs, 25 gauge (15 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 88



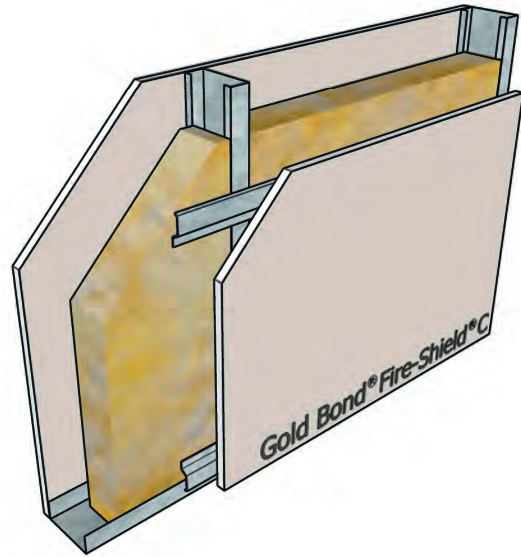
STC-51

NGC 2016017

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Figure 89



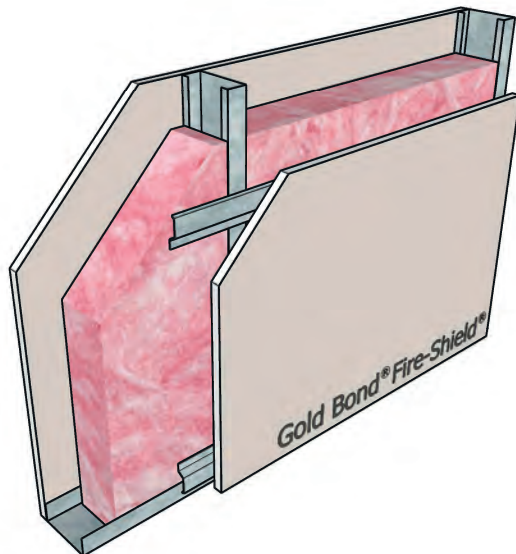
STC-54

NGC 2016016

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3" mineral wool
 Side 1: 5/8" Fire-Shield C Gypsum Board
 Side 2: 5/8" Fire-Shield C Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Figure 90



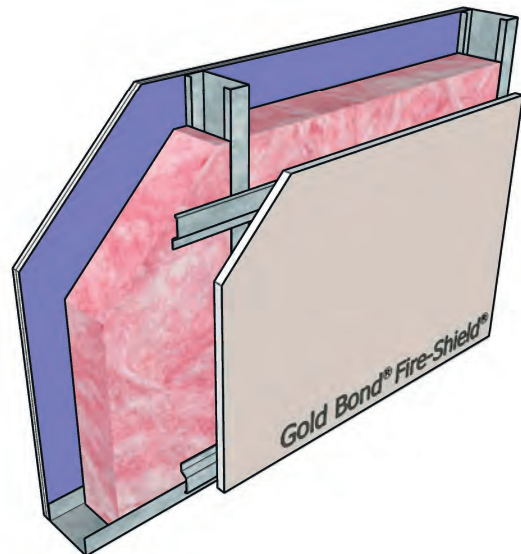
STC-50

NGC 2013019

Framing: 3-5/8" steel studs, 20 gauge (20 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Figure 91



STC-56

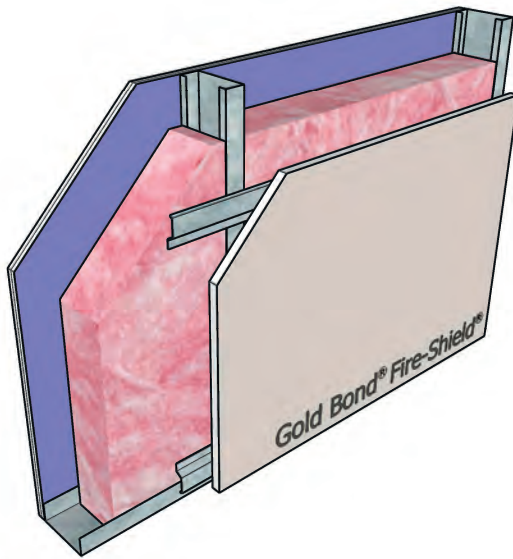
NGC 2016018

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 92



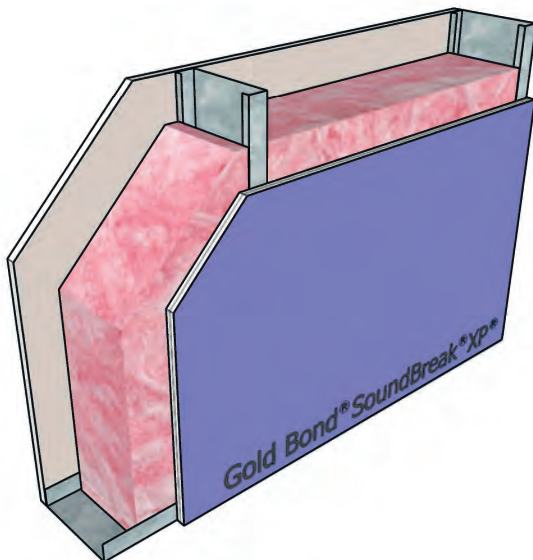
STC-54

NGC 2013020

Framing: 3-5/8" steel studs, 20 gauge (20 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Figure 94



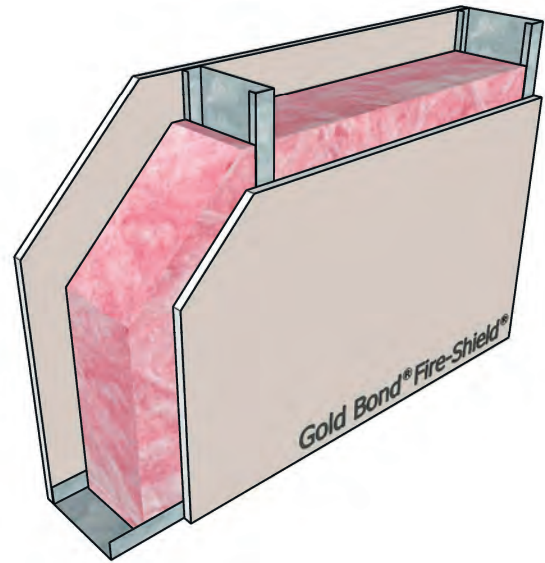
STC-57

NGC 2017115

Framing: 6" steel studs, 25 gauge (15 mil), 24" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: V438, U465 - 1 hour

Figure 93



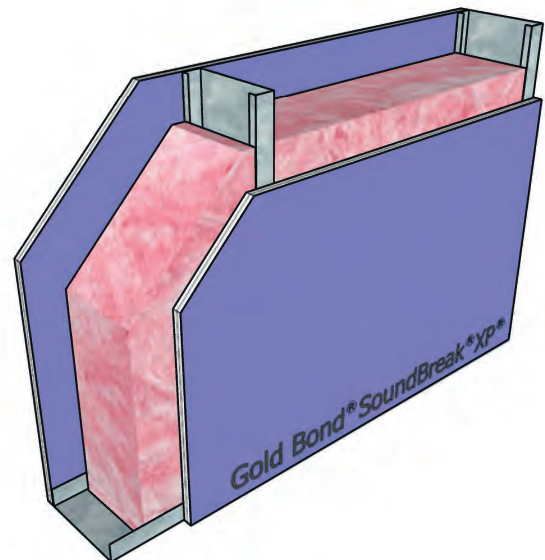
STC-49

NGC 2017116

Framing: 6" steel studs, 25 gauge (15 mil), 24" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 95



STC-58

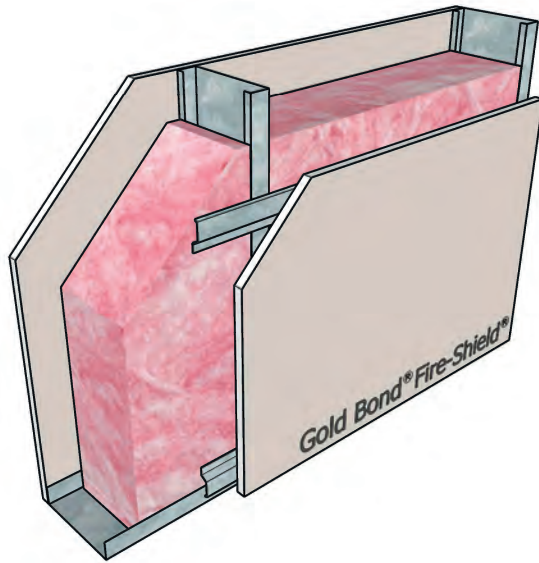
NGC 2017114

Framing: 6" steel studs, 25 gauge (15 mil), 24" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 96



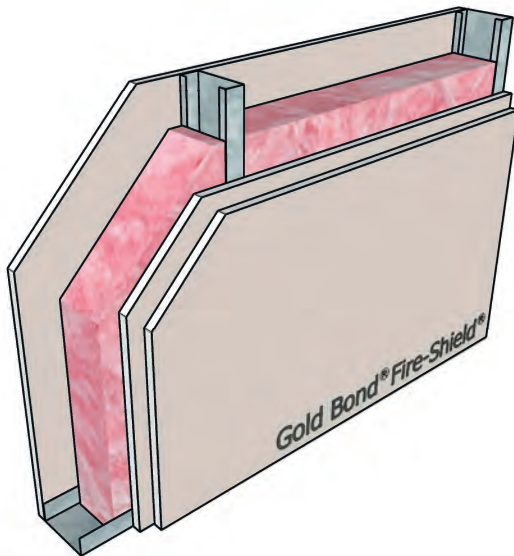
STC-52

NGC 2002039

Framing: 6" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" Fire-Shield C Gypsum Board
 Side 2: 5/8" Fire-Shield C Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Figure 98



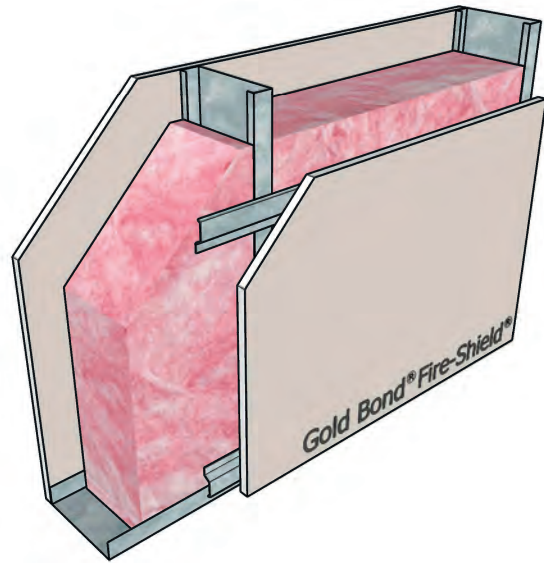
STC-52

NGC 2018111

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 2-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 97



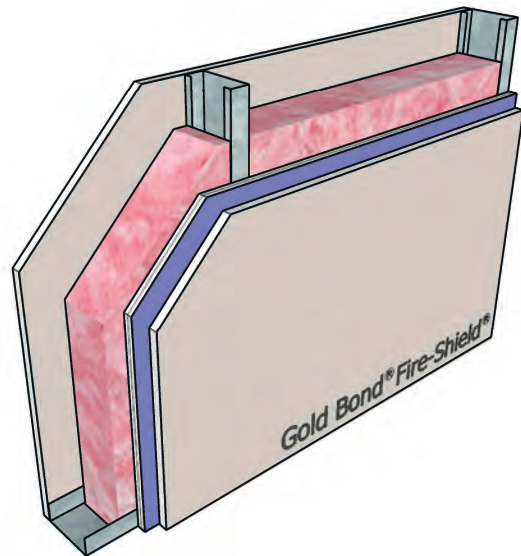
STC-53

NGC 2017117

Framing: 6" steel studs, 25 gauge (15 mil), 24" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Figure 99



STC-57

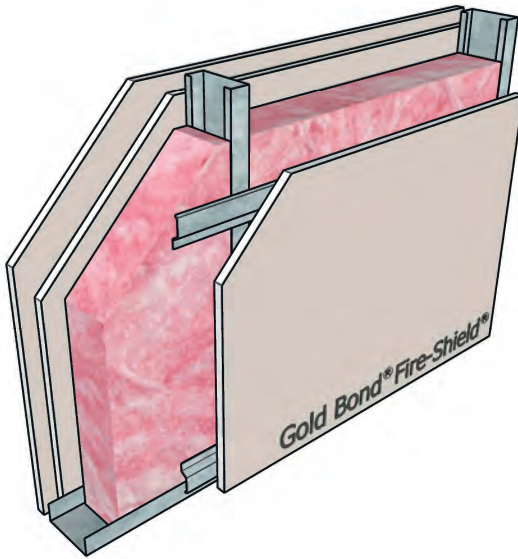
RAL-TL06-334

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on 1/2" SoundBreak XP Wall Board

UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 100



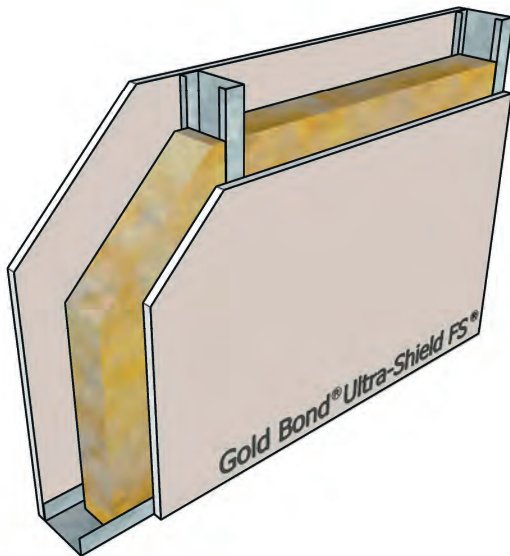
STC-57

NGC 2018057

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Figure 102



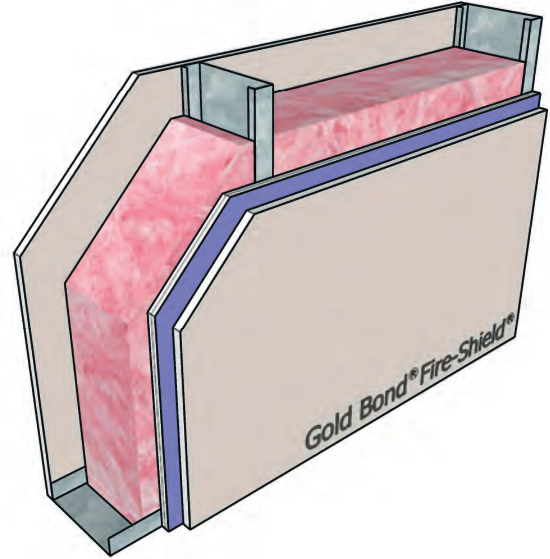
STC-50

NGC 2015062

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3" mineral wool
 Side 1: 3/4" Ultra-Shield FS Gypsum Board
 Side 2: 3/4" Ultra-Shield FS Gypsum Board

UL Design: W432 - 2 hour

Figure 101



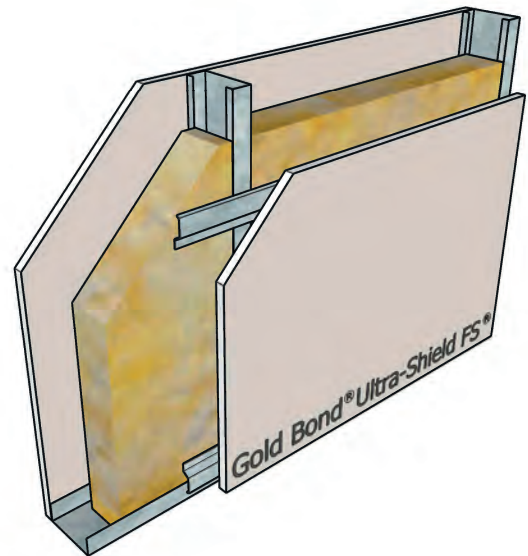
STC-57

NRCC B-3456.1

Framing: 6" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 6" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on 5/8" SoundBreak XP Wall Board

UL Design: V438, U465 - 1 hour

Figure 103



STC-56

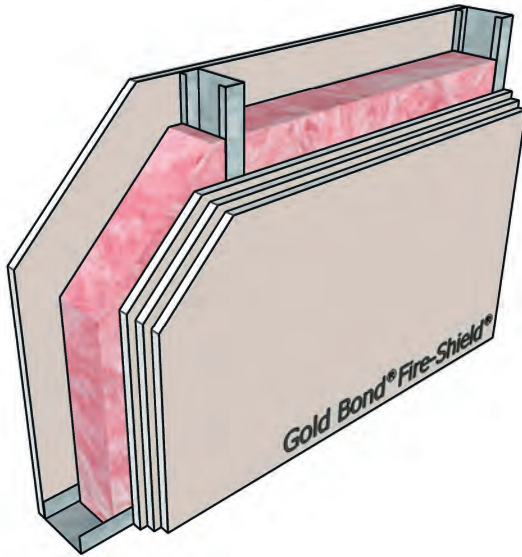
NGC 2015063

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3" mineral wool
 Side 1: 3/4" Ultra-Shield FS Gypsum Board
 Side 2: 3/4" Ultra-Shield FS Gypsum Board on RC-1

UL Design: W432 - 2 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 104



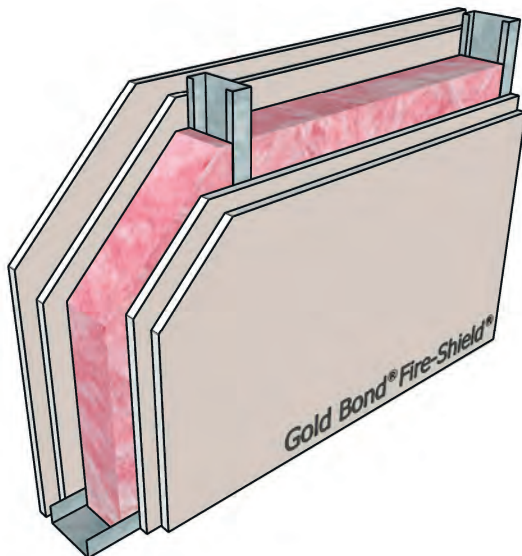
STC-52

NGC 2016024

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 3 layers 5/8" Fire-Shield Gypsum Board

UL Design: V449 - 2 hour

Figure 106



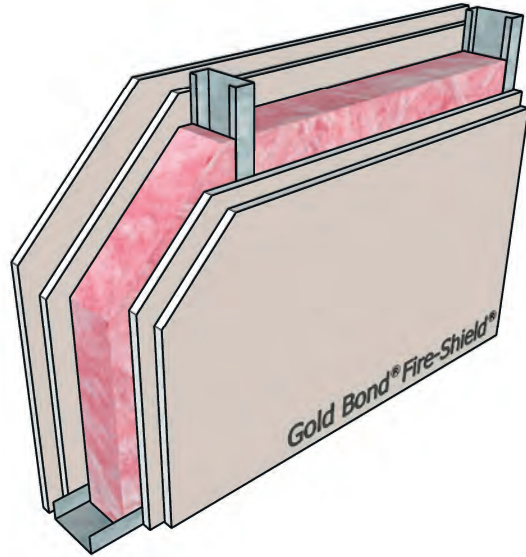
STC-56

NGC 2018058

Framing: 3-5/8" steel studs, 20 gauge (19 mil), 24" o.c.
 Insulation: 3 1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411 - 2 hour

Figure 105



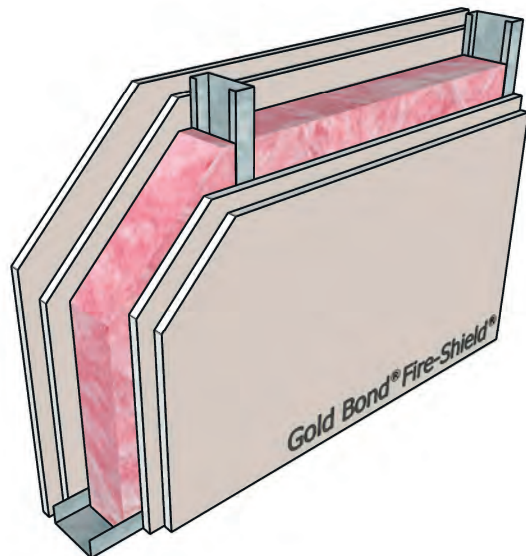
STC-56

NGC 2018112

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3 1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411 - 2 hour

Figure 107



STC-50

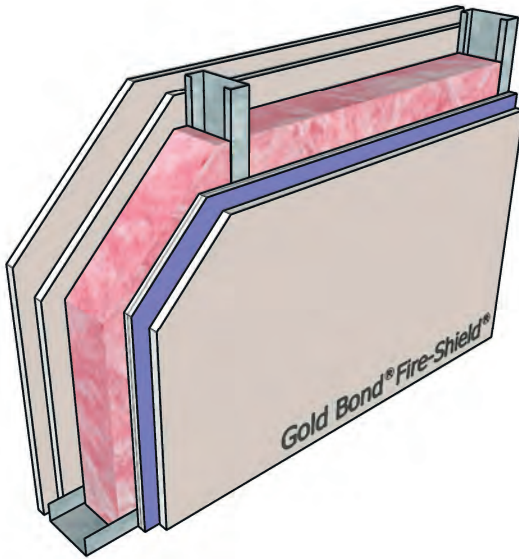
NGC 2017041

Framing: 3-1/2" steel studs, 20 gauge (33 mil), 24" o.c.
 Insulation: 3" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411, W469 - 2 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 108

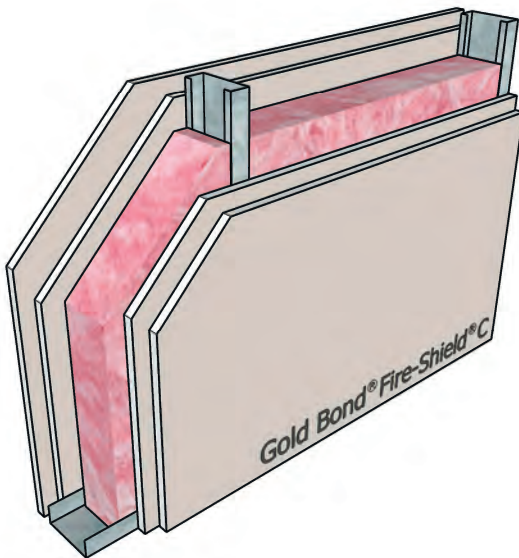


STC-60

RAL-TL07-168

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board
 UL Design: V438, U411 - 2 hour

Figure 110



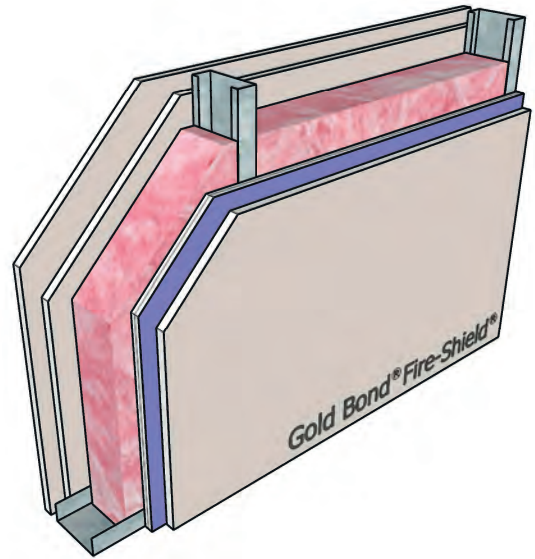
STC-51

NGC 2017011

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3 1/2" glass fiber
 Side 1: 2 layers 1/2" Fire-Shield C Gypsum Board
 Side 2: 2 layers 1/2" Fire-Shield C Gypsum Board

UL Design: V438, U412 - 2 hour

Figure 109

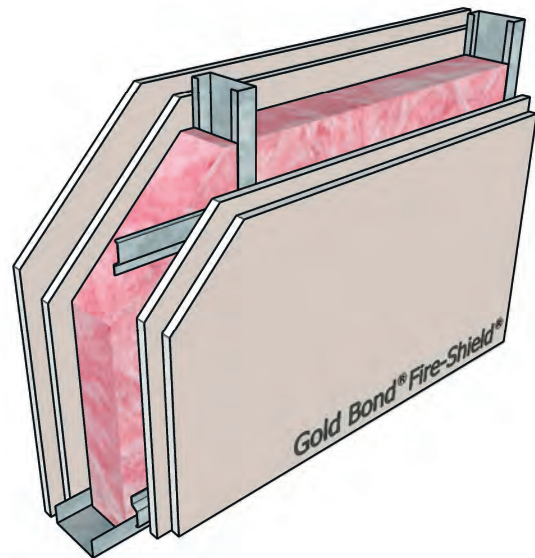


STC-56

NGC 2013018

Framing: 3-5/8" steel studs, 20 gauge (20 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board
 UL Design: V438, U411 - 2 hour

Figure 111



STC-61

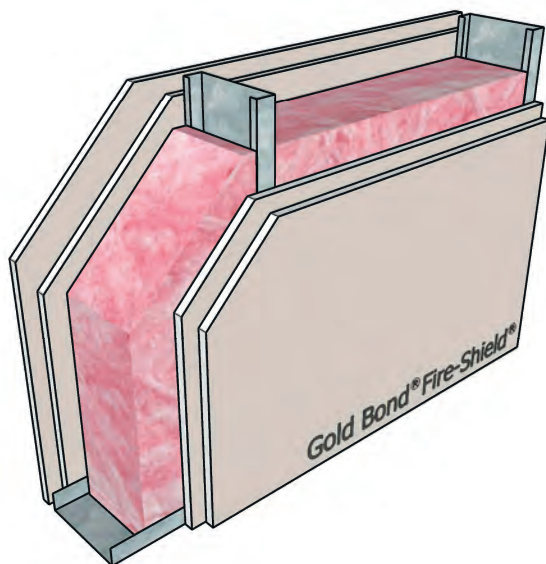
NGC 2017103

Framing: 3-5/8" steel studs, 25 gauge (15 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U411 - 2 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 112



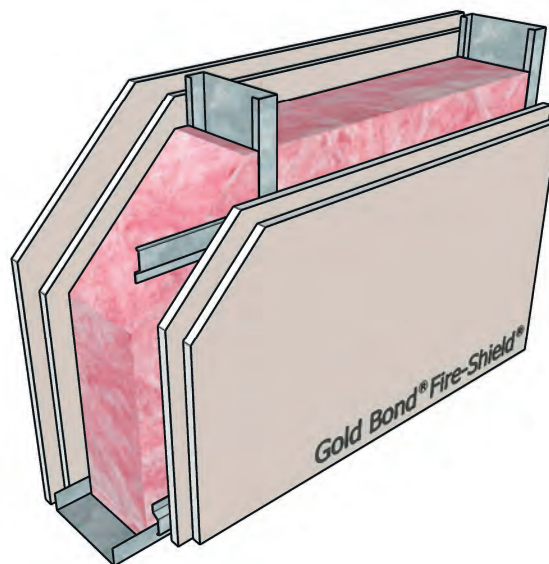
STC-57

NGC 2017119

Framing: 6" steel studs, 25 gauge (15 mil), 24" o.c.
 Insulation: 6" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411 - 2 hour

Figure 113



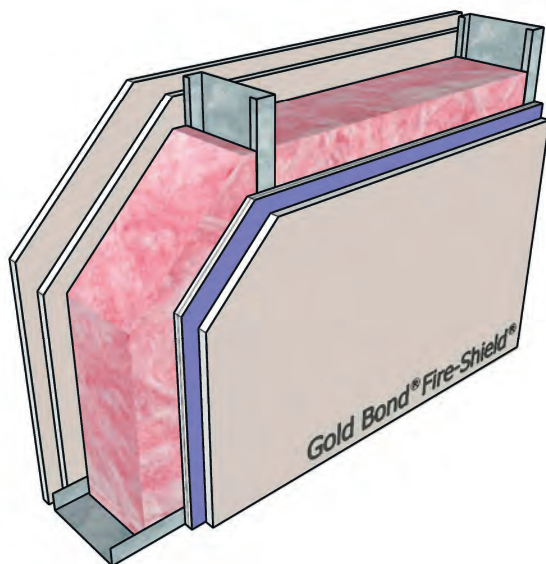
STC-63

NGC 2017118

Framing: 6" steel studs, 25 gauge (15 mil), 24" o.c.
 Insulation: 6" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U411 - 2 hour

Figure 114



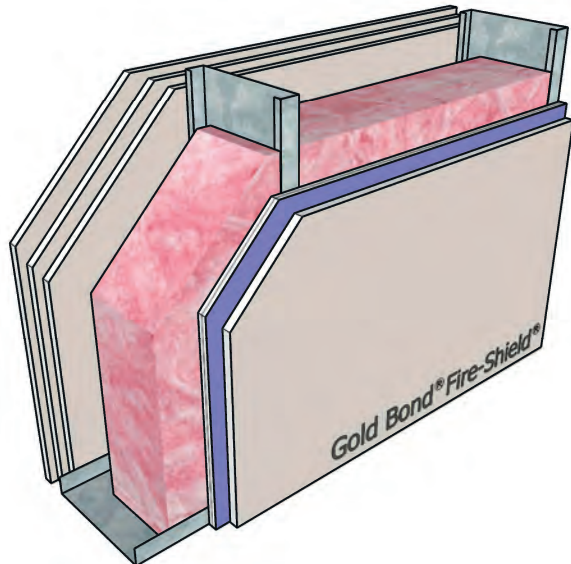
STC-61

NRCC B-3456.2

Framing: 6" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 6" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board

UL Design: V438, U411 - 2 hour

Figure 115



STC-57

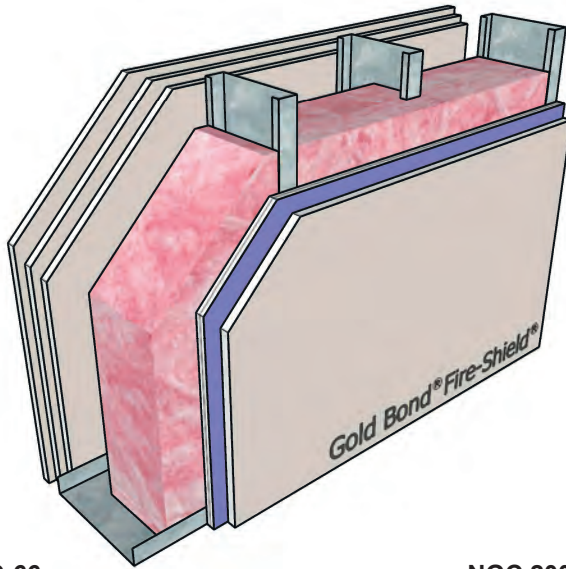
NGC 2009035

Framing: 8" steel studs, 18 gauge (54 mil), 24" o.c.
 Insulation: 6-1/4" glass fiber
 Side 1: 3 layers Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board

UL Design: V438, U411, W469 - 2 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 116

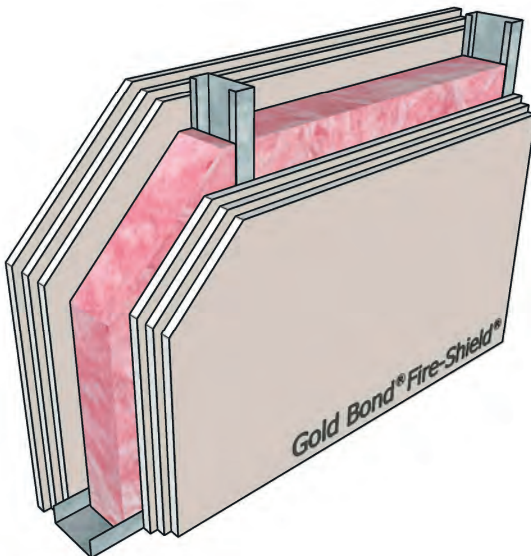


STC-66

NGC 2009036

Framing: 6" steel studs, 18 gauge (43 mil), 24" o.c., staggered in 8" track
 Insulation: 6-1/4" glass fiber
 Side 1: 3 layers Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on 5/8" SoundBreak XP Wall Board
 UL Design: V438, U411, W469 - 2 hour

Figure 118



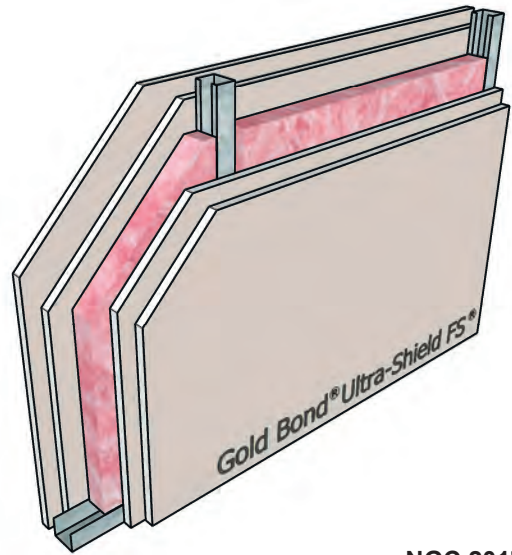
STC-59

NGC 2016101

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 3 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 3 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438 - 3 hour

Figure 117



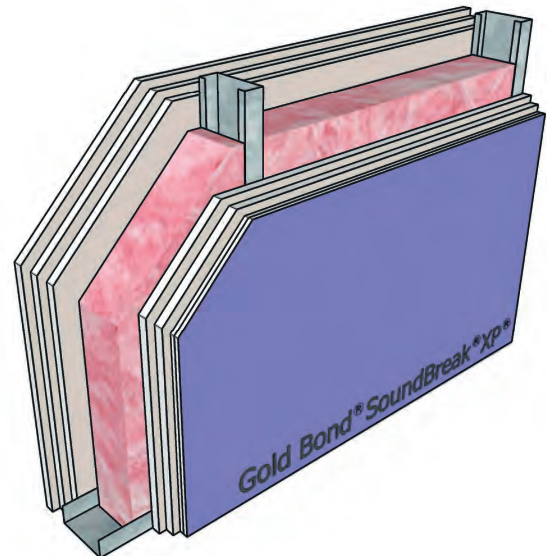
STC-55

NGC 2017037

Framing: 1-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 2 layers 3/4" Ultra-Shield FS Gypsum Board
 Side 2: 2 layers 3/4" Ultra-Shield FS Gypsum Board

UL Design: W455 - 3 hour

Figure 119



STC-62

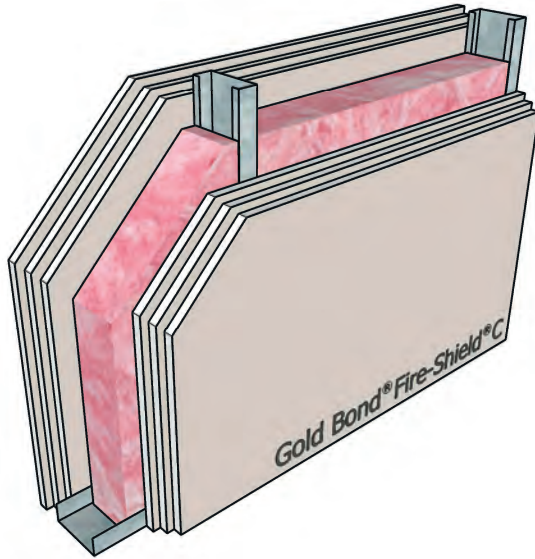
NGC 2016102

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 3 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board on 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438 - 3 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 120



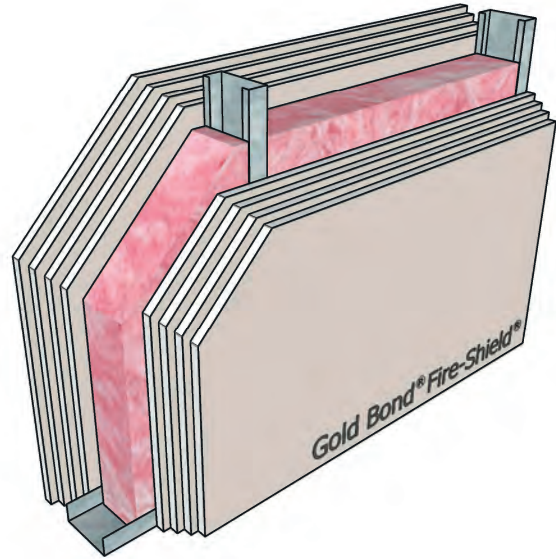
STC-59

NGC 2017012

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 3 layers 1/2" Fire-Shield C Gypsum Board
 Side 2: 3 layers 1/2" Fire-Shield C Gypsum Board

UL Design: U435, V438 - 3 hour

Figure 121



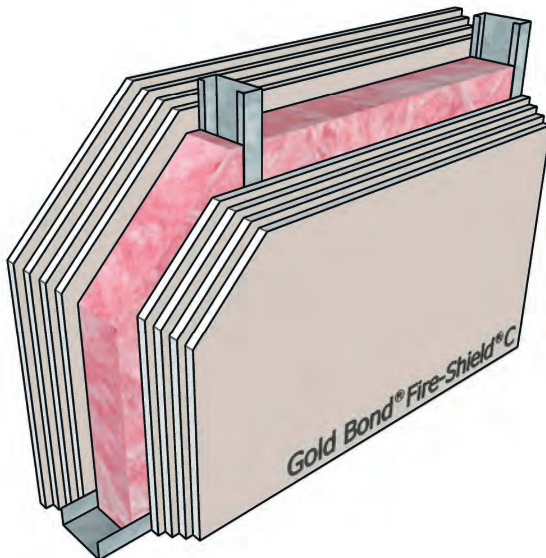
STC-61

NGC 2016100

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 4 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 4 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438 - 4 hour

Figure 122



STC-62

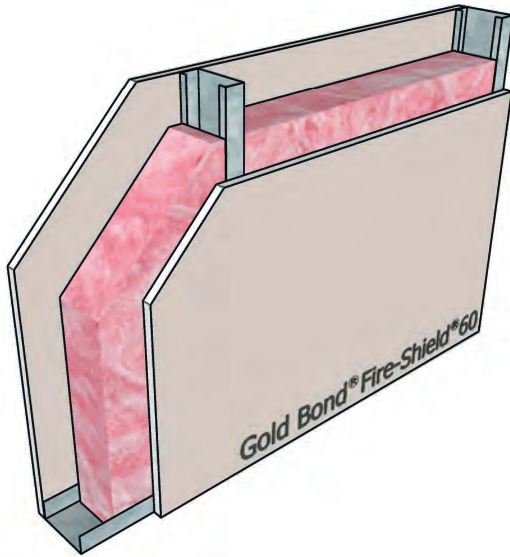
NGC 2017013

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 4 layers 1/2" Fire-Shield C Gypsum Board
 Side 2: 4 layers 1/2" Fire-Shield C Gypsum Board

UL Design: U435, V438 - 4 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 123



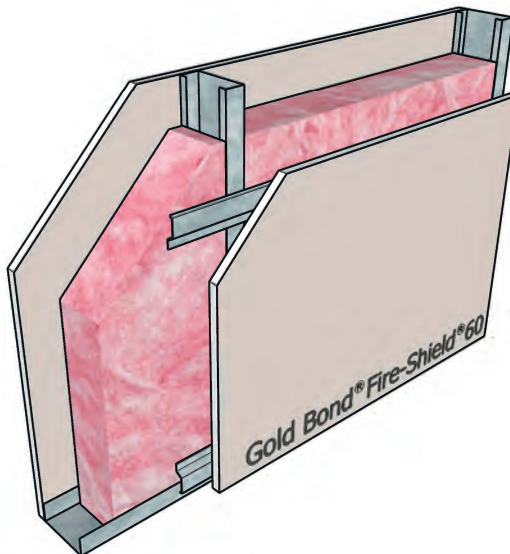
STC-45

NGC 2018155

Framing: 3-5/8" steel studs, 25 gauge (15 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 60 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 60 Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 125



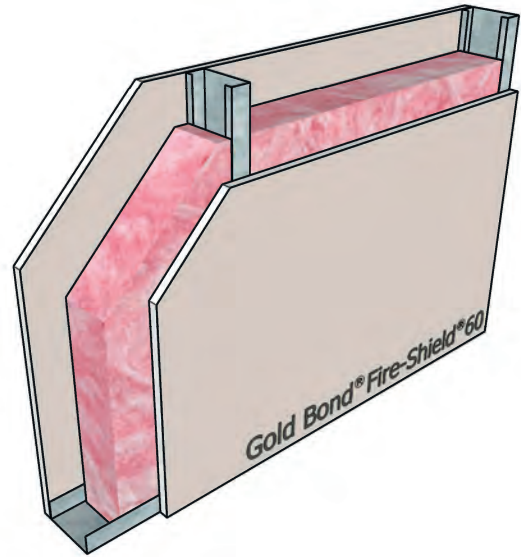
STC-50

NGC 2018157

Framing: 3-5/8" steel studs, 25 gauge (15 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 60 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 60 Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Figure 124



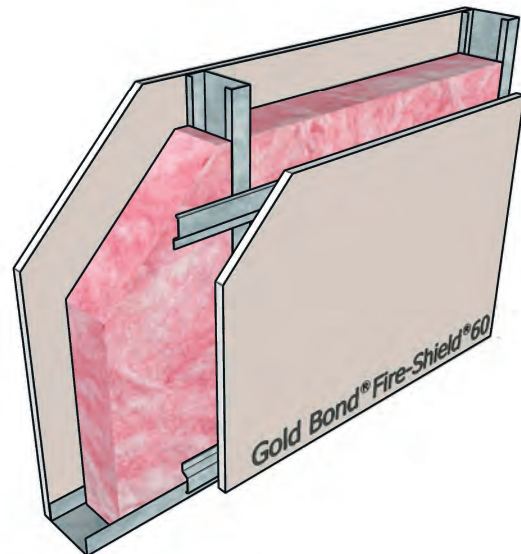
STC-45

NGC 2018165

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 60 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 60 Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 126



STC-49

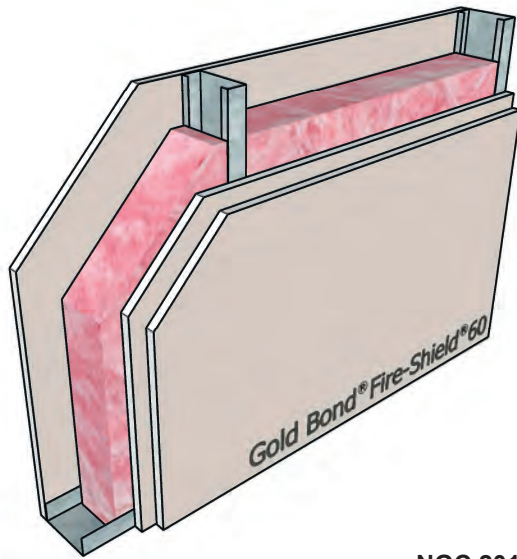
NGC 2018166

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 60 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 60 Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 127



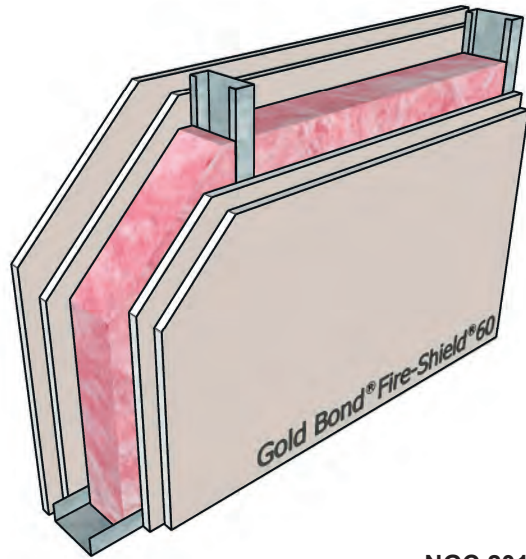
STC-49

NGC 2018164

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 60 Gypsum Board
 Side 2: 2 layers 5/8" High Strength Fire-Shield 60 Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 128



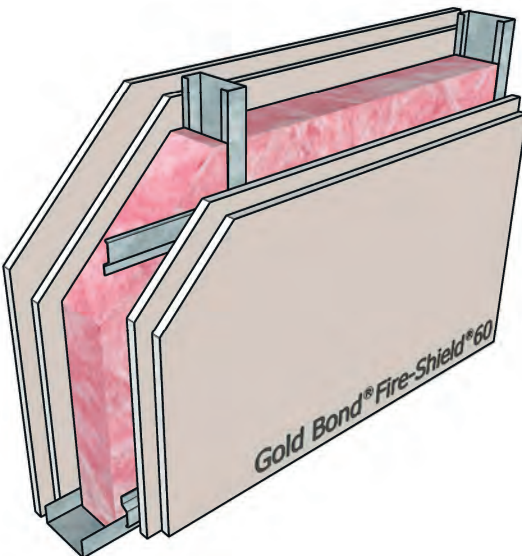
STC-51

NGC 2018163

Framing: 3-5/8" steel studs, 20 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers High Strength 5/8" Fire-Shield 60 Gypsum Board
 Side 2: 2 layers High Strength 5/8" Fire-Shield 60 Gypsum Board

UL Design: V438, U411 - 2 hour

Figure 129



STC-52

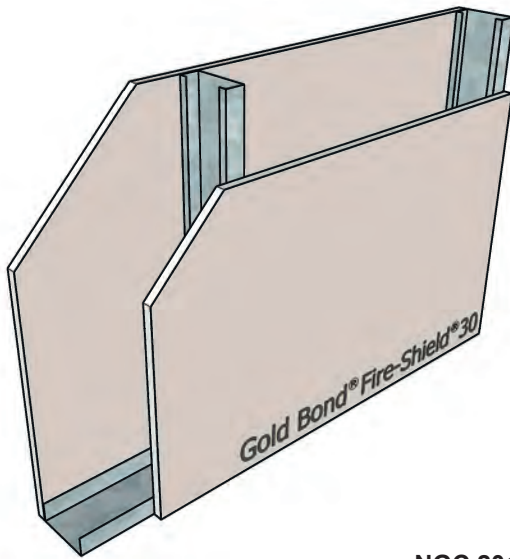
NGC 2018156

Framing: 3-5/8" steel studs, 25 gauge (15 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers High Strength 5/8" Fire-Shield 60 Gypsum Board
 Side 2: 2 layers High Strength 5/8" Fire-Shield 60 Gypsum Board on RC-1

UL Design: V438, U411 - 2 hour

Steel Stud Partitions with Framing 24" o.c.

Figure 130



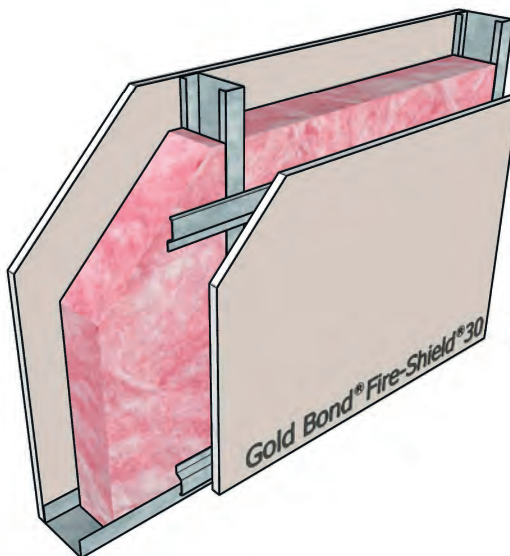
STC-36

NGC 2014006

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: None
 Side 1: 5/8" High Strength Fire-Shield 30 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 30 Gypsum Board

UL Design: W411 - 1/2 hour

Figure 132



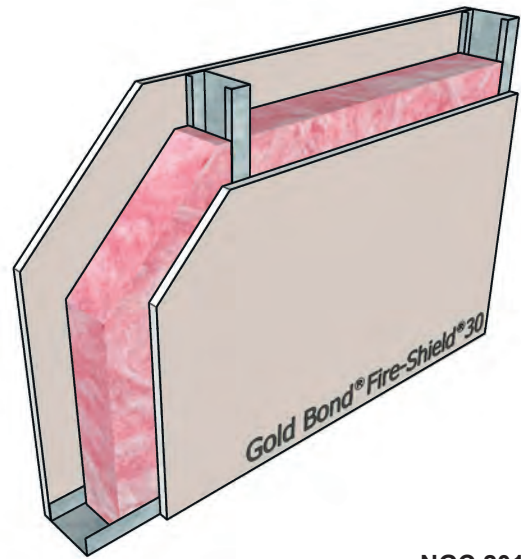
STC-49

NGC 2014007

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 30 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 30 Gypsum Board on RC-1

UL Design: W411 - 1/2 hour

Figure 131



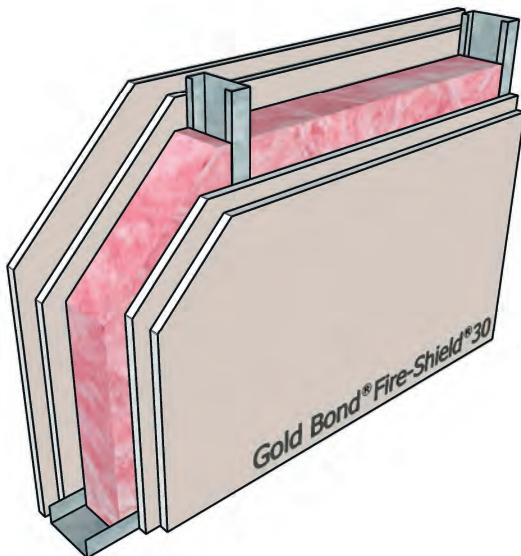
STC-46

NGC 2014005

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" High Strength Fire-Shield 30 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 30 Gypsum Board

UL Design: W411 - 1/2 hour

Figure 133



STC-54

NGC 2014008

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" High Strength Fire-Shield 30 Gypsum Board
 Side 2: 2 layers 5/8" High Strength Fire-Shield 30 Gypsum Board

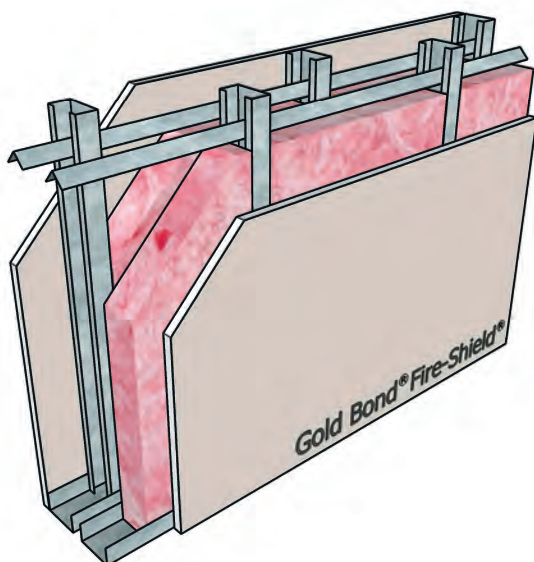
UL Design: W411 - 1 hour

Steel Stud Chase Walls



Steel Stud Chase Walls

Figure 134

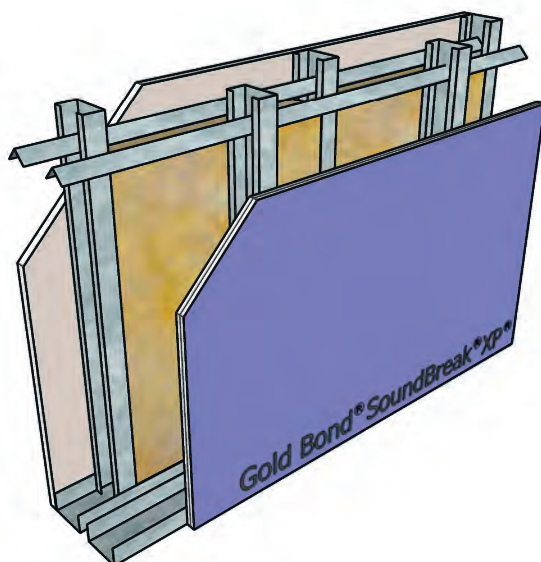


STC-57

NGC 2015101

Framing: Double row 2-1/2" steel studs, 25 gauge (15 mil), 16" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board
 UL Design: V488 - 1 hour

Figure 136

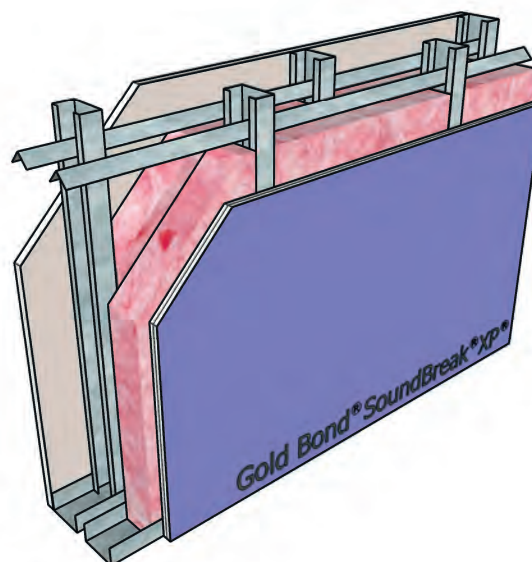


STC-57

NGC 2008035

Framing: Double row 2-1/2" steel studs, 25 gauge (18 mil), 16" o.c. staggered
 Insulation: 3" mineral wool
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board
 UL Design: V488 - 1 hour

Figure 135

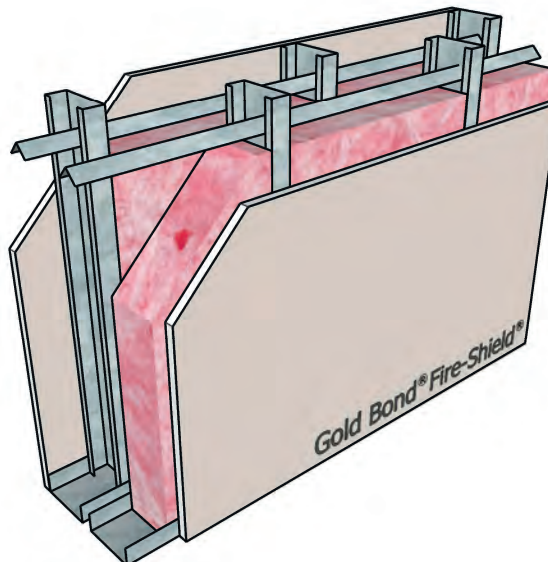


STC-60

NGC 2015103

Framing: Double row 2-1/2" steel studs, 25 gauge (15 mil), 16" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board
 UL Design: V488 - 1 hour

Figure 137



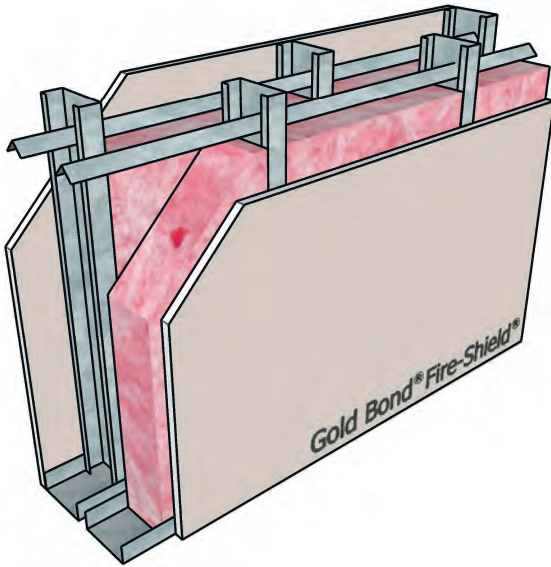
STC-60

NGC 2018083

Framing: Double row 3-5/8" steel studs, 20 gauge (19 mil), 16" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board
 UL Design: V488 - 1 hour

Steel Stud Chase Walls

Figure 138

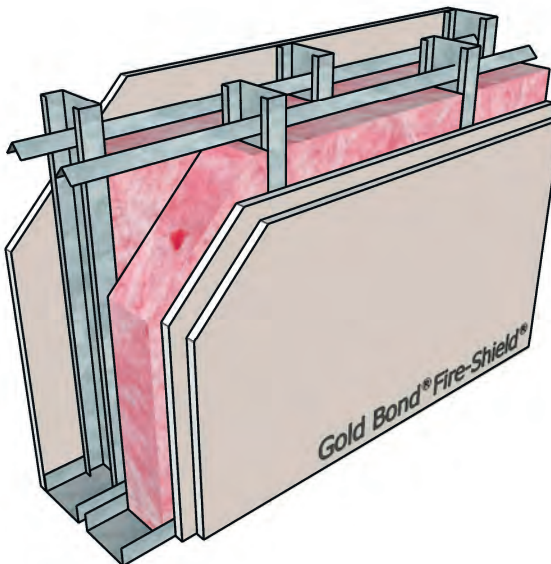


STC-55

NGC 2019036

Framing: Double row 3-5/8" steel studs, 16 gauge (54 mil), 16" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board
 UL Design: V488 - 1 hour

Figure 140



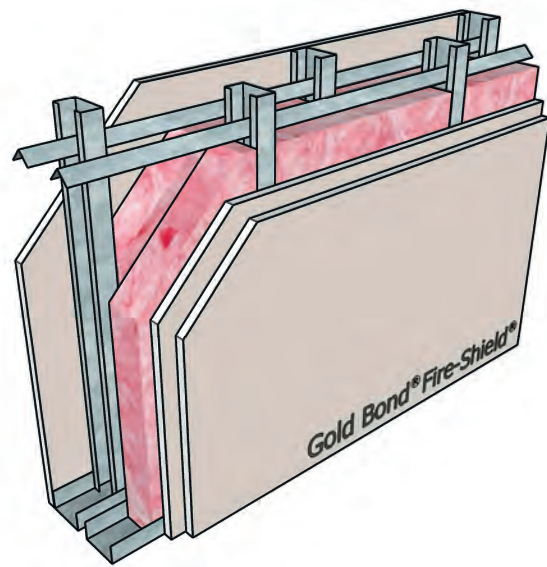
STC-63

NGC 2018084

Framing: Double row 3-5/8" steel studs, 20 gauge (19 mil), 16" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V488 - 1 hour

Figure 139

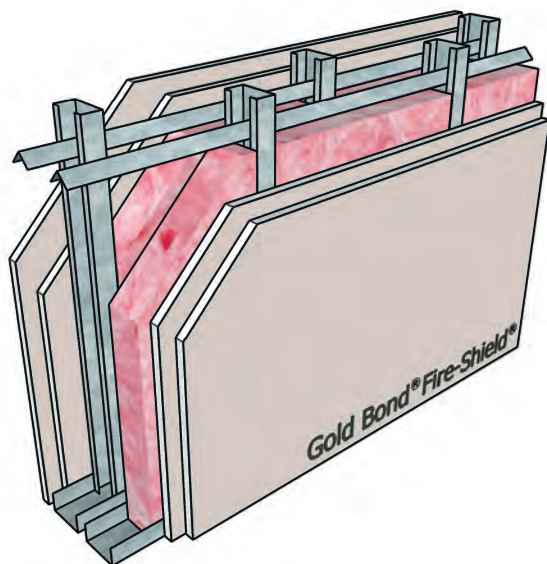


STC-61

NGC 2015102

Framing: Double row 2-1/2" steel studs, 25 gauge (15 mil), 16" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board
 UL Design: V488 - 1 hour

Figure 141



STC-64

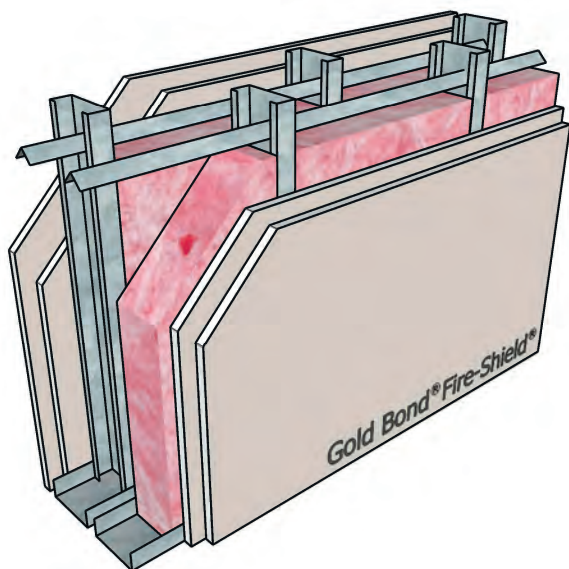
NGC 2015104

Framing: Double row 2-1/2" steel studs, 25 gauge (15 mil), 16" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V488 - 2 hour

Steel Stud Chase Walls

Figure 142

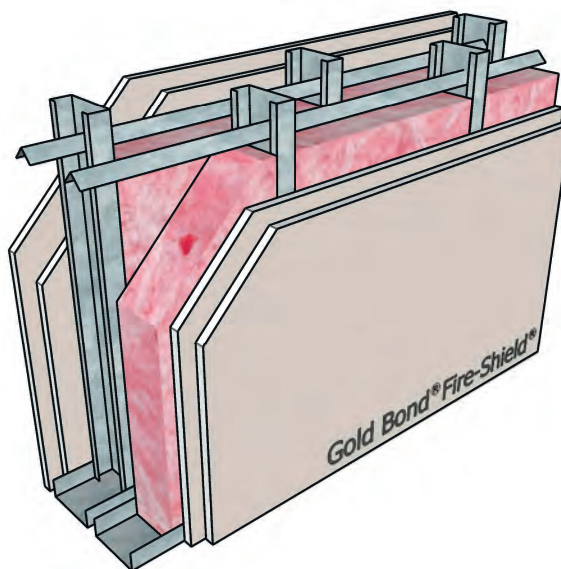


STC-67

NGC 2018085

Framing: Double row 3-5/8" steel studs, 20 gauge (19 mil), 16" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board
 UL Design: V488 - 2 hour

Figure 143

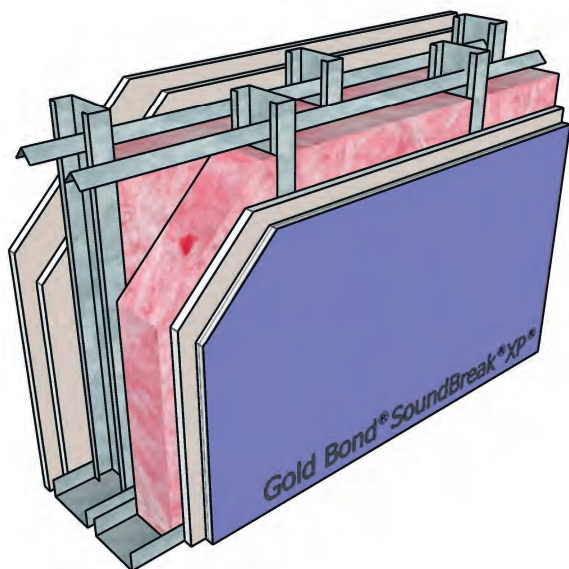


STC-63

NGC 2019038

Framing: Double row 3-5/8" steel studs, 16 gauge (54 mil), 16" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board
 UL Design: V488 - 2 hour

Figure 144



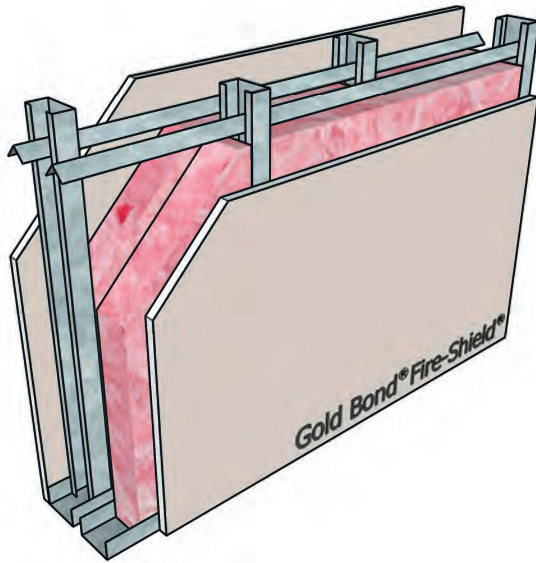
STC-66

NGC 2019037

Framing: Double row 3-5/8" steel studs, 16 gauge (54 mil), 16" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board on 5/8" Fire-Shield Gypsum Board
 UL Design: V488 - 2 hour

Steel Stud Chase Walls

Figure 145

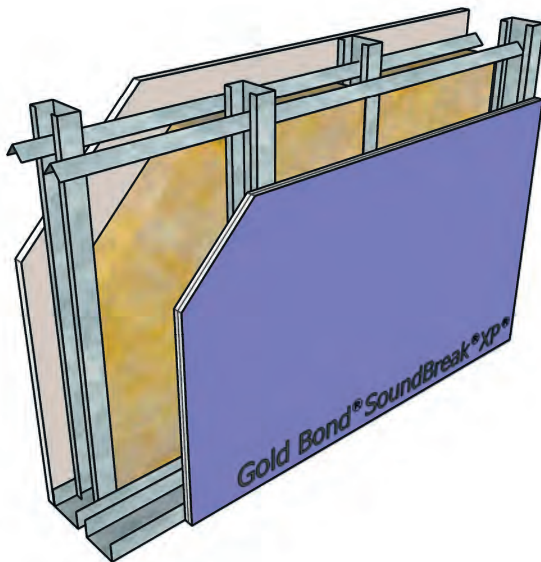


STC-56

NGC 2015108

Framing: Double row 2-1/2" steel studs, 25 gauge (15 mil), 24" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board
 UL Design: V488 - 1 hour

Figure 147

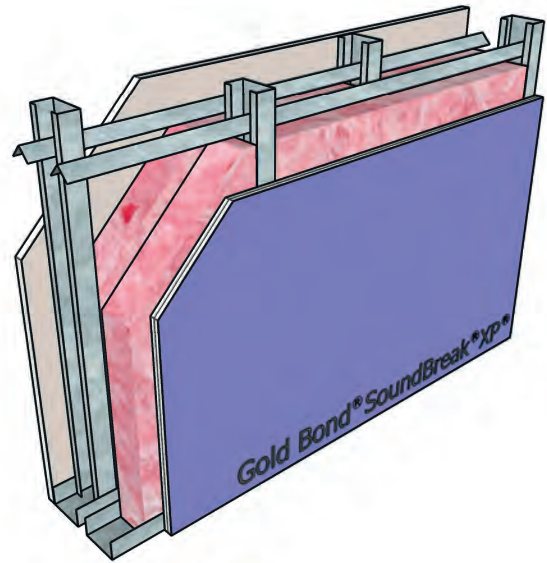


STC-59

NGC 2008036

Framing: Double row 2-1/2" steel studs, 25 gauge (18 mil), 24" o.c. staggered
 Insulation: 3" mineral wool
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board
 UL Design: V488 - 1 hour

Figure 146

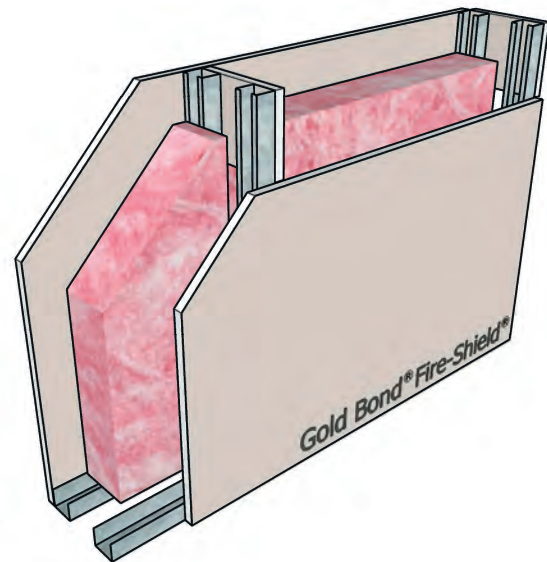


STC-60

NGC 2015107

Framing: Double row 2-1/2" steel studs, 25 gauge (15 mil), 24" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board
 UL Design: V488 - 1 hour

Figure 148



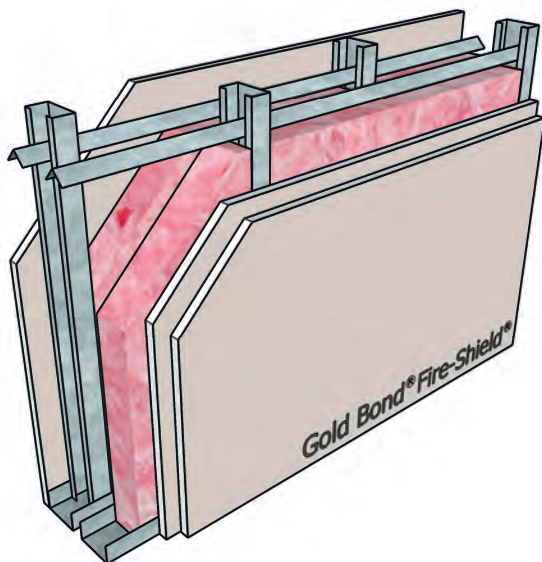
STC-52

RAL-TL76-155

Framing: Double row 1-5/8" steel studs, 25 gauge (18 mil) 24" o.c., braced with gypsum board gussets
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board
 UL Design: U420 - 1 hour

Steel Stud Chase Walls

Figure 149

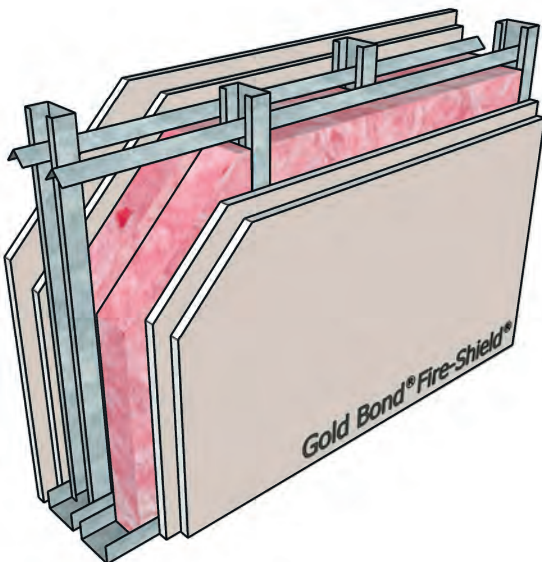


STC-60

NGC 2015109

Framing: Double row 2-1/2" steel studs, 25 gauge (15 mil), 24" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board
 UL Design: V488 - 1 hour

Figure 151

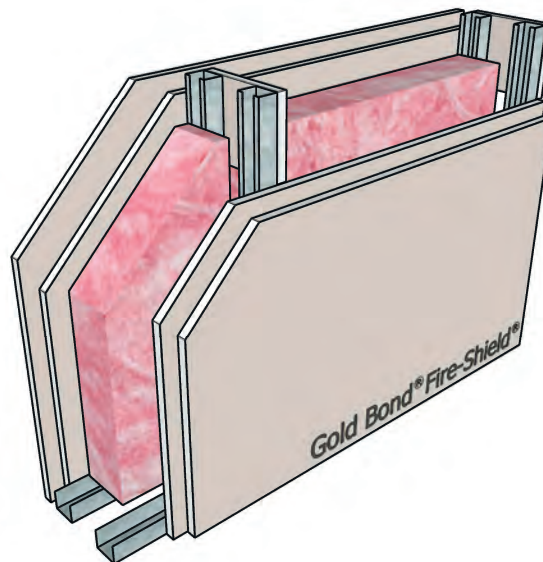


STC-64

NGC 2015112

Framing: Double row 2-1/2" steel studs, 25 gauge (15 mil), 24" o.c., braced with spacer bar
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board
 UL Design: V488 - 2 hour

Figure 150



STC-57

RAL-TL76-156

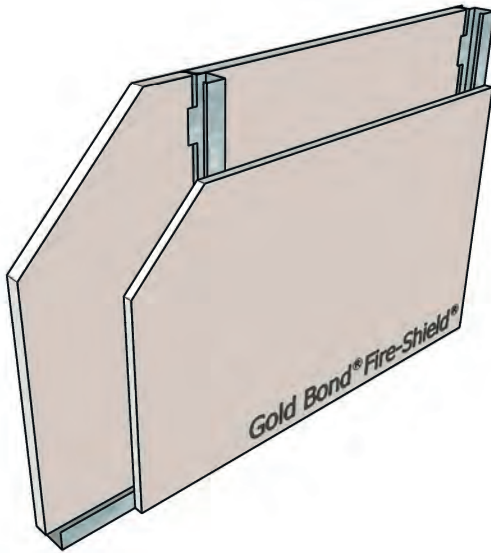
Framing: Double row 1-5/8" steel studs, 25 gauge (18 mil) 24" o.c., braced with gypsum board gussets
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board
 UL Design: U420 - 2 hour

Shaftwall Partitions



Shaftwall Partitions

Figure 152



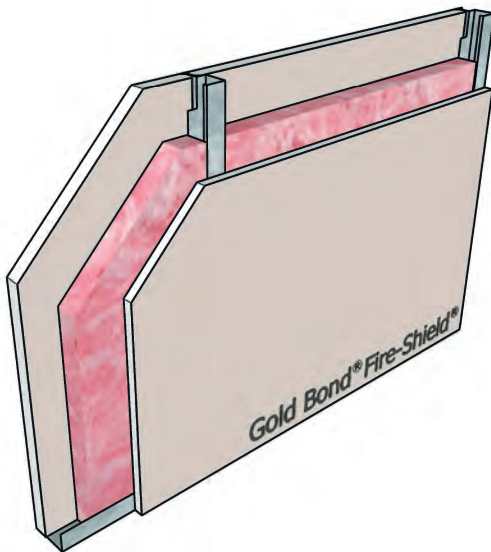
STC-34

NGC 2001001

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: None
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U499, W419 - 1 hour

Figure 154



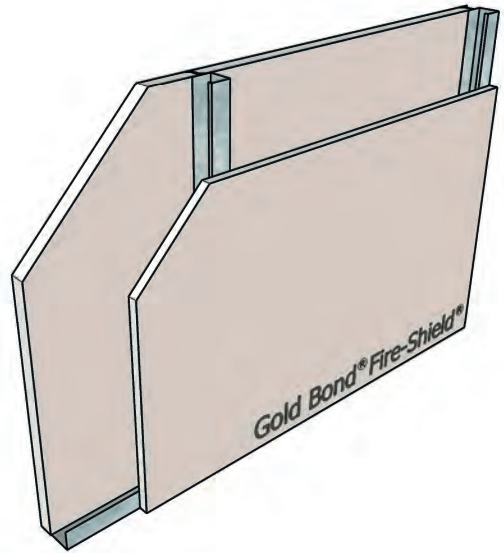
STC-42

NGC 2016033

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U499, W419 - 1 hour

Figure 153



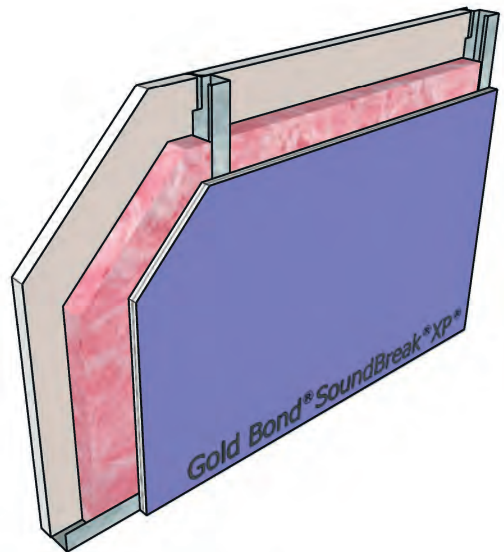
STC-37

NGC 2001003

Framing: 2-1/2" steel CH studs, 25 gauge (22 mil), 24" o.c.
 Insulation: None
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U499, W419 - 1 hour

Figure 155



STC-44

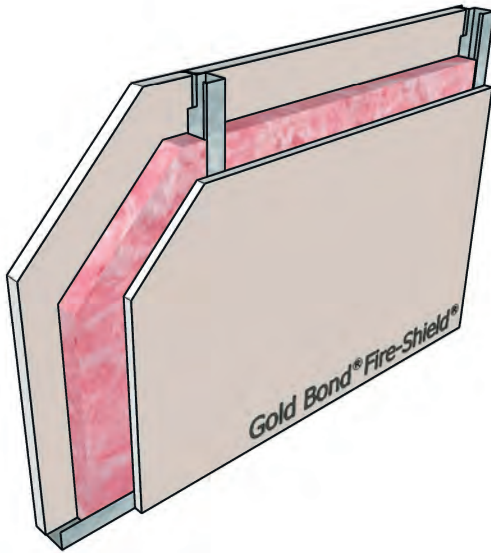
NGC 2015035

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: U499, W419 - 1 hour

Shaftwall Partitions

Figure 156



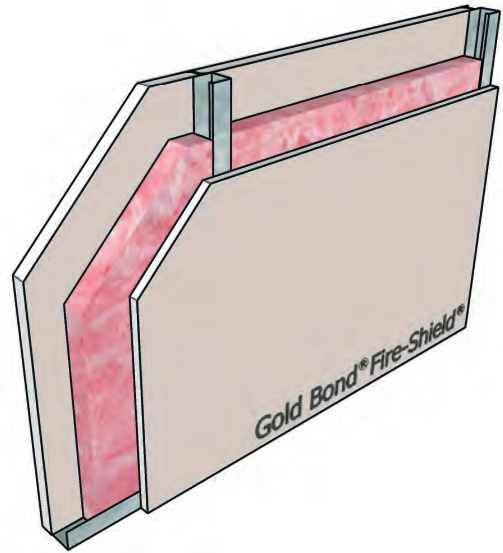
STC-43

NGC 2019008

Framing: 2-1/2" steel CT studs, 18 gauge (43 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U499, W419 - 1 hour

Figure 157



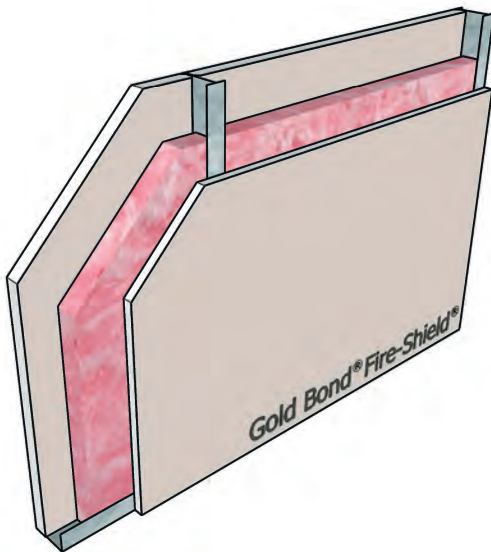
STC-40

NGC 2001005

Framing: 2-1/2" steel CH studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U499, W419 - 1 hour

Figure 158



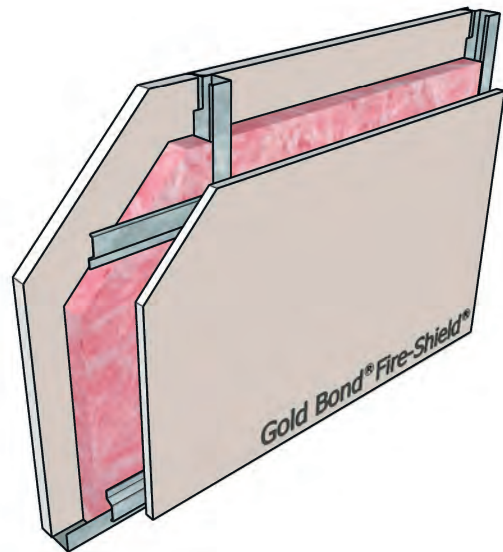
STC-42

NGC 2542

Framing: 2-1/2" steel I-studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U499, W419 - 1 hour

Figure 159



STC-44

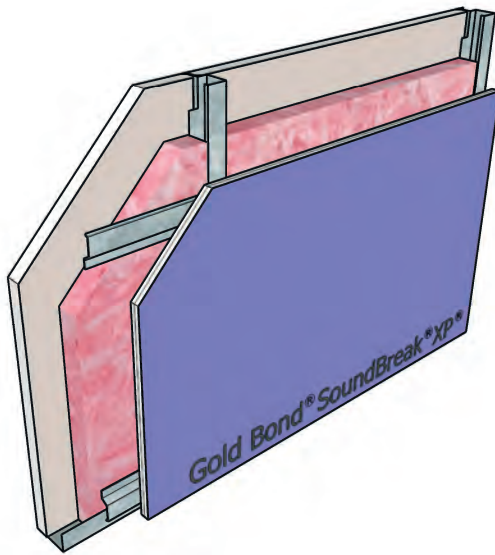
NGC 2016036

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: U499, W419 - 1 hour

Shaftwall Partitions

Figure 160



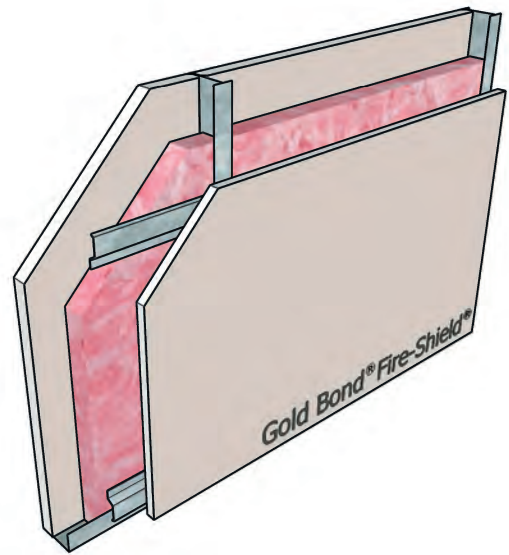
STC-47

NGC 2015038

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" SoundBreak XP Wall Board on RC-1

UL Design: U499, W419 - 1 hour

Figure 161



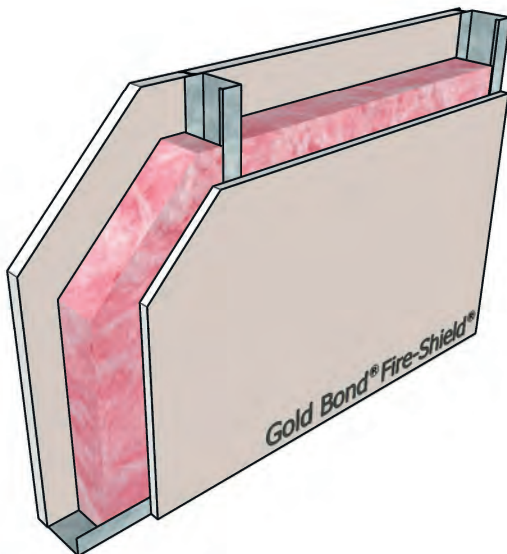
STC-48

NGC 2541

Framing: 2-1/2" steel I-studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: U499, W419 - 1 hour

Figure 162



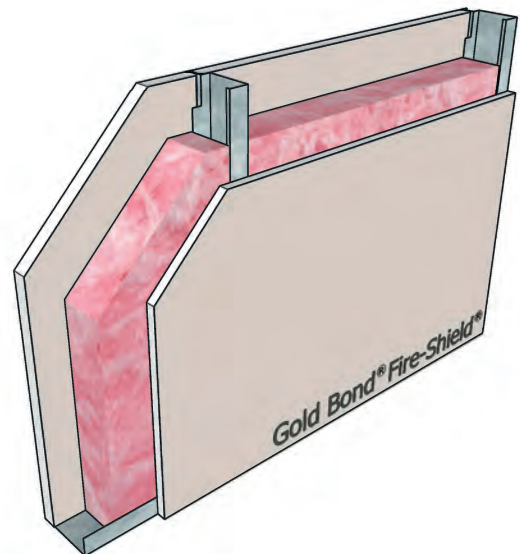
STC-47

NGC 2015044

Framing: 4" steel CH studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 3" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U499, W419 - 1 hour

Figure 163



STC-47

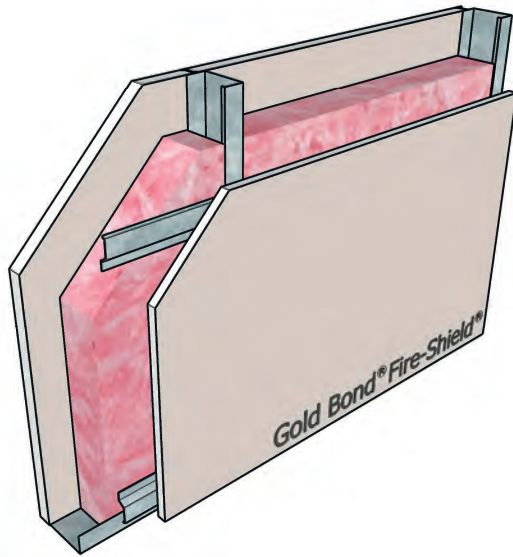
NGC 2019011

Framing: 4" steel CT studs, 18 gauge (43 mil), 24" o.c.
 Insulation: 3" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U499, W419 - 1 hour

Shaftwall Partitions

Figure 164



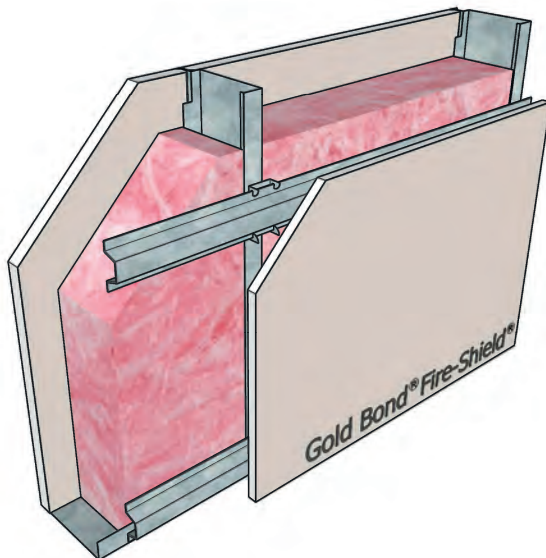
STC-51

NGC 2015047

Framing: 4" steel CH studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 3" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: U499, W419 - 1 hour

Figure 166



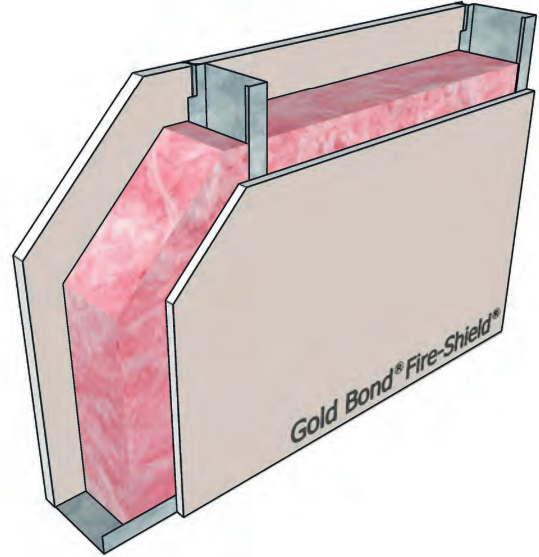
STC-59

NGC 2019017

Framing: 6" steel CT studs, 20 gauge (33 mil), 24" o.c.
 Insulation: 5" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board on 7/8" furring channel and resilient isolation clips

UL Design: U499, W419 - 1 hour

Figure 165



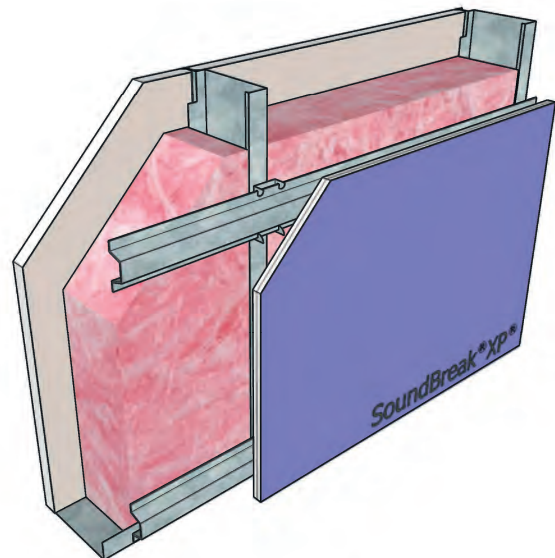
STC-53

NGC 2019014

Framing: 6" steel CT studs, 20 gauge (33 mil), 24" o.c.
 Insulation: 5" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U499, W419 - 1 hour

Figure 167



STC-61

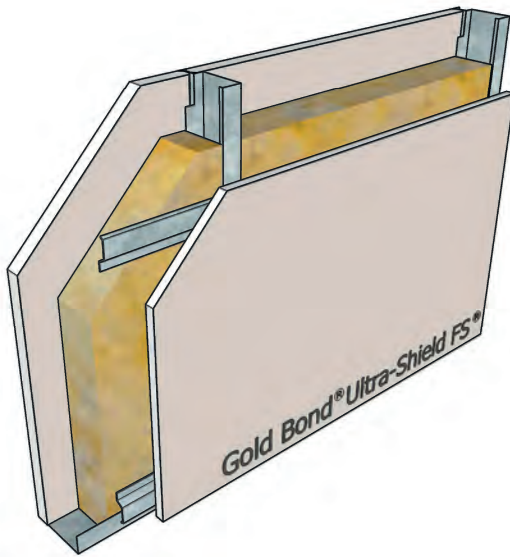
NGC 2019019

Framing: 6" steel CT studs, 20 gauge (33 mil), 24" o.c.
 Insulation: 5" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" SoundBreak XP Wall Board on 7/8" furring channel and resilient isolation clips

UL Design: U499, W419 - 1 hour

Shaftwall Partitions

Figure 168



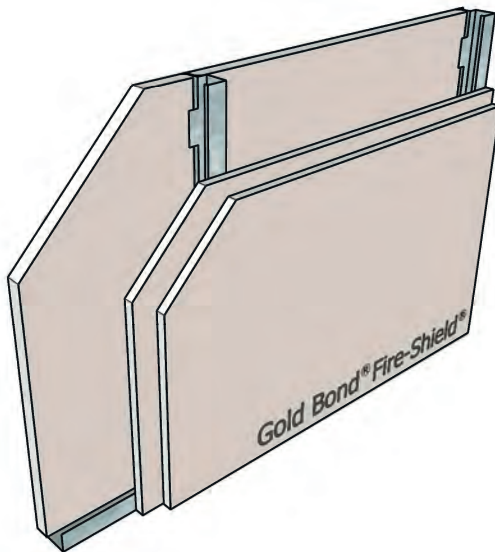
STC-54

NGC 2015042

Framing: 4" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 3" mineral wool
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 3/4" Ultra-Shield Gypsum Board on RC-1

UL Design: W441, W419 - 2 hour

Figure 170



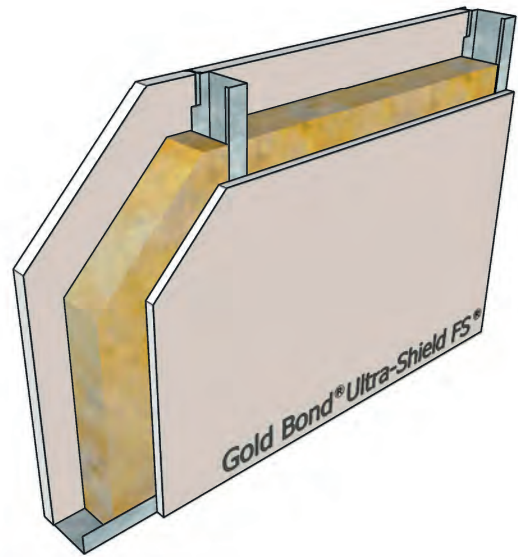
STC-40

NGC 2001004

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: None
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: U497, W419 - 2 hour

Figure 169



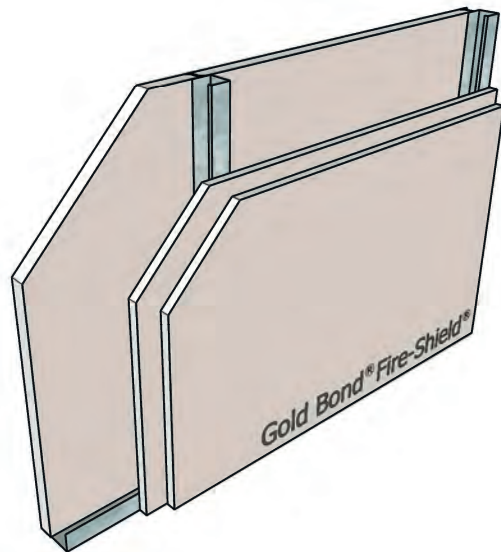
STC-51

NGC 2015043

Framing: 4" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 3" mineral wool
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 3/4" Ultra-Shield Gypsum Board

UL Design: W441, W419 - 2 hour

Figure 171



STC-39

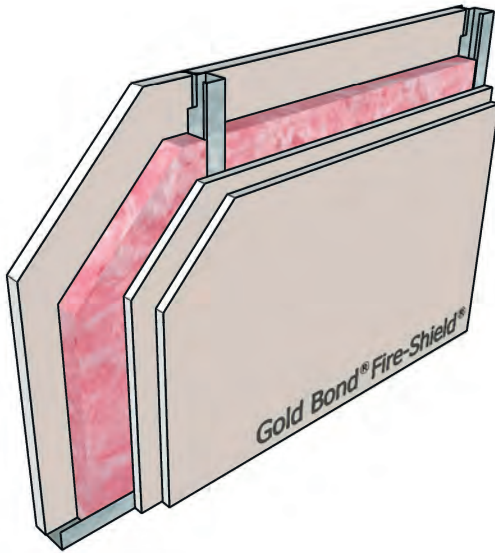
NGC 2001002

Framing: 2-1/2" steel CH studs, 25 gauge (22 mil), 24" o.c.
 Insulation: None
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: U497, W419 - 2 hour

Shaftwall Partitions

Figure 172



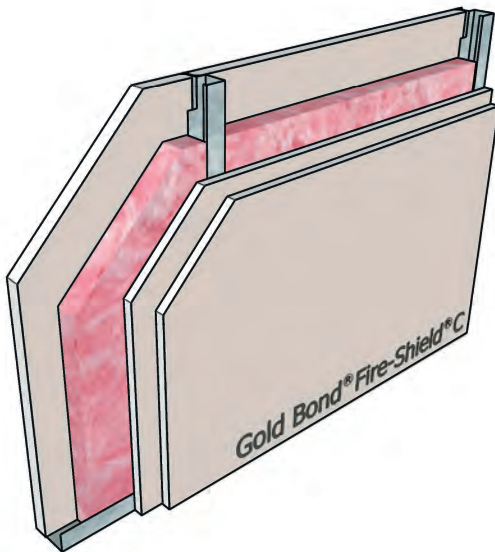
STC-47

NGC 2016035

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: U497, W419 - 2 hour

Figure 174



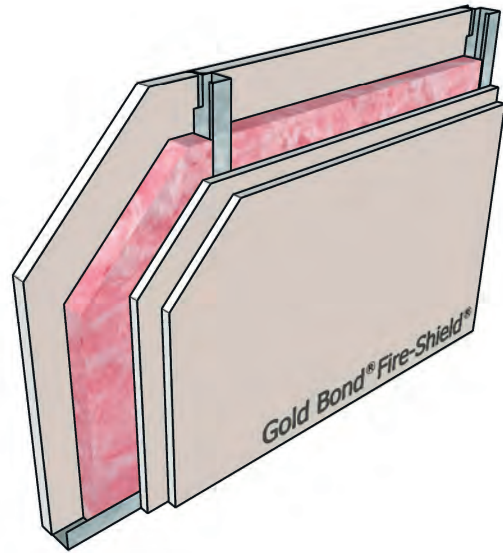
STC-47

NGC 2019009

Framing: 2-1/2" steel CT studs, 18 gauge (43 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 1/2" Fire-Shield C Gypsum Board

UL Design: U497, W419 - 2 hour

Figure 173



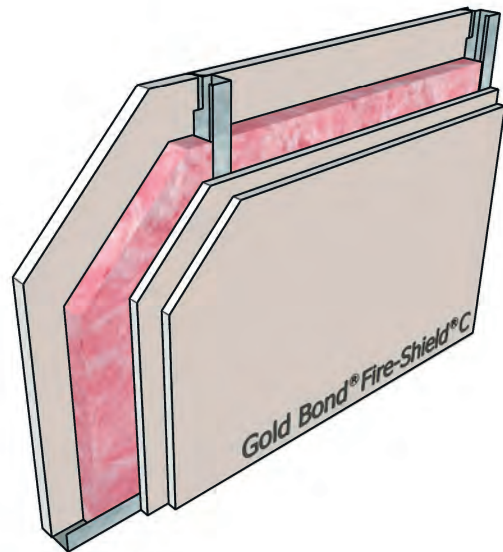
STC-46

NGC 2019007

Framing: 2-1/2" steel CT studs, 18 gauge (43 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: U497, W419 - 2 hour

Figure 175



STC-49

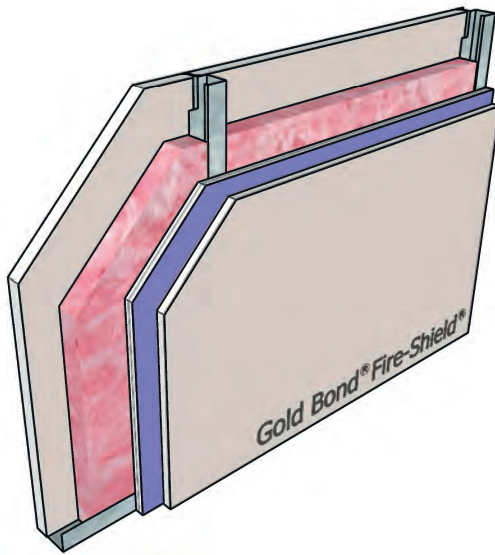
NGC 2017006

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 1/2" Fire-Shield C Gypsum Board

UL Design: U497, W419 - 2 hour

Shaftwall Partitions

Figure 176

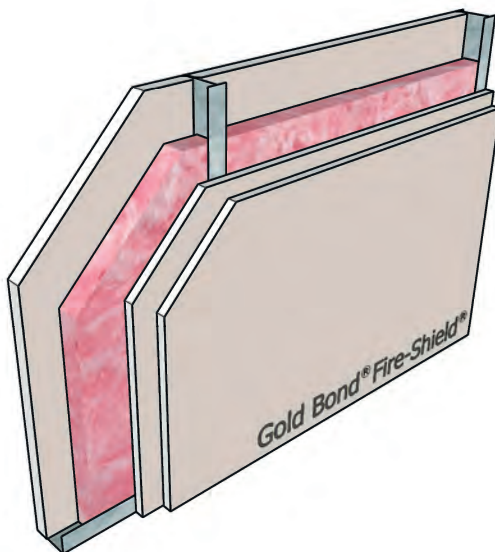


STC-51

NGC 2015037

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board
 UL Design: U497, W419 - 2 hour

Figure 178



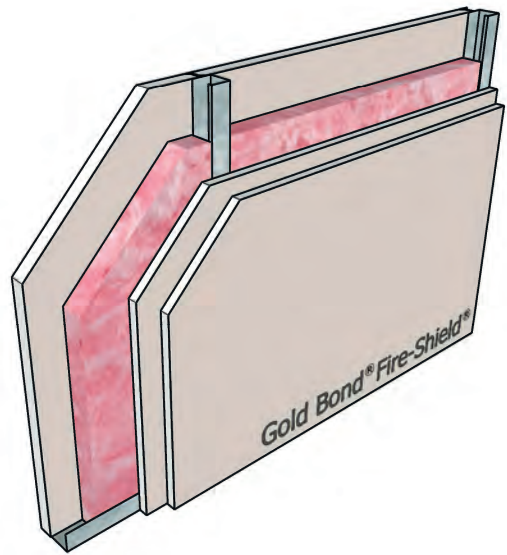
STC-48

NGC 2507

Framing: 2-1/2" steel I-studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: U497, W419 - 2 hour

Figure 177



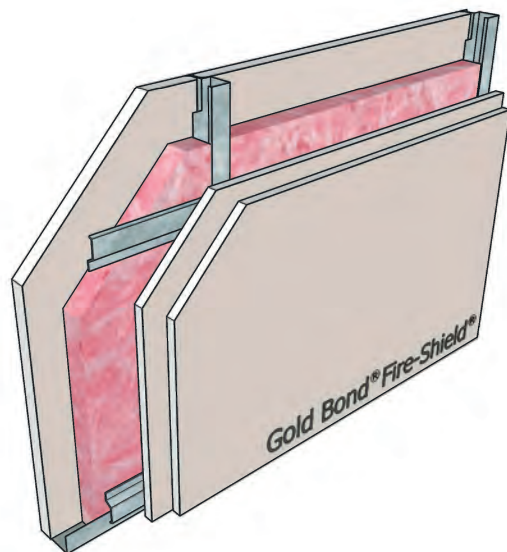
STC-46

NGC 2001006

Framing: 2-1/2" steel CH studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: U497, W419 - 2 hour

Figure 179



STC-51

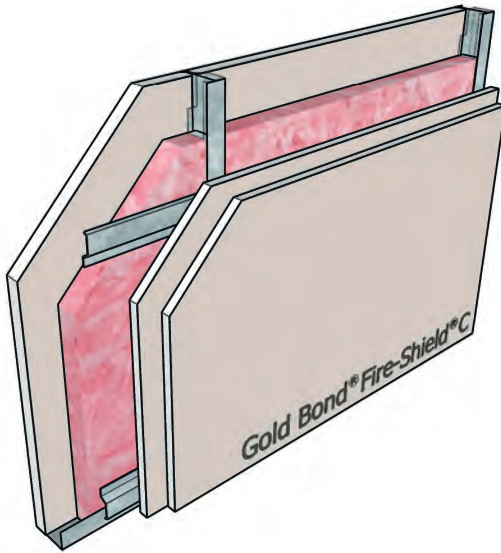
NGC 2016038

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: U497, W419 - 2 hour

Shaftwall Partitions

Figure 180

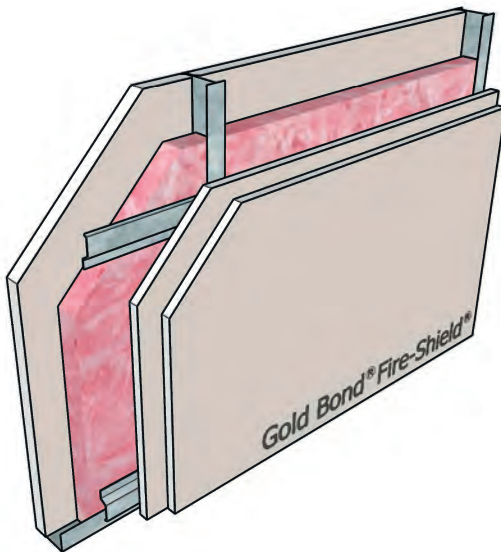


STC-52

NGC 2017007

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 1/2" Fire-Shield C Gypsum Board on RC-1
 UL Design: U497, W419 - 2 hour

Figure 182



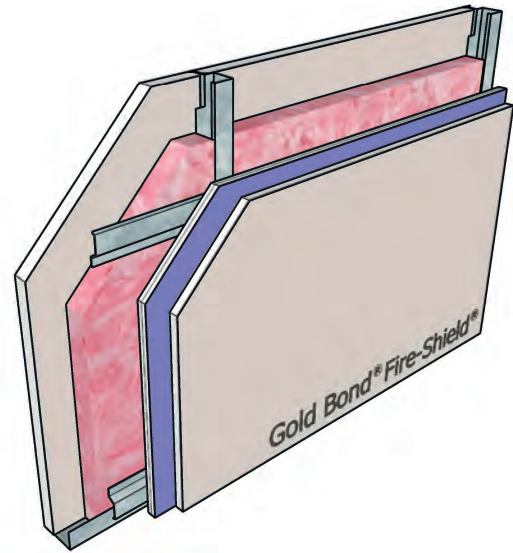
STC-51

NGC 2540

Framing: 2-1/2" steel I-studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: U497, W419 - 2 hour

Figure 181

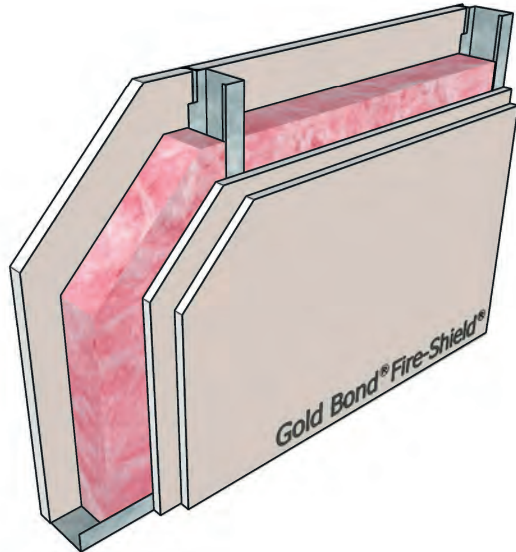


STC-53

NGC 2015039

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board on 5/8" SoundBreak XP Wall Board on RC-1
 UL Design: U497, W419 - 2 hour

Figure 183



STC-51

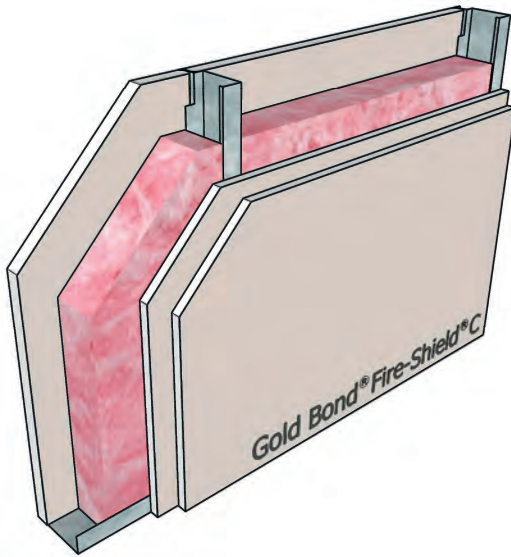
NGC 2019012

Framing: 4" steel CT studs, 18 gauge (43 mil), 24" o.c.
 Insulation: 3" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: U497, W419 - 2 hour

Shaftwall Partitions

Figure 184



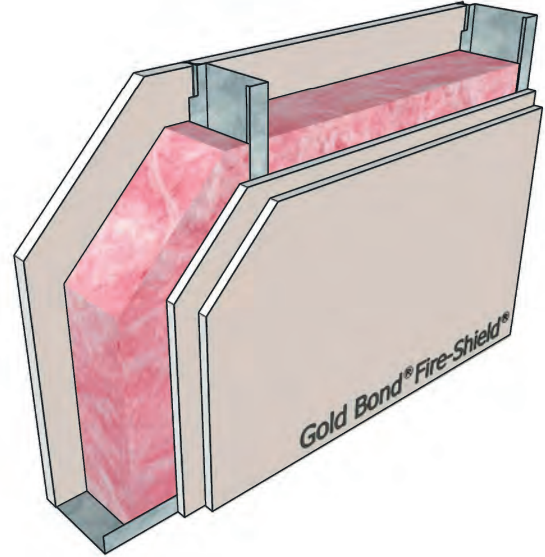
STC-50

NGC 2019010

Framing: 4" steel CT studs, 18 gauge (43 mil), 24" o.c.
 Insulation: 3" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 1/2" Fire-Shield C Gypsum Board

UL Design: U497, W419 - 2 hour

Figure 185



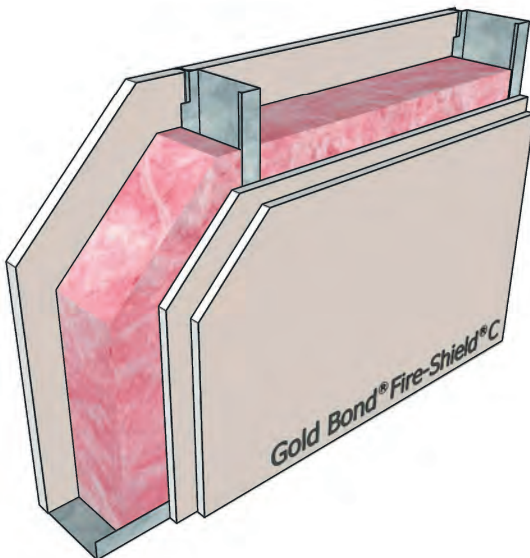
STC-51

NGC 2019013

Framing: 6" steel CT studs, 20 gauge (33 mil), 24" o.c.
 Insulation: 5" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: U497, W419 - 2 hour

Figure 186



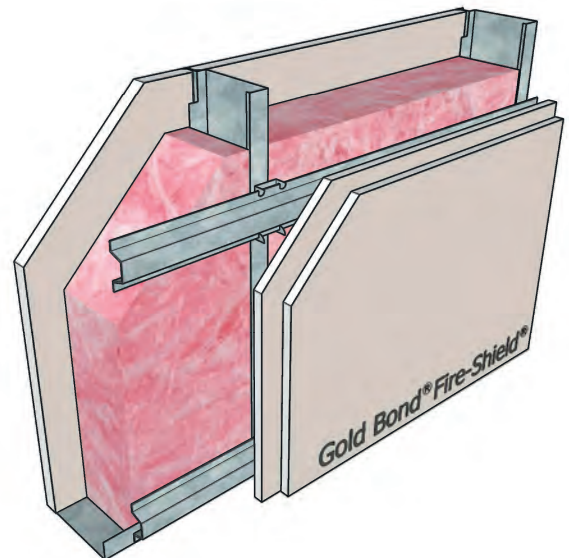
STC-53

NGC 2019015

Framing: 6" steel CT studs, 20 gauge (33 mil), 24" o.c.
 Insulation: 5" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 1/2" Fire-Shield C Gypsum Board

UL Design: U497, W419 - 2 hour

Figure 187



STC-61

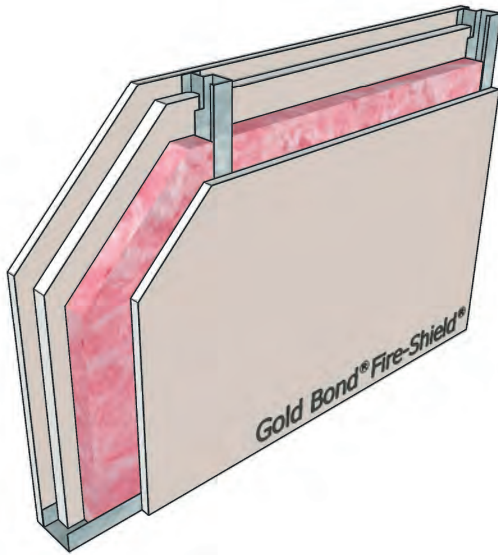
NGC 2019016

Framing: 6" steel CT studs, 20 gauge (33 mil), 24" o.c.
 Insulation: 5" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on 7/8" furring channel and resilient isolation clips

UL Design: U497, W419 - 2 hour

Shaftwall Partitions

Figure 188

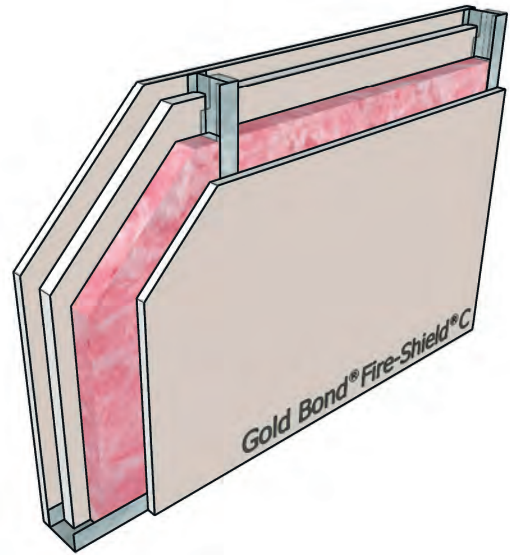


STC-48

NGC 2016034

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board on
 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board
 UL Design: U498, W419 - 2 hour

Figure 189

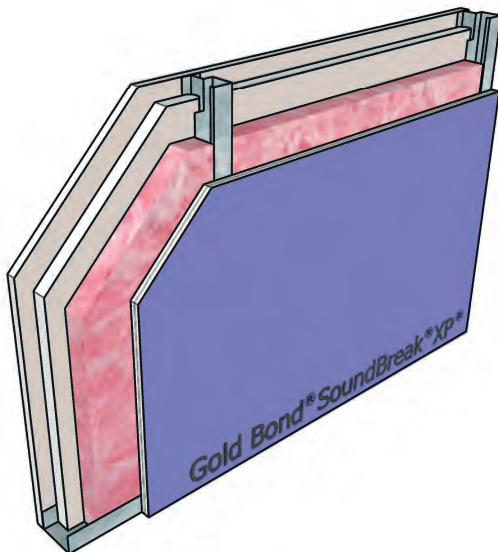


STC-48

NGC 2017005

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1/2" Fire-Shield C Gypsum Board on
 1" Fire-Shield Shaftliner
 Side 2: 1/2" Fire-Shield C Gypsum Board
 UL Design: U498, W419 - 2 hour

Figure 190

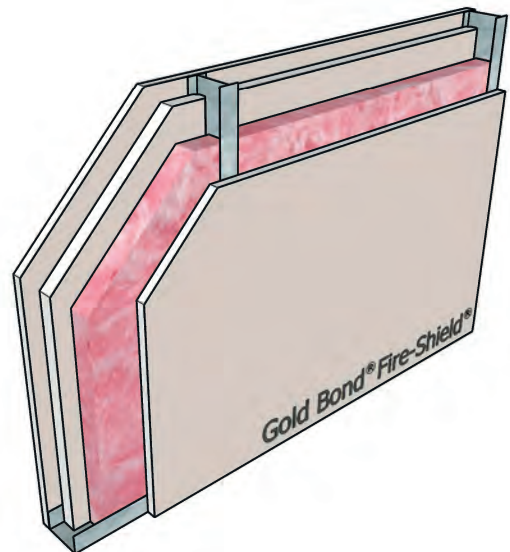


STC-53

NGC 2015036

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board on
 1" Fire-Shield Shaftliner
 Side 2: 5/8" SoundBreak XP Wall Board
 UL Design: U498, W419 - 2 hour

Figure 191



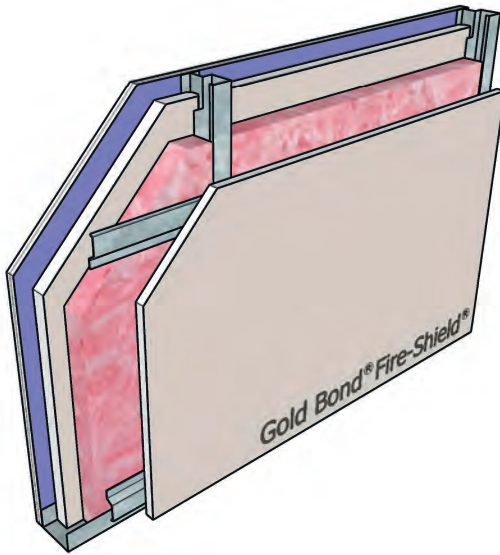
STC-48

NGC 2534

Framing: 2-1/2" steel I-studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board on
 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board
 UL Design: U498, W419 - 2 hour

Shaftwall Partitions

Figure 192

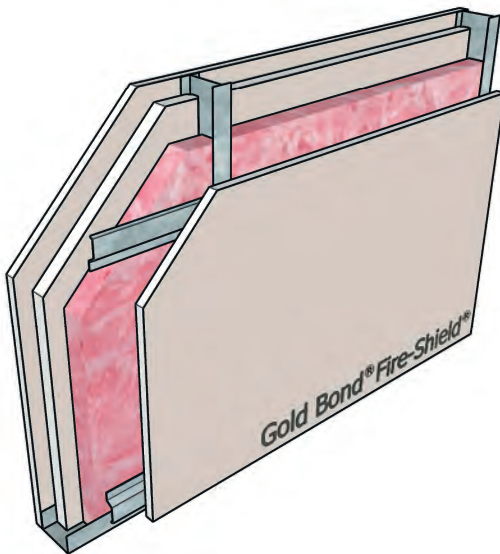


STC-55

NGC 2015041

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board on
 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1
 UL Design: U498, W419 - 2 hour

Figure 194

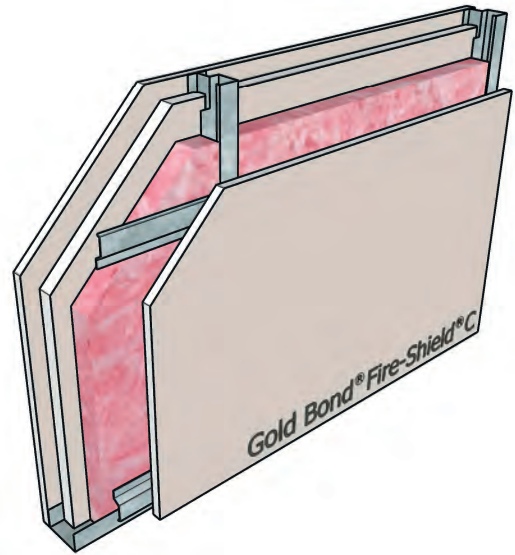


STC-52

NGC 2538

Framing: 2-1/2" steel I-studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board on
 1" Fire-Shield Shaftliner
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1
 UL Design: U498, W419 - 2 hour

Figure 193

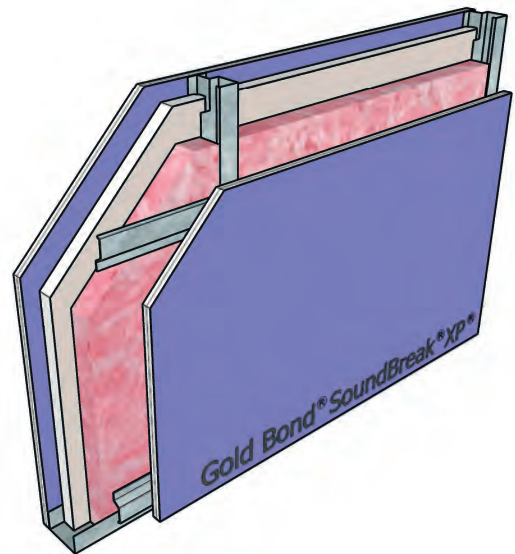


STC-53

NGC 2017008

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1/2" Fire-Shield C Gypsum Board on
 1" Fire-Shield Shaftliner
 Side 2: 1/2" Fire-Shield C Gypsum Board on RC-1
 UL Design: U498, W419 - 2 hour

Figure 195



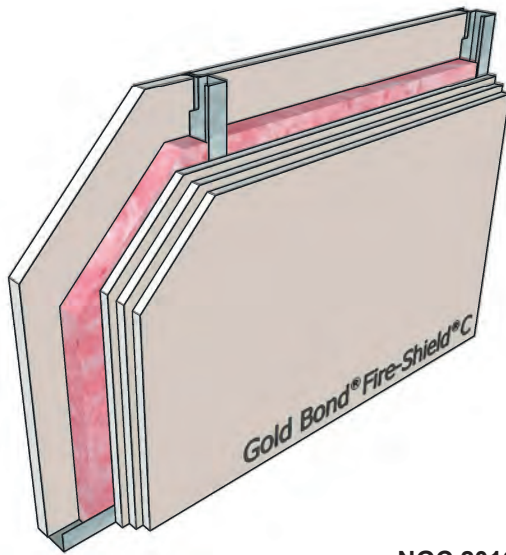
STC-56

NGC 2015040

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board on
 1" Fire-Shield Shaftliner
 Side 2: 5/8" SoundBreak XP Wall Board on RC-1
 UL Design: U498, W419 - 2 hour

Shaftwall Partitions

Figure 196



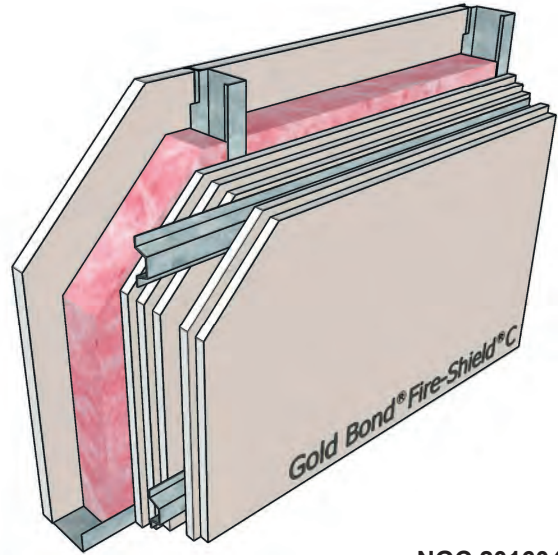
STC-50

NGC 2016039

Framing: 2-1/2" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 1-1/2" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 3 layers 5/8" Fire-Shield C Gypsum Board

UL Design: W414, W419 - 3 hour

Figure 197



STC-58

NGC 2016040

Framing: 4" steel CT studs, 25 gauge (22 mil), 24" o.c.
 Insulation: 3" glass fiber
 Side 1: 1" Fire-Shield Shaftliner
 Side 2: 2 layers 5/8" Fire-Shield C Gypsum Board on
 7/8" rigid furring channels 16" o.c. on
 3 layers 5/8" Fire-Shield C Gypsum Board

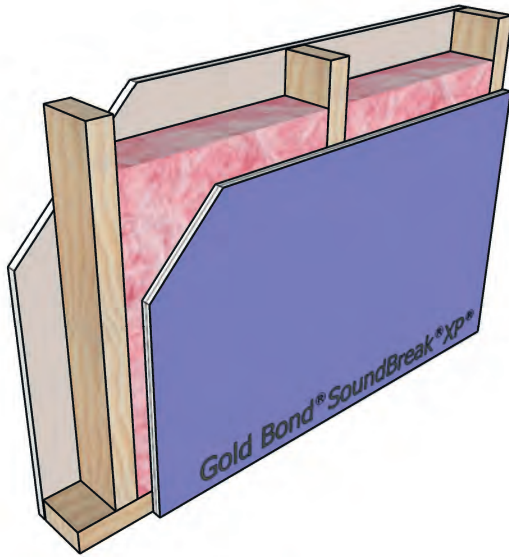
UL Design: V451, W419 - 4 hour

Wood Stud Partitions
with Framing 16" o.c.



Wood Stud Partitions with Framing 16" o.c.

Figure 198



STC-39

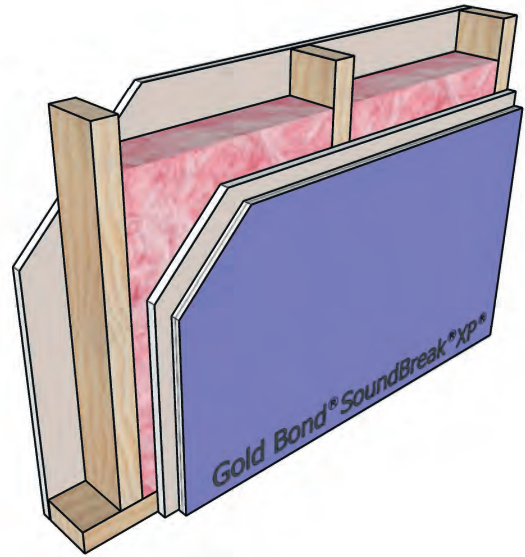
NGC 2009047

Framing: 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 1/2" Gold Bond Gypsum Board
 Side 2: 1/2" SoundBreak XP Wall Board

UL Design: Not Rated

Figure 200

Figure 199



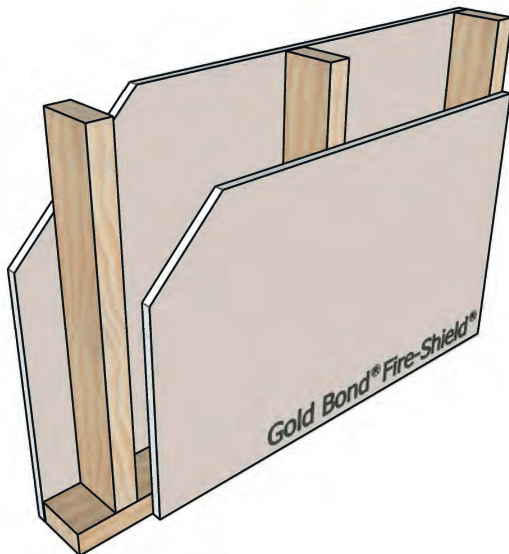
STC-43

NGC 2009040

Framing: 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 1/2" Gold Bond Gypsum Board
 Side 2: 1/2" SoundBreak XP Wall Board on
 1/2" Gold Bond Gypsum Board

UL Design: Not Rated

Figure 201

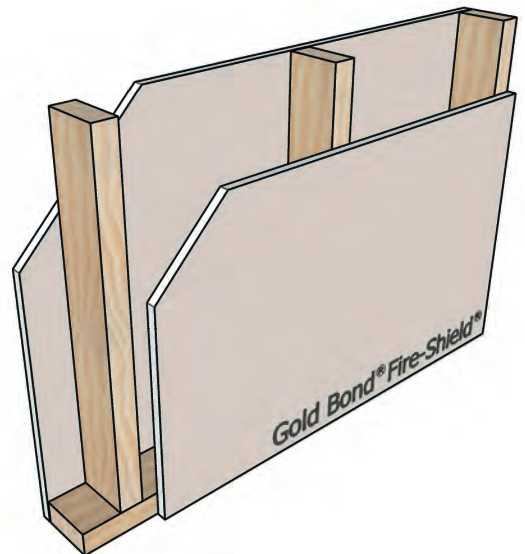


STC-34

NGC 2161

Framing: 2x4 wood studs, 16" o.c.
 Insulation: None
 Side 1: 1/2" Fire-Shield C Gypsum Board
 Side 2: 1/2" Fire-Shield C Gypsum Board

UL Design: U317 - 45 minutes



STC-35

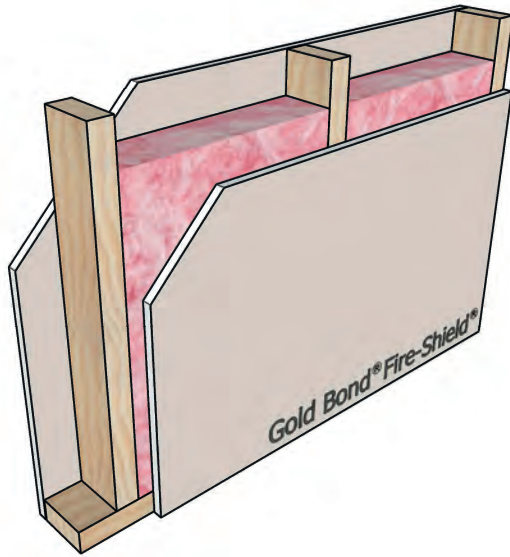
NGC 2403

Framing: 2x4 wood studs, 16" o.c.
 Insulation: None
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U305 - 1 hour

Wood Stud Partitions with Framing 16" o.c.

Figure 202



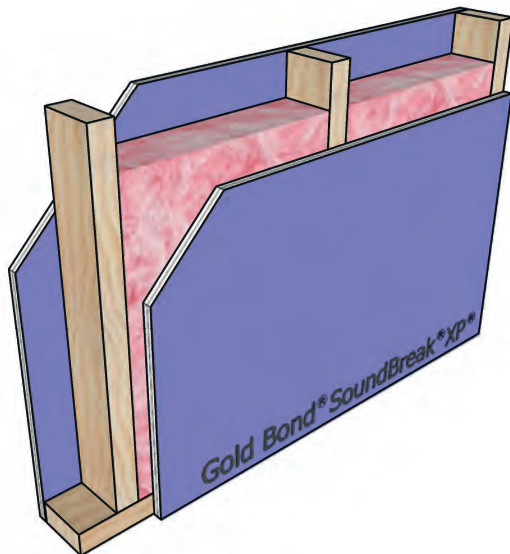
STC-36

NGC 2008029

Framing: 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U305 - 1 hour

Figure 204



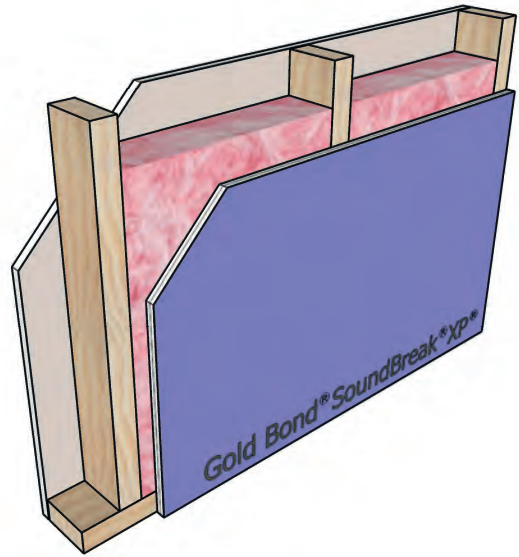
STC-45

NGC 2009019

Framing: 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: U305 - 1 hour

Figure 203



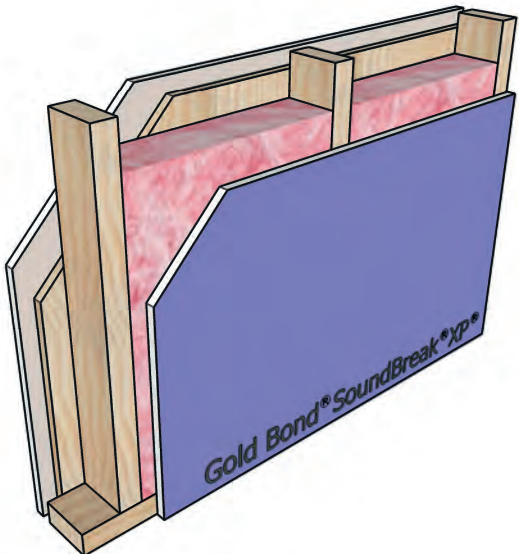
STC-42

NGC 2009020

Framing: 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: U305 - 1 hour

Figure 205



STC-42

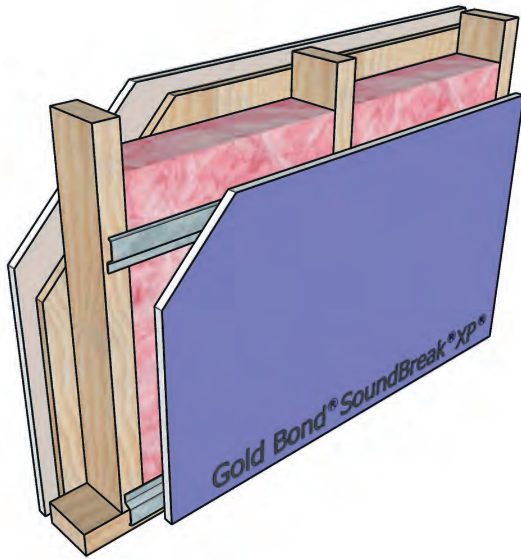
NGC 2015085

Framing: 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Fire-Shield Gypsum Board on
 15/32" plywood

UL Design: U344, U305 - 1 hour

Wood Stud Partitions with Framing 16" o.c.

Figure 206

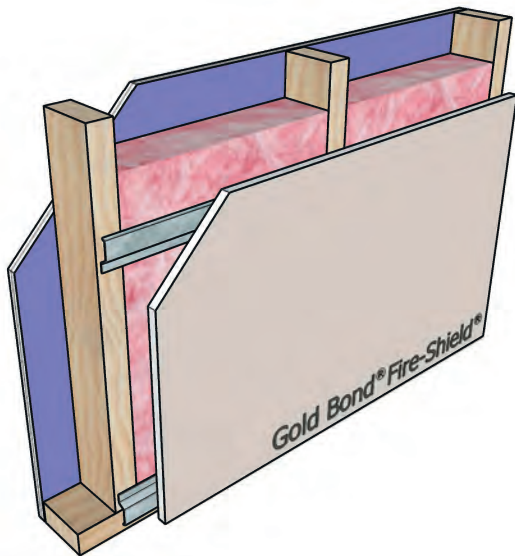


STC-46

NGC 2015084

Framing: 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board on RC-1
 Side 2: 5/8" Fire-Shield Gypsum Board on
 15/32" plywood
 UL Design: U344, U305 - 1 hour

Figure 208



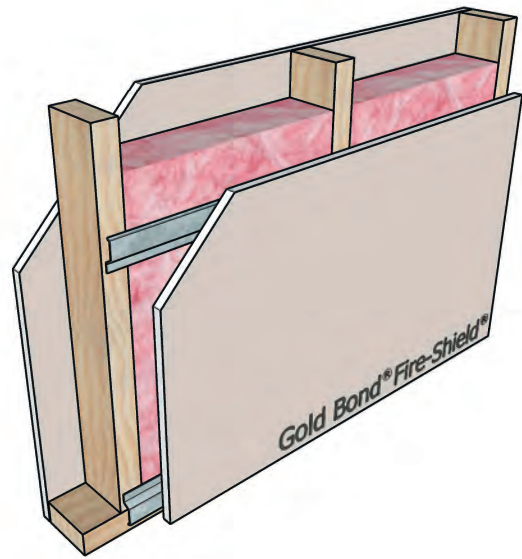
STC-54

NGC 2011066

Framing: 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: U305 - 1 hour

Figure 207



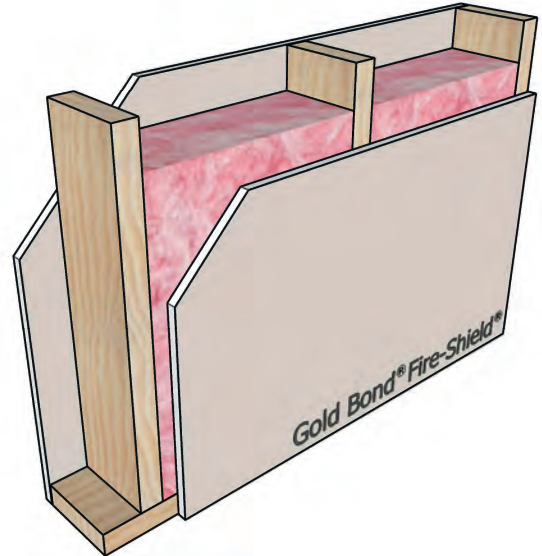
STC-51

NGC 2011071

Framing: 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: U305 - 1 hour

Figure 209



STC-38

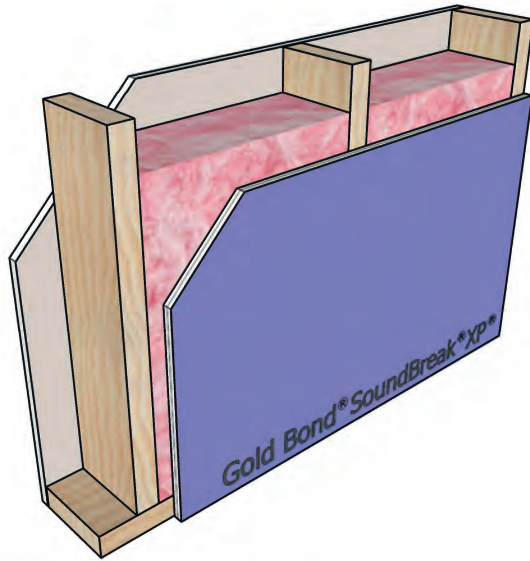
NGC 2008032

Framing: 2x6 wood studs, 16" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U305 - 1 hour

Wood Stud Partitions with Framing 16" o.c.

Figure 210



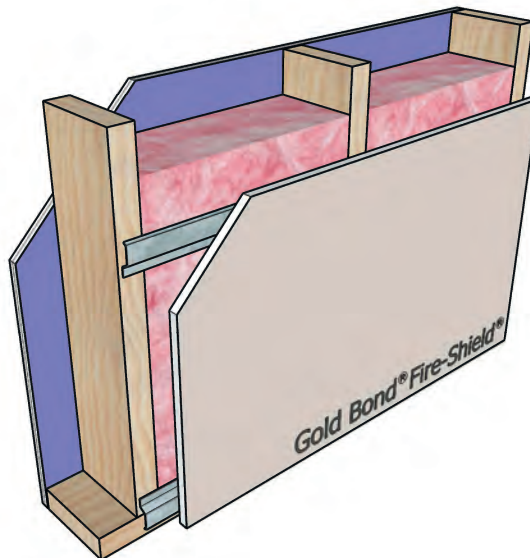
STC-42

NGC 2009008

Framing: 2x6 wood studs, 16" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: U305 - 1 hour

Figure 212



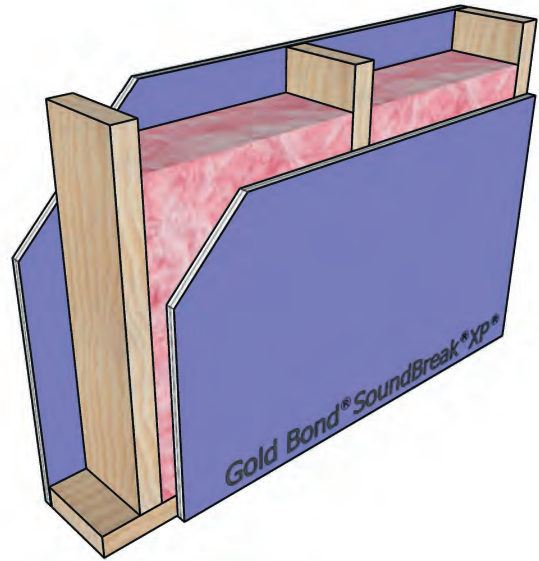
STC-57

NGC 2010081

Framing: 2x6 wood studs, 16" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: U305 - 1 hour

Figure 211



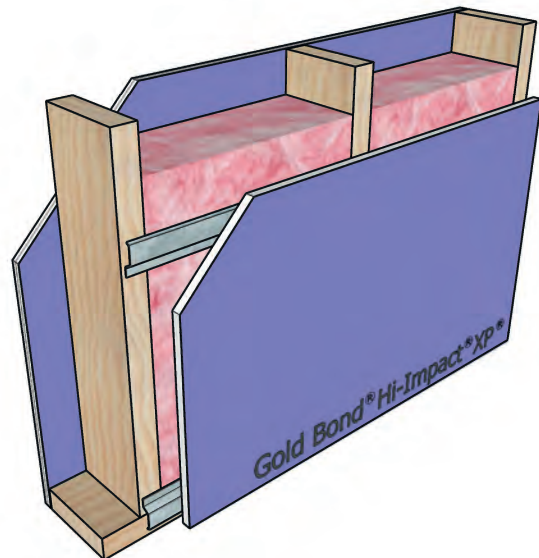
STC-44

NGC 2009012

Framing: 2x6 wood studs, 16" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: U305 - 1 hour

Figure 213



STC-58

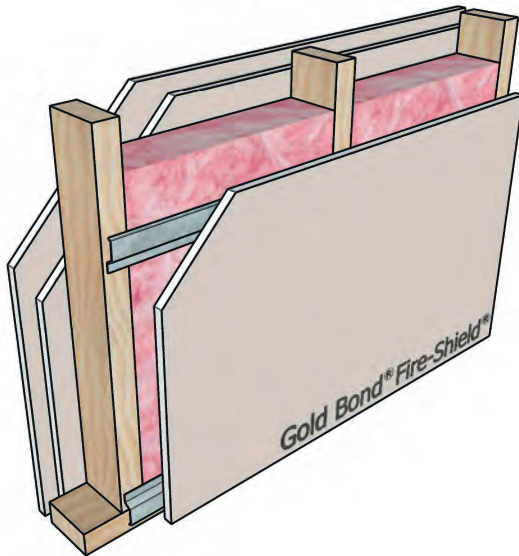
NGC 2010080

Framing: 2x6 wood studs, 16" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Hi-Impact XP Gypsum Board on RC-1

UL Design: U305 - 1 hour

Wood Stud Partitions with Framing 16" o.c.

Figure 214



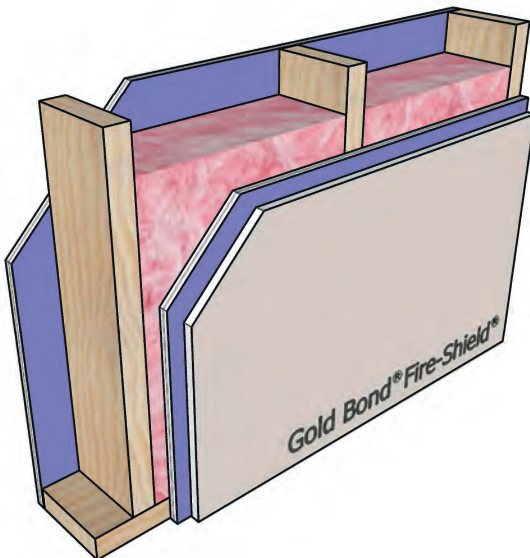
STC-55

NGC 2011070

Framing: 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" fiber glass
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: U305 - 1 hour

Figure 216



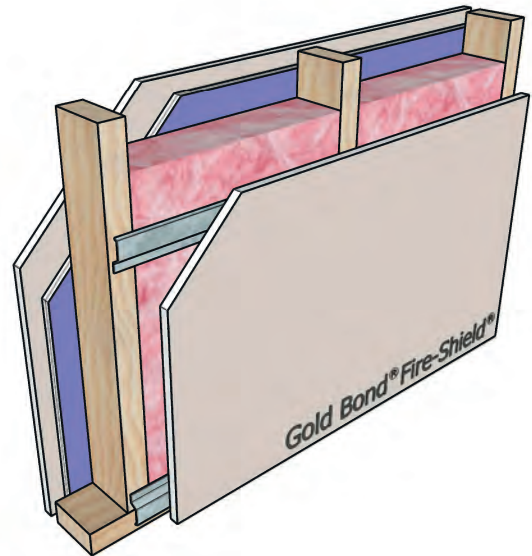
STC-46

NGC 2009010

Framing: 2x6 wood studs, 16" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board

UL Design: U305 - 1 hour

Figure 215

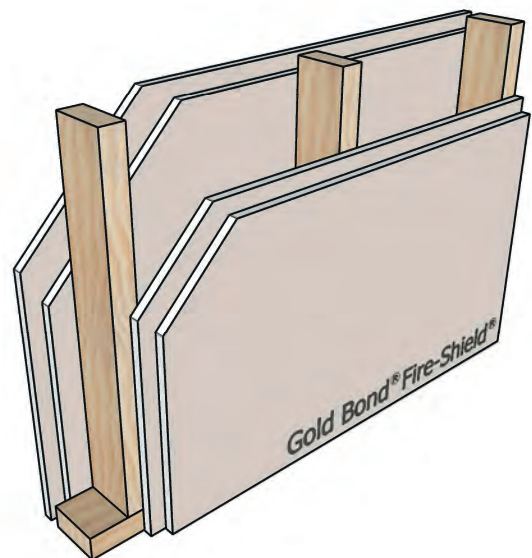


STC-58

NGC 2011067

Framing: 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1
 UL Design: U305 - 1 hour

Figure 217



STC-40

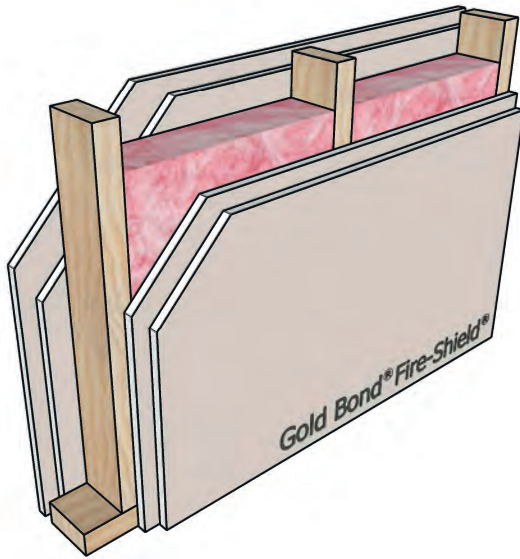
NGC 2363

Framing: 2x4 wood studs, 16" o.c.
 Insulation: None
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: U301 - 2 hour

Wood Stud Partitions with Framing 16" o.c.

Figure 218



STC-41

NGC 2364

Framing: 2x4 wood studs, 16" o.c.

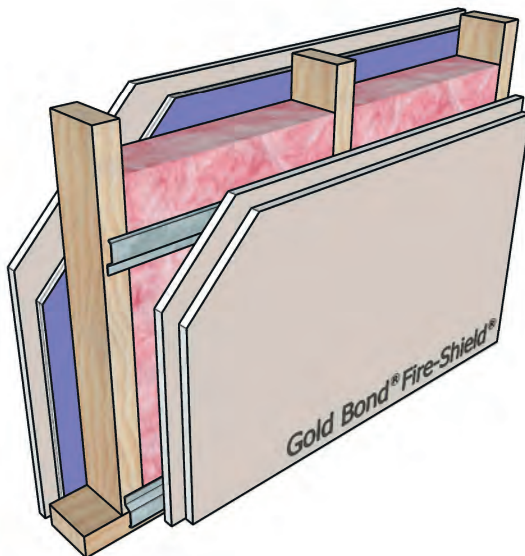
Insulation: 3-1/2" glass fiber

Side 1: 2 layers 5/8" Fire-Shield Gypsum Board

Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: U301 - 2 hour

Figure 220



STC-61

NGC 2011068

Framing: 2x4 wood studs, 16" o.c.

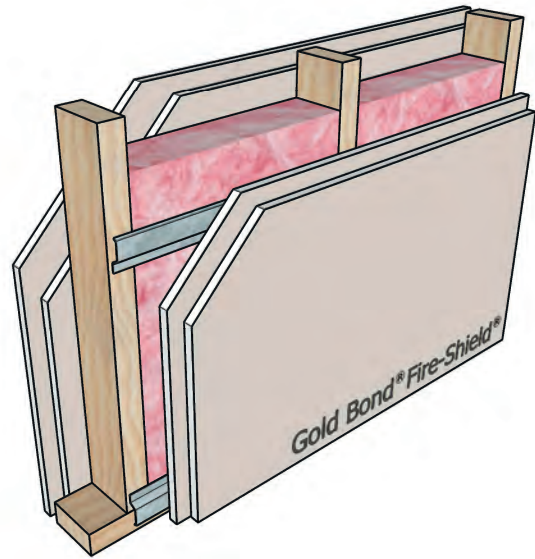
Insulation: 3-1/2" glass fiber

Side 1: 5/8" Fire-Shield Gypsum Board on
5/8" SoundBreak XP Wall Board

Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: U301 - 2 hours

Figure 219



STC-58

NGC 2011069

Framing: 2x4 wood studs, 16" o.c.

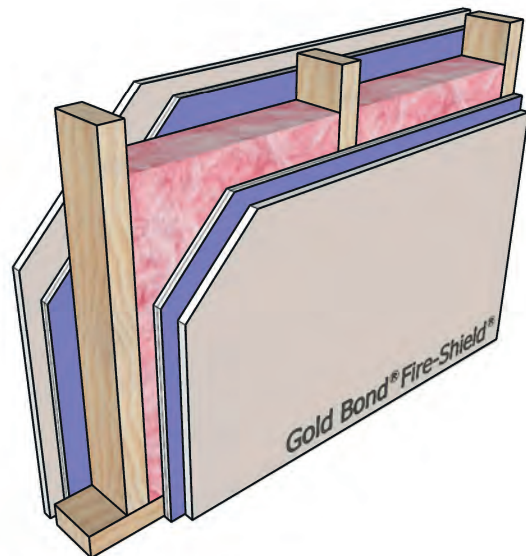
Insulation: 3-1/2" glass fiber

Side 1: 2 layers 5/8" Fire-Shield Gypsum Board

Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: U301 - 2 hours

Figure 221



STC-45

NGC 2009017

Framing: 2x4 wood studs, 16" o.c.

Insulation: 3-1/2" glass fiber

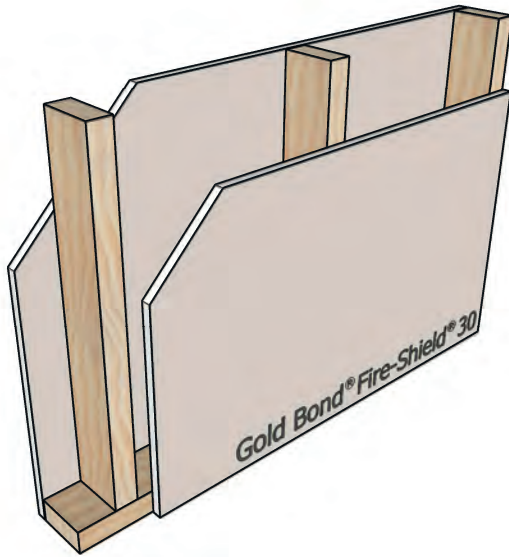
Side 1: 5/8" Fire-Shield on 5/8" SoundBreak XP

Side 2: 5/8" Fire-Shield on 5/8" SoundBreak XP

UL Design: U301 - 2 hour

Wood Stud Partitions with Framing 16" o.c.

Figure 222



STC-33

NGC 2014046

Framing: 2x4 wood studs, 16" o.c.

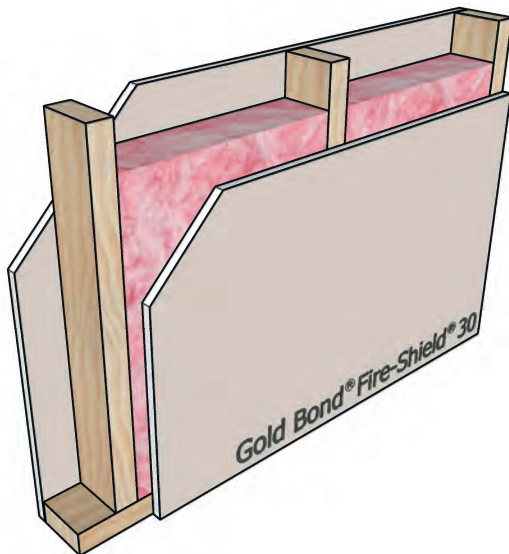
Insulation: None

Side 1: 5/8" High Strength Fire-Shield 30 Gypsum Board

Side 2: 5/8" High Strength Fire-Shield 30 Gypsum Board

UL Design: W411 - 1/2 hour

Figure 224



STC-34

NGC 2014045

Framing: 2x4 wood studs, 16" o.c.

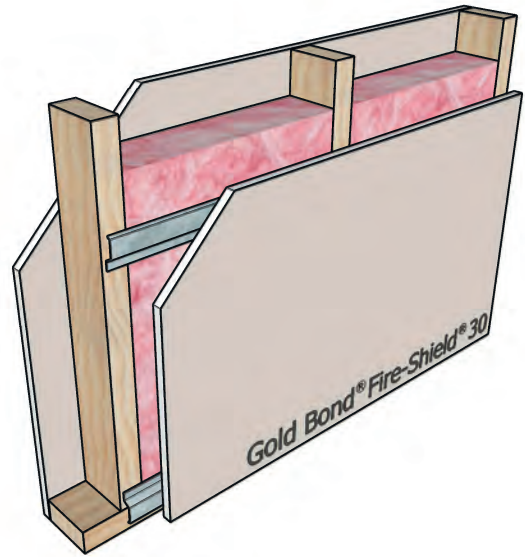
Insulation: 3-1/2" glass fiber

Side 1: 5/8" High Strength Fire-Shield 30 Gypsum Board

Side 2: 5/8" High Strength Fire-Shield 30 Gypsum Board

UL Design: W411 - 1/2 hour

Figure 223



STC-45

NGC 2014044

Framing: 2x4 wood studs, 16" o.c.

Insulation: 3-1/2" glass fiber

Side 1: 5/8" High Strength Fire-Shield 30 Gypsum Board

Side 2: 5/8" High Strength Fire-Shield 30 Gypsum Board on RC-1

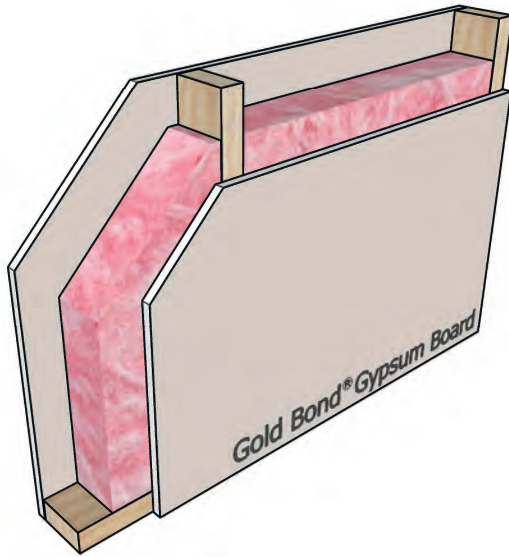
UL Design: W411 - 1/2 hour

Wood Stud Partitions
with Framing 24" o.c.



Wood Stud Partitions with Framing 24" o.c.

Figure 225



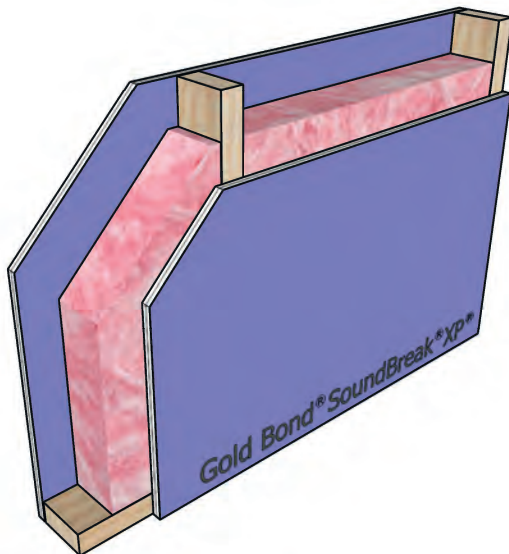
STC-42

NGC 2012065

Framing: 2x4 wood studs, 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 1/2" Gold Bond Gypsum Board
 Side 2: 1/2" Gold Bond Gypsum Board

UL Design: Not Rated

Figure 227



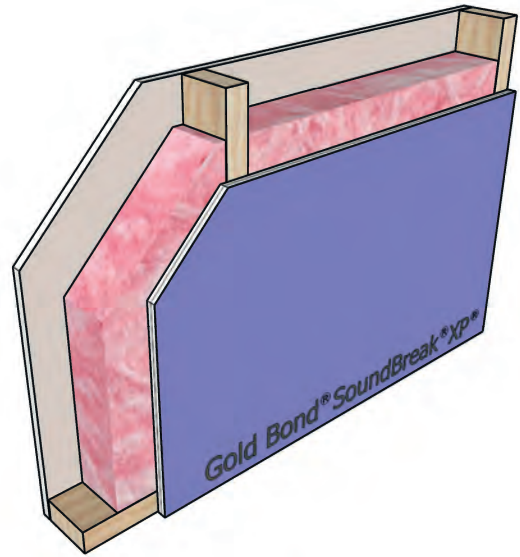
STC-51

NGC 2009029

Framing: 2x4 wood studs, 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 1/2" SoundBreak XP Wall Board
 Side 2: 1/2" SoundBreak XP Wall Board

UL Design: Not Rated

Figure 226



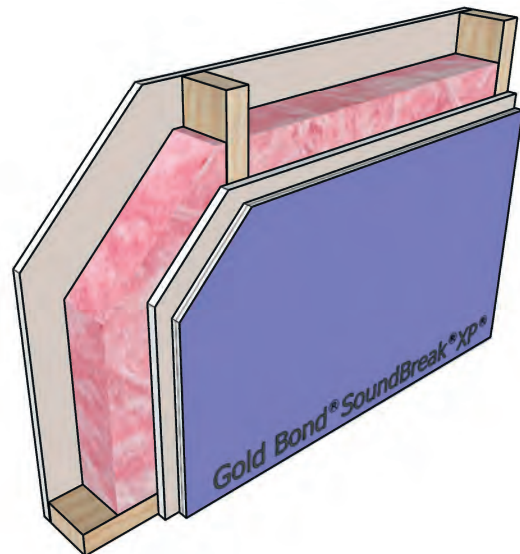
STC-49

NGC 2009027

Framing: 2x4 wood studs, 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 1/2" Gold Bond Gypsum Board
 Side 2: 1/2" SoundBreak XP Wall Board

UL Design: Not Rated

Figure 228



STC-51

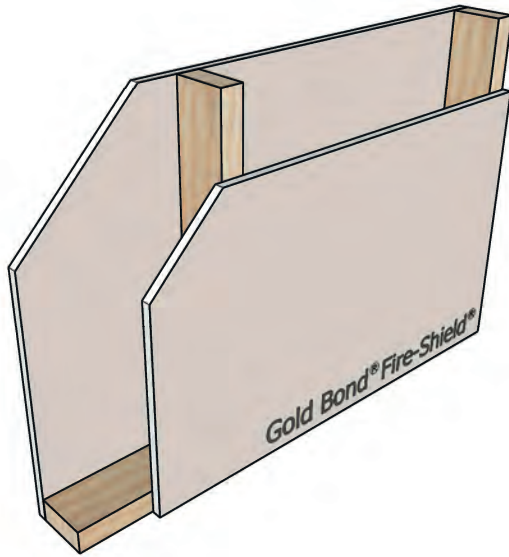
NGC 2009028

Framing: 2x4 wood studs, 24" o.c.
 Insulation: 3-1/2" fiber glass
 Side 1: 1/2" Gold Bond Gypsum Board
 Side 2: 1/2" SoundBreak XP Wall Board on
 1/2" Gold Bond Gypsum Board

UL Design: Not Rated

Wood Stud Partitions with Framing 24" o.c.

Figure 229



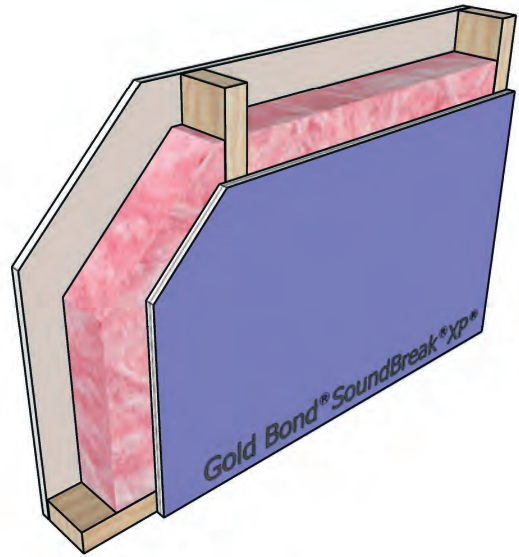
STC-38

NGC 2404

Framing: 2x4 wood studs, 24" o.c.
 Insulation: None
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U309 - 1 hour

Figure 230



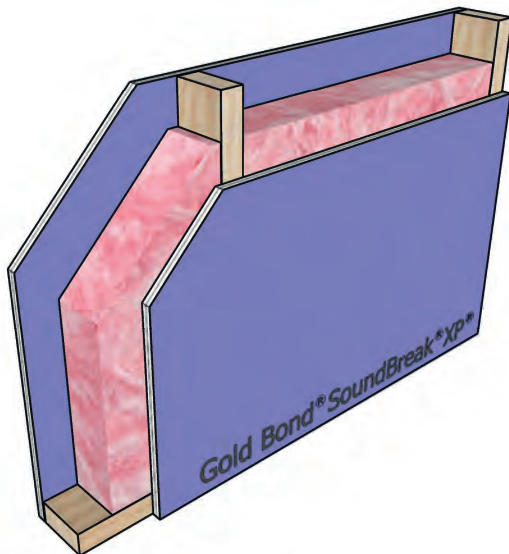
STC-50

NGC 2009015

Framing: 2x4 wood studs, 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: U309 - 1 hour

Figure 231



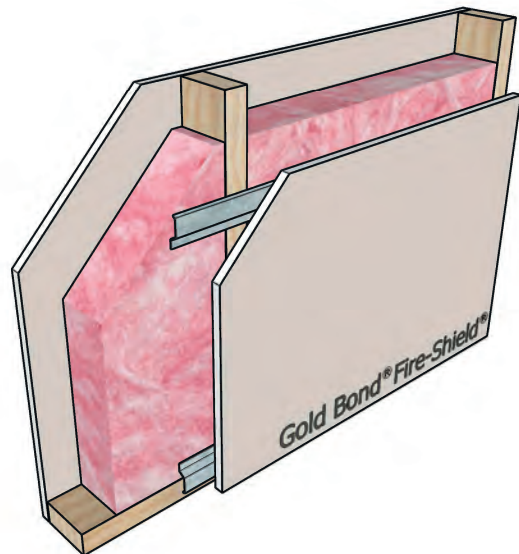
STC-53

RAL-TL07-145

Framing: 2x4 wood studs, 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: U309 - 1 hour

Figure 232



STC-50

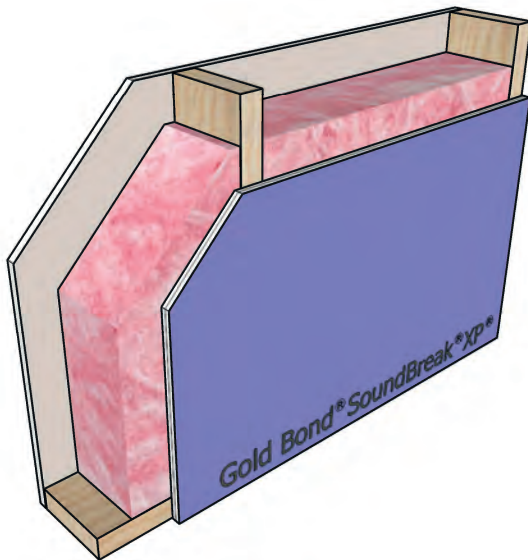
NRCC TL-93-196

Framing: 2x4 wood studs, 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield C Gypsum Board
 Side 2: 5/8" Fire-Shield C Gypsum Board on RC-1

UL Design: U309 - 1 hour

Wood Stud Partitions with Framing 24" o.c.

Figure 233



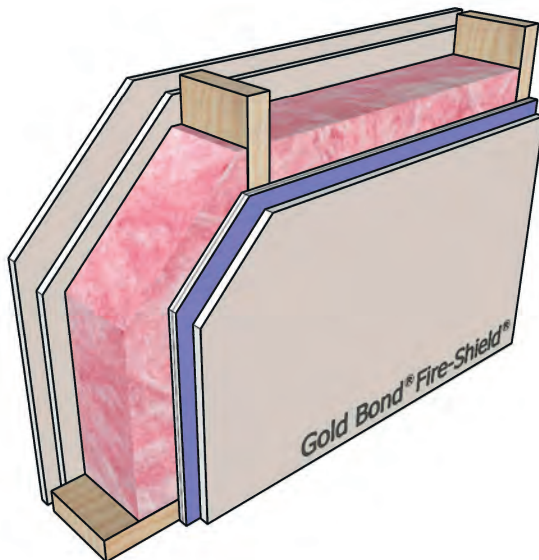
STC-50

NGC 2009013

Framing: 2x6 wood studs, 24" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: U309 - 1 hour

Figure 235

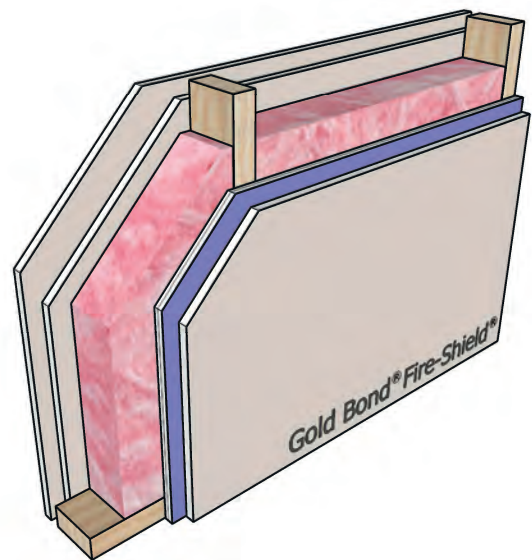


STC-53

NGC 2009014

Framing: 2x6 wood studs, 24" o.c.
 Insulation: 5-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board
 GA File: WP 4135 - 2 hour

Figure 234



STC-54

NGC 2009016

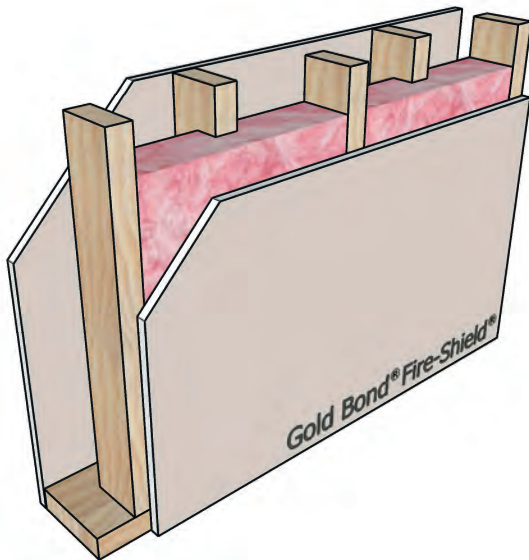
Framing: 2x4 wood studs, 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board on
 5/8" SoundBreak XP Wall Board
 GA File: WP 4135 - 2 hour

Wood Stud Chase Walls



Wood Stud Chase Walls

Figure 236

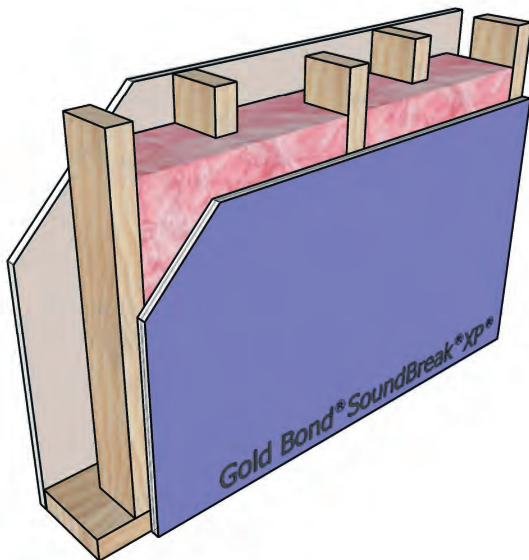


STC-45

NGC 2375

Framing: 2x4 wood studs, 16" o.c., staggered on 2x6 wood plate
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board
 UL Design: U340 - 1 hour

Figure 238



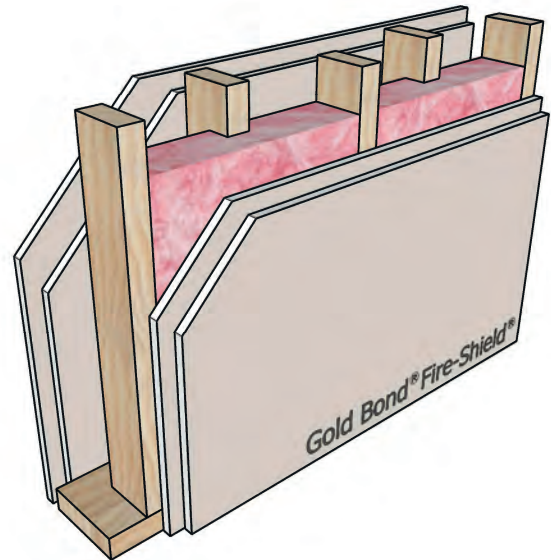
STC-53

NGC 2011003

Framing: 2x4 wood studs, 16" o.c., staggered on 2x6 wood plate
 Insulation: 5-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board

UL Design: U340 - 1 hour

Figure 237

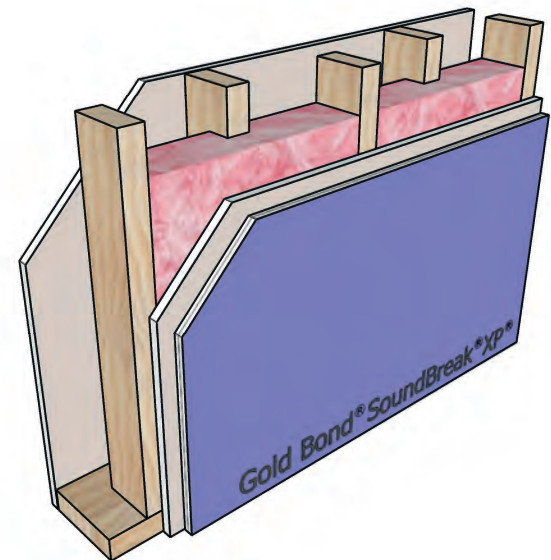


STC-53

NGC 2376

Framing: 2x4 wood studs, 16" o.c., staggered on 2x6 wood plate
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board
 GA File: WP 5530 - 2 hour

Figure 239



STC-53

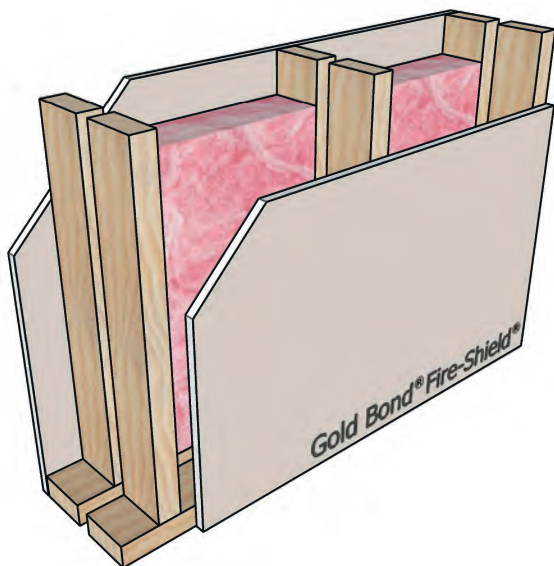
NGC 2009045

Framing: 2x4 wood studs, 16" o.c., staggered on 2x6 wood plate
 Insulation: 3-1/2" glass fiber
 Side 1: 1/2" Gold Bond Gypsum Board
 Side 2: 1/2" SoundBreak XP Wall Board on 1/2" Gold Bond Gypsum Board

UL Design: Not Rated

Wood Stud Chase Walls

Figure 240



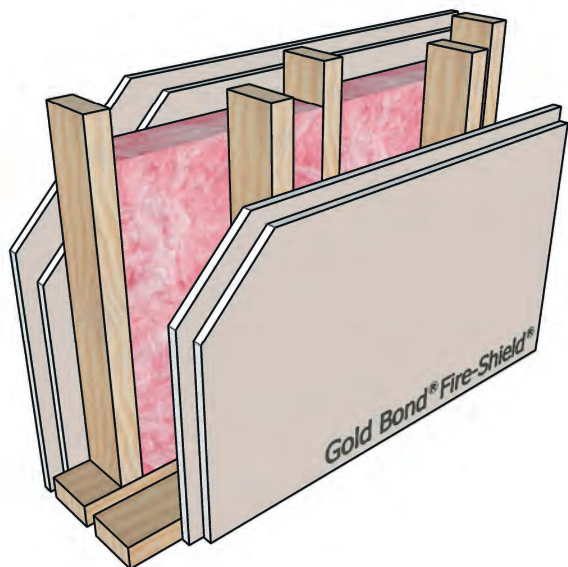
STC-51

NGC 2191

Framing: Double row 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" glass fiber one side
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U341 - 1 hour

Figure 242



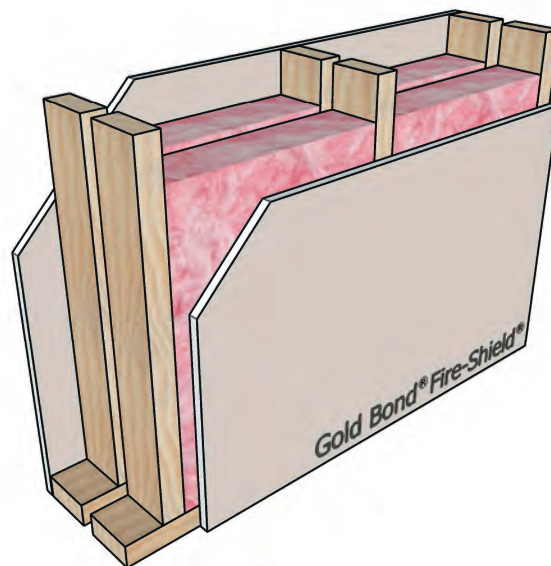
STC-58

NGC 3056

Framing: Double row 2x4 wood studs, 16" o.c. staggered
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

GA File: WP 3725 - 2 hour

Figure 241



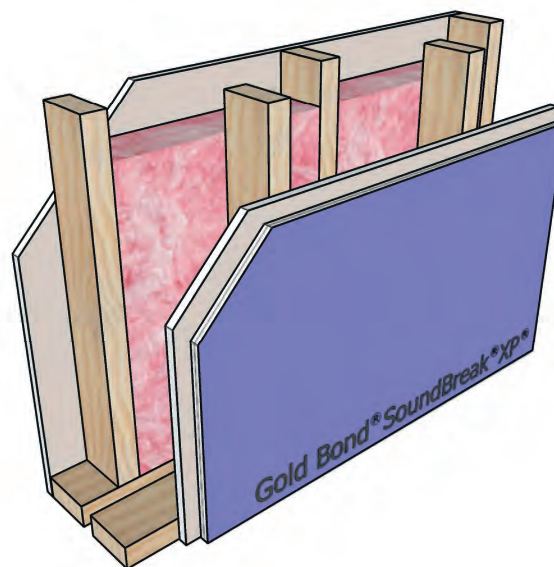
STC-54

NGC 2198

Framing: Double row 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" glass fiber both sides
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: U341 - 1 hour

Figure 243



STC-64

RAL TL07-147

Framing: Double row 2x4 wood studs, 16" o.c. staggered
 Insulation: 3-1/2" glass fiber one side
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/8" SoundBreak XP Wall Board on
 5/8" Fire-Shield Gypsum Board

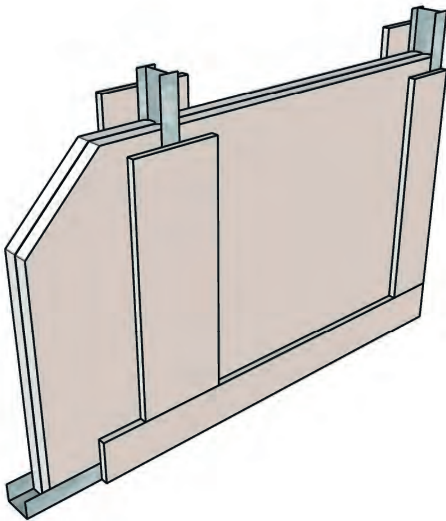
UL Design: U341 - 1 hour

Area Separation Fire Walls



Area Separation Fire Walls

Figure 244

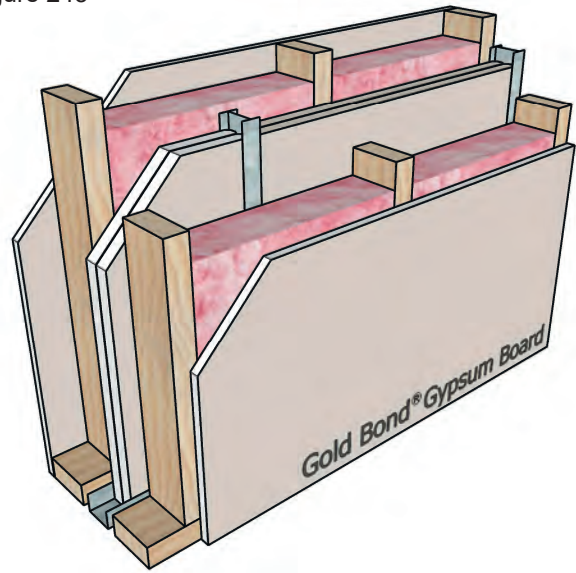


STC-35

NGC 2827

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs
 Framing: None
 Insulation: None
 Side 1: 6" wide 1/2" Fire-Shield C gypsum board battens
 Side 2: 6" wide 1/2" Fire-Shield C gypsum board battens
 UL Design: U347 - 2 hour

Figure 245

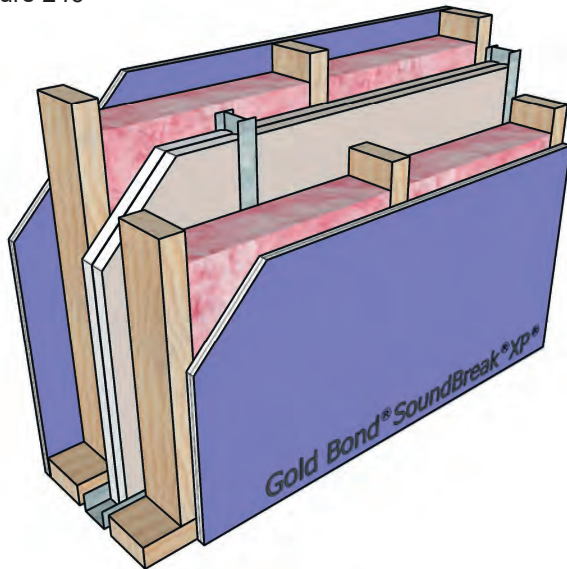


STC-61

RAL-TL05-199

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 3/4" air space
 Framing: 2x4 wood studs, 16" o.c. each side
 Insulation: 3-1/2" glass fiber each side
 Side 1: 1/2" Gold Bond Gypsum Board
 Side 2: 1/2" Gold Bond Gypsum Board
 UL Design: U347 - 2 hour

Figure 246

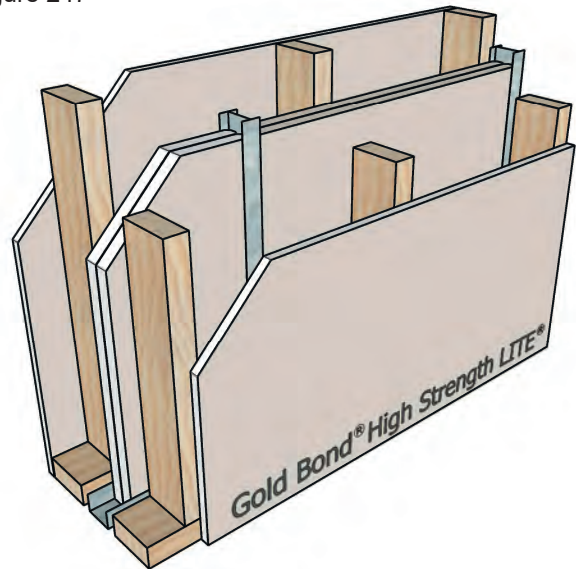


STC-65

NGC 2012081

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 3/4" air space
 Framing: 2x4 wood studs, 16" o.c. each side
 Insulation: 3-1/2" glass fiber each side
 Side 1: 1/2" SoundBreak XP Wall Board
 Side 2: 1/2" SoundBreak XP Wall Board
 UL Design: U347 - 2 hour

Figure 247



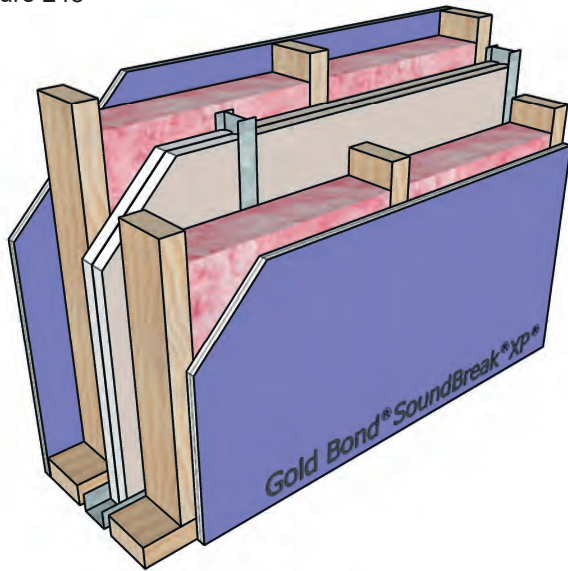
STC-41

NGC 2012086

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 3/4" air space
 Framing: 2x4 wood studs, 16" o.c. each side
 Insulation: None
 Side 1: 1/2" High Strength LITE Gypsum Board
 Side 2: 1/2" High Strength LITE Gypsum Board
 UL Design: U347 - 2 hour

Area Separation Fire Walls

Figure 248

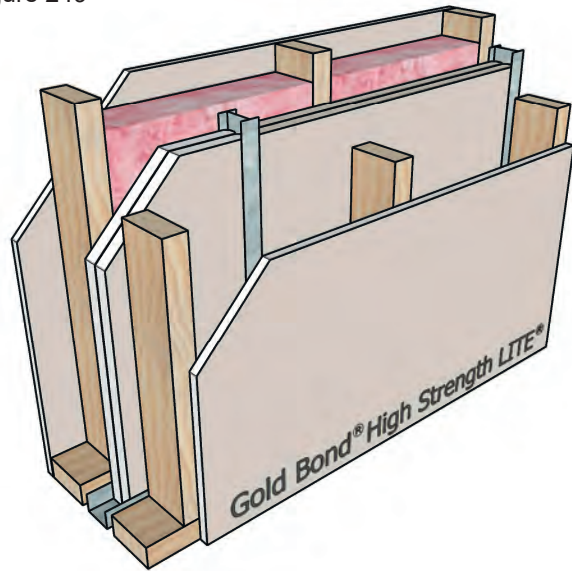


STC-67

NRCC B-3451.1

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 3/4" air space
Framing: 2x4 wood studs, 16" o.c. each side
Insulation: 3-1/2" glass fiber each side
Side 1: 5/8" SoundBreak XP Wall Board
Side 2: 5/8" SoundBreak XP Wall Board
UL Design: U347 - 2 hour

Figure 249

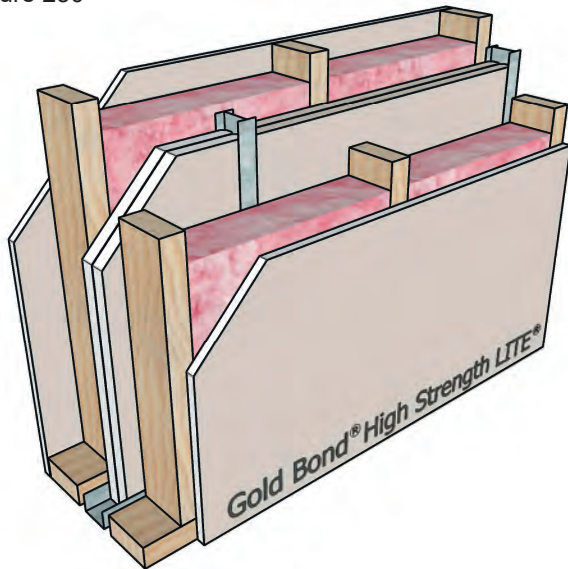


STC-54

NGC 2012087

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 3/4" air space
Framing: 2x4 wood studs, 16" o.c. each side
Insulation: 3-1/2" glass fiber one side
Side 1: 1/2" High Strength LITE Gypsum Board
Side 2: 1/2" High Strength LITE Gypsum Board
UL Design: U347 - 2 hour

Figure 250

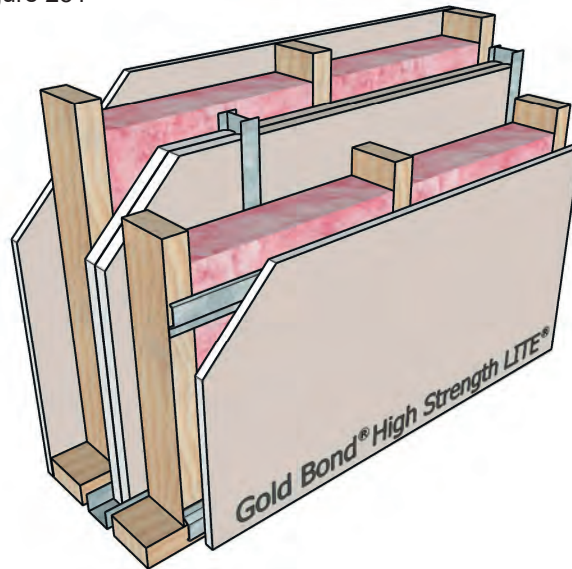


STC-59

NGC 2012078

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 3/4" air space
Framing: 2x4 wood studs, 16" o.c. each side
Insulation: 3-1/2" glass fiber each side
Side 1: 1/2" High Strength LITE Gypsum Board
Side 2: 1/2" High Strength LITE Gypsum Board
UL Design: U347 - 2 hour

Figure 251



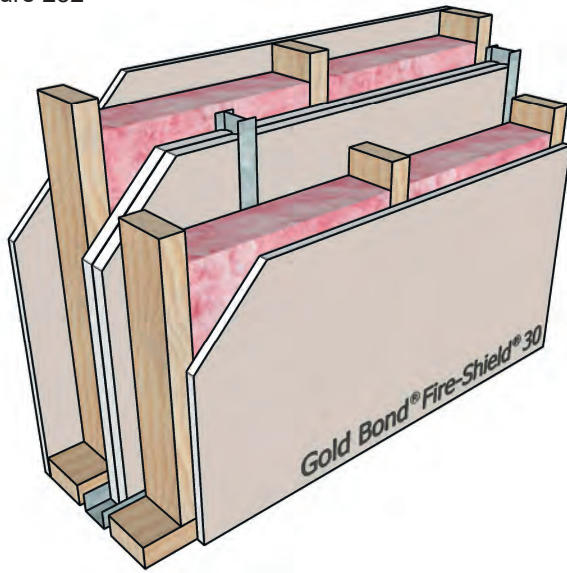
STC-62

NGC 2012079

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 3/4" air space
Framing: 2x4 wood studs, 16" o.c. each side
Insulation: 3-1/2" glass fiber each side
Side 1: 1/2" High Strength LITE Gypsum Board
Side 2: 1/2" High Strength LITE Gypsum Board on RC-1
UL Design: U347 - 2 hour

Area Separation Fire Walls

Figure 252

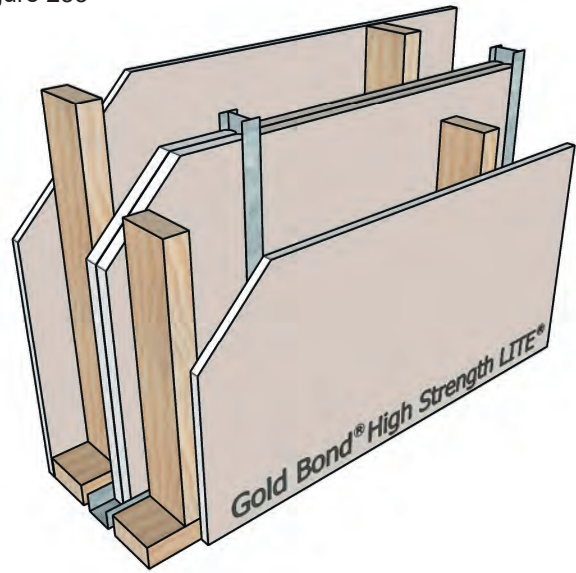


STC-57

NGC 2012083

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 3/4" air space
 Framing: 2x4 wood studs, 16" o.c. each side
 Insulation: 3-1/2" glass fiber each side
 Side 1: 5/8" High Strength Fire-Shield 30 Gypsum Board
 Side 2: 5/8" High Strength Fire-Shield 30 Gypsum Board
 UL Design: U347 - 2 hour

Figure 253



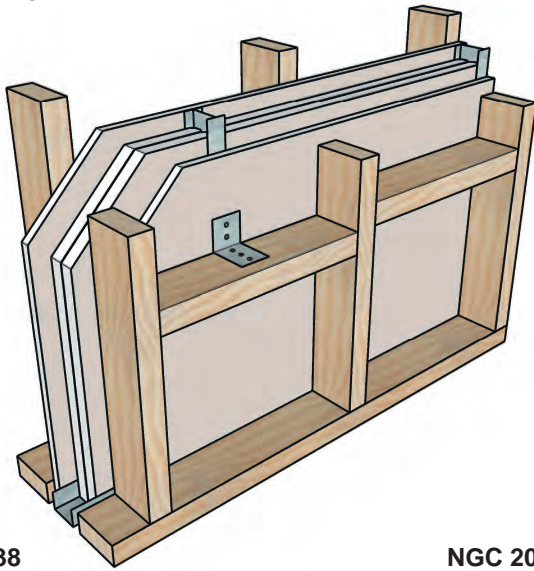
STC-44

NGC 2012088

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 3/4" air space
 Framing: 2x4 wood studs, 24" o.c. each side
 Insulation: None
 Side 1: 1/2" High Strength LITE Gypsum Board
 Side 2: 1/2" High Strength LITE Gypsum Board
 UL Design: U347 - 2 hour

Area Separation Fire Walls

Figure 254

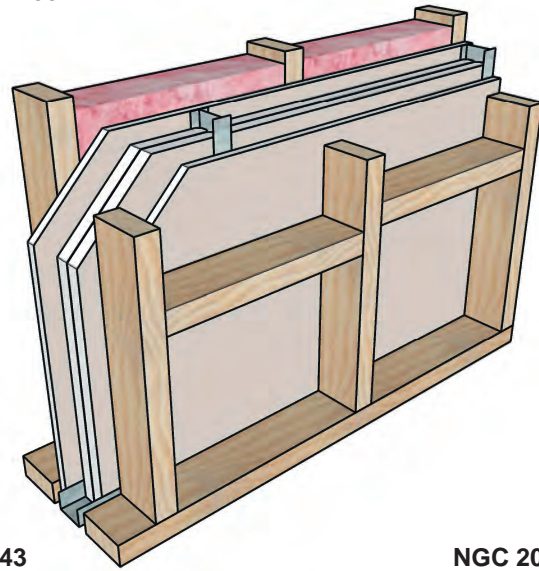


STC-38

NGC 2017015

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 1 layer 5/8" Fire-Shield C Gypsum Board each side
 Framing: 2x4 wood studs, 16" o.c. each side
 Insulation: None
 Side 1: None
 Side 2: None
 UL Design: W454 - 3 hour

Figure 255

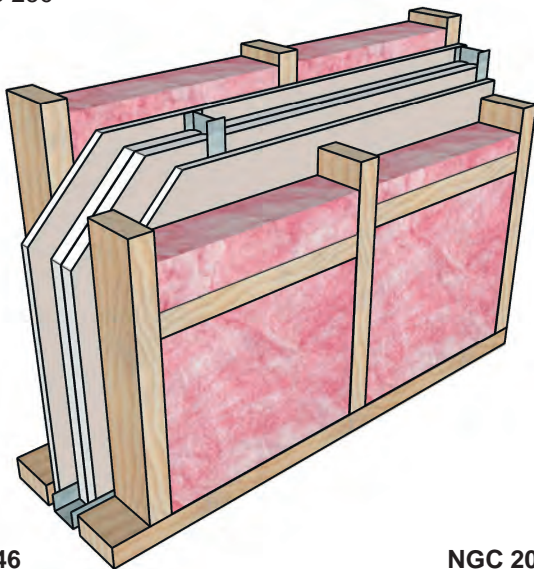


STC-43

NGC 2017016

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 1 layer 5/8" Fire-Shield C Gypsum Board each side
 Framing: 2x4 wood studs, 16" o.c. each side
 Insulation: 3-1/2" glass fiber one side
 Side 1: None
 Side 2: None
 UL Design: W454 - 3 hour

Figure 256

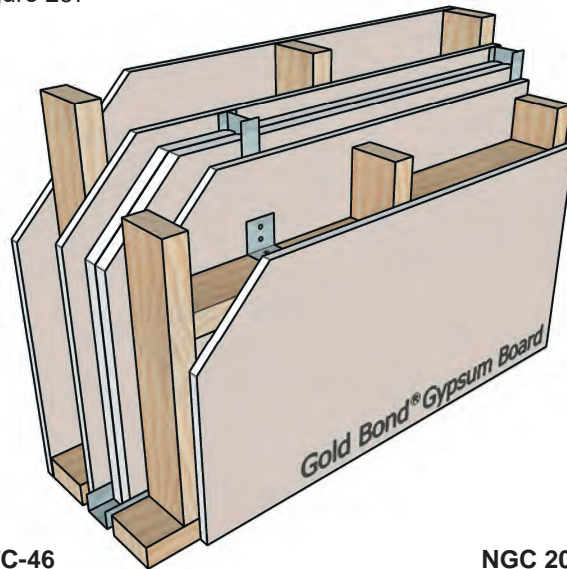


STC-46

NGC 2017017

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 1 layer 5/8" Fire-Shield C Gypsum Board each side
 Framing: 2x4 wood studs, 16" o.c. each side
 Insulation: 3-1/2" glass fiber each side
 Side 1: None
 Side 2: None
 UL Design: W454 - 3 hour

Figure 257



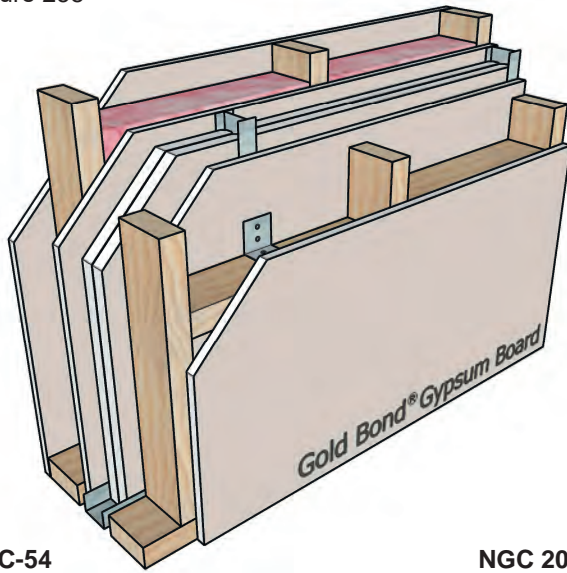
STC-46

NGC 2017027

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 1 layer 5/8" Fire-Shield C Gypsum Board each side
 Framing: 2x4 wood studs, 16" o.c. each side
 Insulation: None
 Side 1: 1/2" Gold Bond Gypsum Board
 Side 2: 1/2" Gold Bond Gypsum Board
 UL Design: W454 - 3 hour

Area Separation Fire Walls

Figure 258

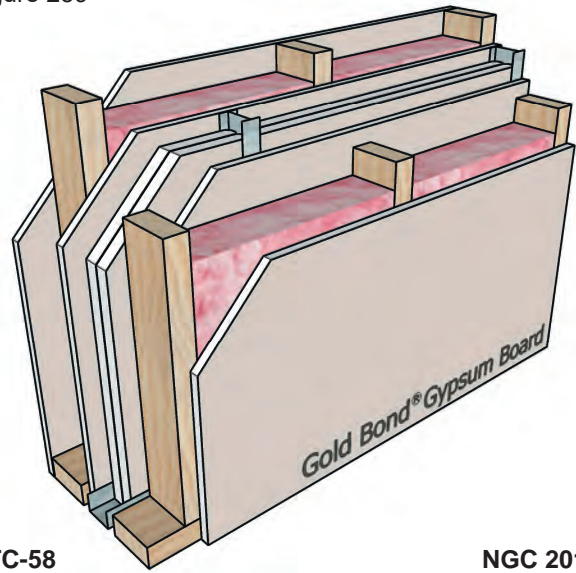


STC-54

NGC 2017026

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 1 layer 5/8" Fire-Shield C Gypsum Board each side
Framing: 2x4 wood studs, 16" o.c. each side
Insulation: 3-1/2" glass fiber one side
Side 1: 1/2" Gold Bond Gypsum Board
Side 2: 1/2" Gold Bond Gypsum Board
UL Design: W454 - 3 hour

Figure 259

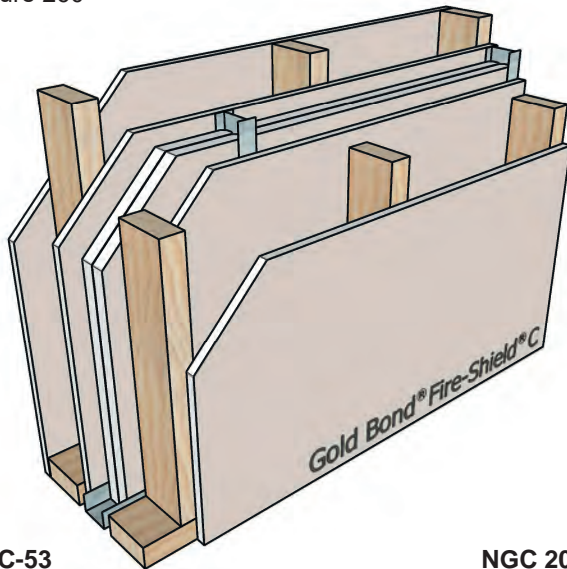


STC-58

NGC 2017025

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 1 layer 5/8" Fire-Shield C Gypsum Board each side
Framing: 2x4 wood studs, 16" o.c. each side
Insulation: 3-1/2" glass fiber each side
Side 1: 1/2" Gold Bond Gypsum Board
Side 2: 1/2" Gold Bond Gypsum Board
UL Design: W454 - 3 hour

Figure 260

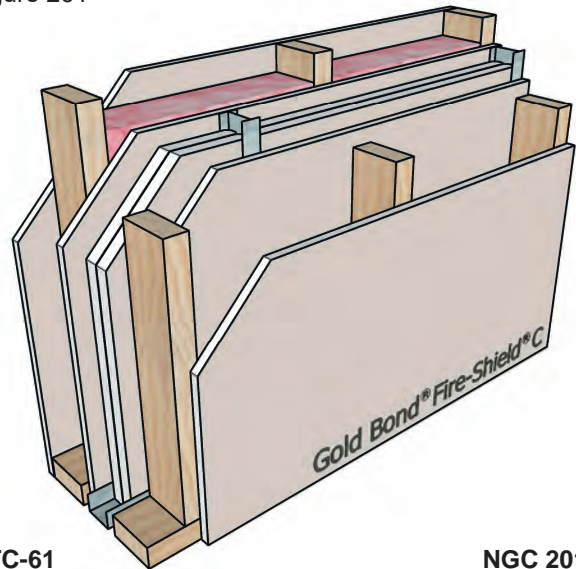


STC-53

NGC 2017021

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 1 layer 5/8" Fire-Shield C Gypsum Board each side
Framing: 2x4 wood studs, 16" o.c. each side
Insulation: None
Side 1: 1/2" Fire-Shield C Gypsum Board
Side 2: 1/2" Fire-Shield C Gypsum Board
UL Design: W454 - 3 hour

Figure 261



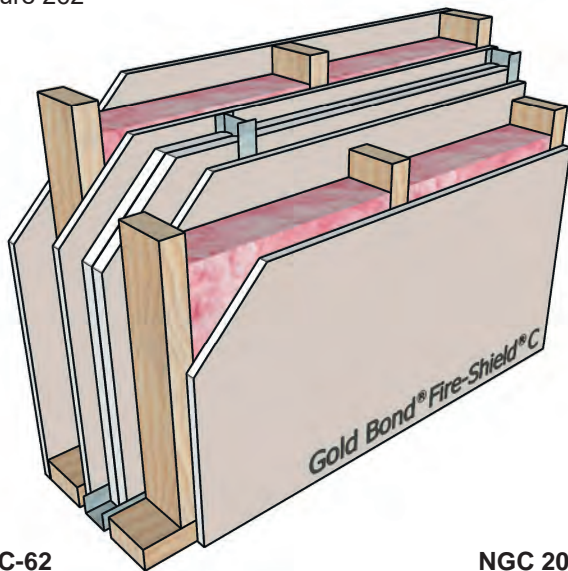
STC-61

NGC 2017020

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 1 layer 5/8" Fire-Shield C Gypsum Board each side
Framing: 2x4 wood studs, 16" o.c. each side
Insulation: 3-1/2" glass fiber one side
Side 1: 1/2" Fire-Shield C Gypsum Board
Side 2: 1/2" Fire-Shield C Gypsum Board
UL Design: W454 - 3 hour

Area Separation Fire Walls

Figure 262

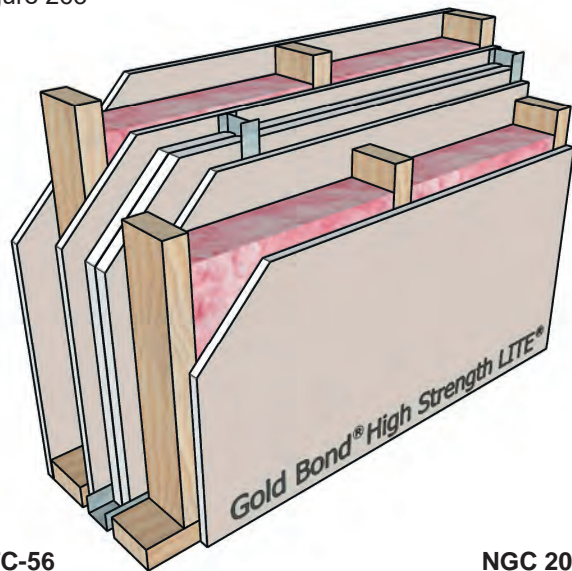


STC-62

NGC 2017019

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 1 layer 5/8" Fire-Shield C Gypsum Board each side
 Framing: 2x4 wood studs, 16" o.c. each side
 Insulation: 3-1/2" glass fiber each side
 Side 1: 1/2" Fire-Shield C Gypsum Board
 Side 2: 1/2" Fire-Shield C Gypsum Board
 UL Design: W454 - 3 hour

Figure 263

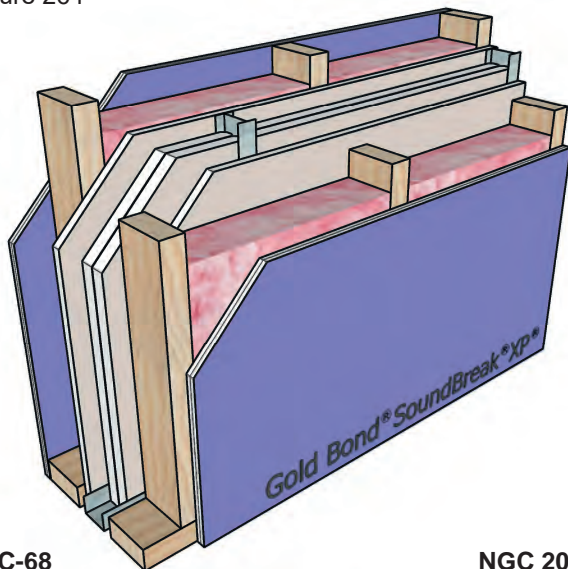


STC-56

NGC 2017022

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 1 layer 5/8" Fire-Shield C Gypsum Board each side
 Framing: 2x4 wood studs, 16" o.c. each side
 Insulation: 3-1/2" glass fiber each side
 Side 1: 1/2" High Strength LITE Gypsum Board
 Side 2: 1/2" High Strength LITE Gypsum Board
 UL Design: W454 - 3 hour

Figure 264

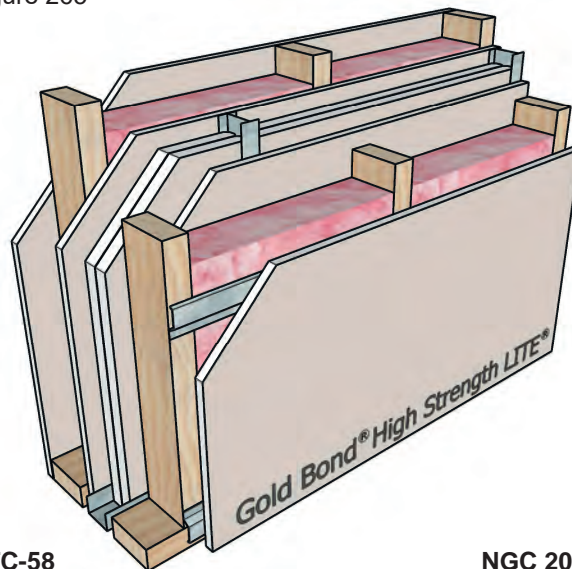


STC-68

NGC 2017018

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 1 layer 5/8" Fire-Shield C Gypsum Board each side
 Framing: 2x4 wood studs, 16" o.c. each side
 Insulation: 3-1/2" glass fiber each side
 Side 1: 5/8" SoundBreak XP Wall Board
 Side 2: 5/8" SoundBreak XP Wall Board
 UL Design: W454 - 3 hour

Figure 265



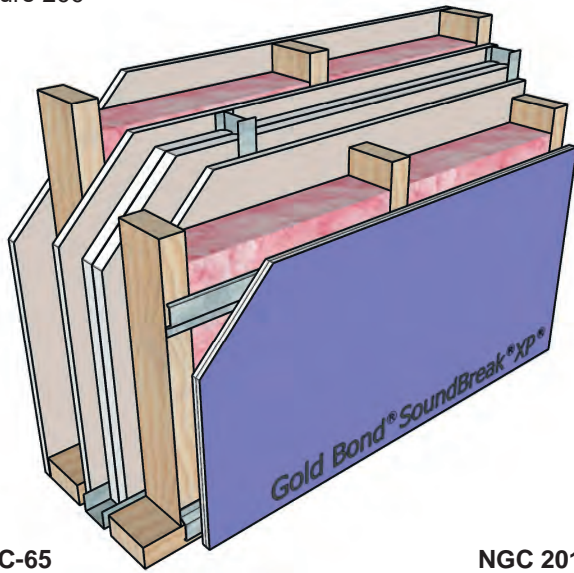
STC-58

NGC 2017023

Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield Shaftliner between studs; 1 layer 5/8" Fire-Shield C Gypsum Board each side
 Framing: 2x4 wood studs, 16" o.c. each side
 Insulation: 3-1/2" glass fiber each side
 Side 1: 1/2" High Strength LITE Gypsum Board
 Side 2: 1/2" High Strength LITE Gypsum Board on RC-1
 UL Design: W454 - 3 hour

Area Separation Fire Walls

Figure 266



STC-65

NGC 2017024

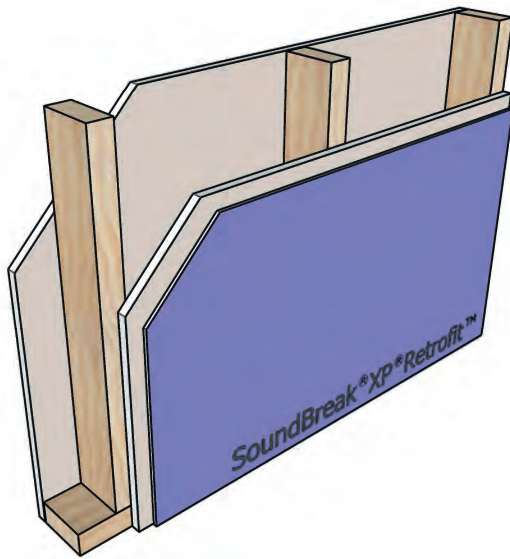
Fire Wall: 2" H-studs, 24" o.c. with 2 layers 1" Fire-Shield
Shaftliner between studs; 1 layer 5/8"
Fire-Shield C Gypsum Board each side
Framing: 2x4 wood studs, 16" o.c. each side
Insulation: 3-1/2" glass fiber each side
Side 1: 1/2" High Strength LITE Gypsum Board
Side 2: 5/8" SoundBreak XP Wall Board on RC-1
UL Design: W454 - 3 hour

SoundBreak XP
RetroFit Partitions



SoundBreak XP Retrofit Partitions

Figure 267

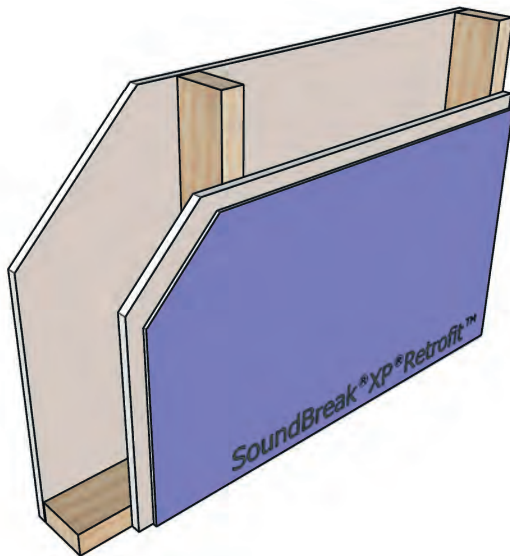


STC-36

NGC 2012049

Framing: 2x4 wood studs, 16" o.c.
 Insulation: None
 Side 1: 1/2" Gold Bond Gypsum Board
 Side 2: 5/16" Gold Bond SoundBreak XP Retrofit on
 1/2" Gold Bond Gypsum Board
 UL Design: Not Rated

Figure 269

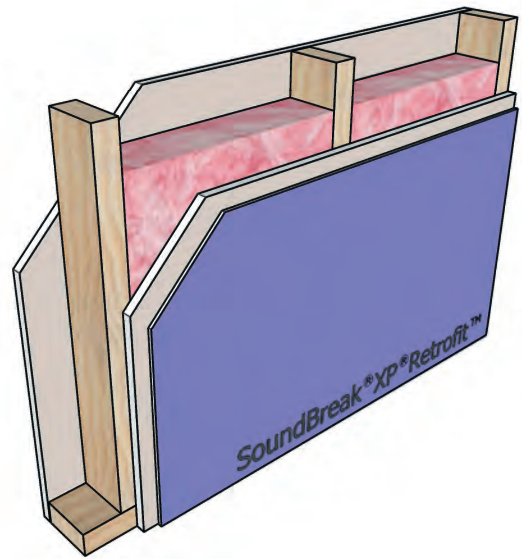


STC-39

NGC 2012067

Framing: 2x4 wood studs, 24" o.c.
 Insulation: None
 Side 1: 1/2" Gold Bond Gypsum Board
 Side 2: 5/16" Gold Bond SoundBreak XP Retrofit on
 1/2" Gold Bond Gypsum Board
 UL Design: Not Rated

Figure 268

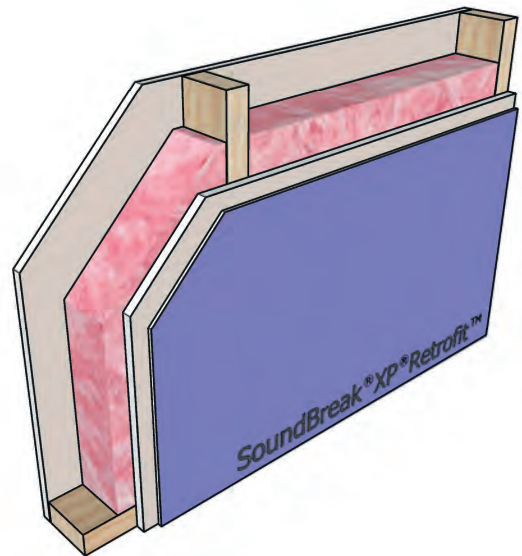


STC-40

NGC 2012050

Framing: 2x4 wood studs, 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 1/2" Gold Bond Gypsum Board
 Side 2: 5/16" Gold Bond SoundBreak XP Retrofit on
 1/2" Gold Bond Gypsum Board
 UL Design: Not Rated

Figure 270



STC-45

NGC 2012066

Framing: 2x4 wood studs, 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 1/2" Gold Bond Gypsum Board
 Side 2: 5/16" Gold Bond SoundBreak XP Retrofit on
 1/2" Gold Bond Gypsum Board
 UL Design: Not Rated

SoundBreak XP Retrofit Partitions

Figure 271

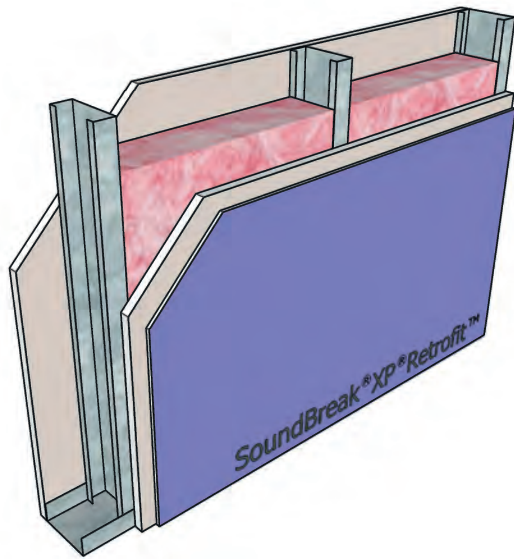
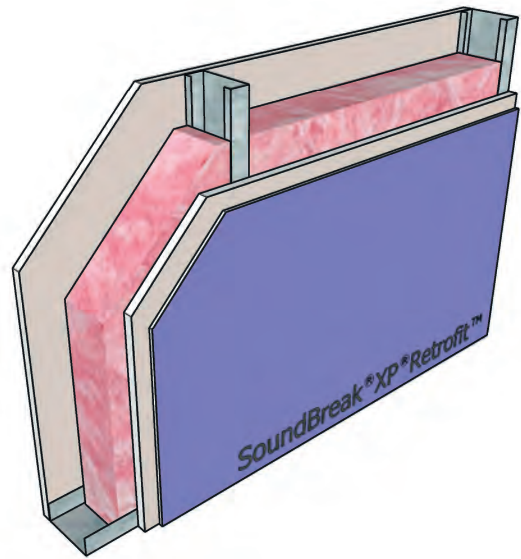


Figure 272



STC-52

NGC 2013031

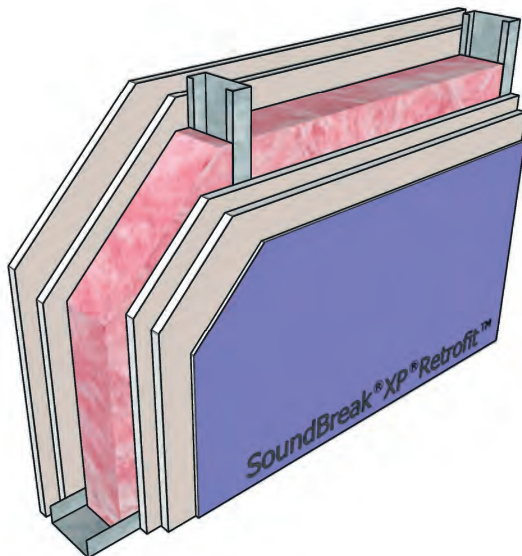
Framing: 3-5/8" steel studs, 25 gauge (18 mil), 16" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/16" Gold Bond SoundBreak XP Retrofit on
 5/8" Fire-Shield Gypsum Board
 UL Design: V438, U465

STC-53

NGC 2013041

Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 5/8" Fire-Shield Gypsum Board
 Side 2: 5/16" Gold Bond SoundBreak XP Retrofit on
 5/8" Fire-Shield Gypsum Board
 UL Design: V438, U465

Figure 273



STC-58

NGC 2016026

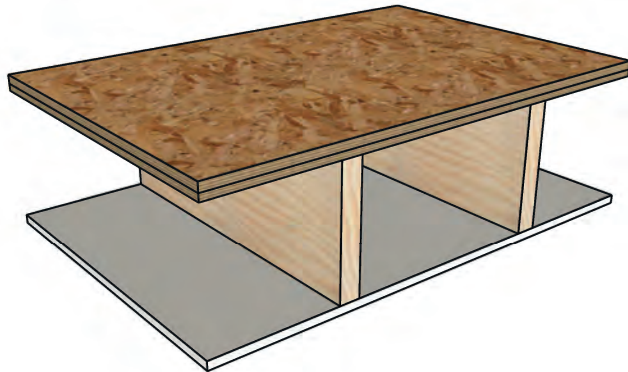
Framing: 3-5/8" steel studs, 25 gauge (18 mil), 24" o.c.
 Insulation: 3-1/2" glass fiber
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board
 Side 2: 5/16" Gold Bond SoundBreak XP Retrofit on
 2 layers 5/8" Fire-Shield Gypsum Board
 UL Design: V438, U411 - 2 hour

Floor-Ceiling Assemblies



Floor-Ceiling Assemblies

Figure 274



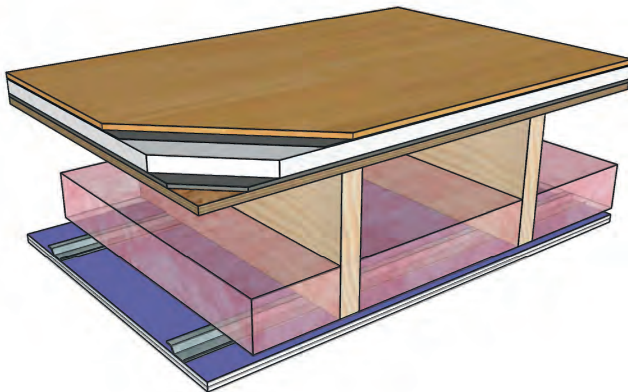
STC-37 **NGC 4024**
IIC-66 (carpet and pad) **NGC 5033**

Framing: 2x10 wood joists, 16" o.c.
 Insulation: None
 Floor: 3/8" plywood on 1/2" plywood subfloor

Ceiling: 1/2" Fire-Shield C Gypsum Board

UL Design: L522 - 1 hour

Figure 276

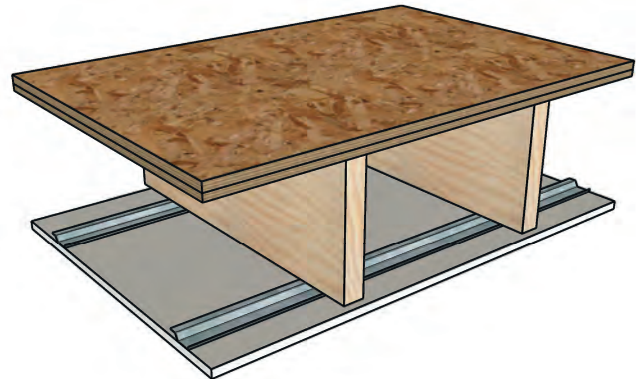


STC-58 **NGC 5018017**
IIC-59 **NGC 7018007**

Framing: 2x10 wood joists, 16" o.c.
 Insulation: 3-1/2" glass fiber
 Floor: Engineered wood on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 5/8" plywood
 Ceiling: 3/4" SoundBreak XP Ceiling Board on RC-1

UL Design: M514 - 1 hour

Figure 275



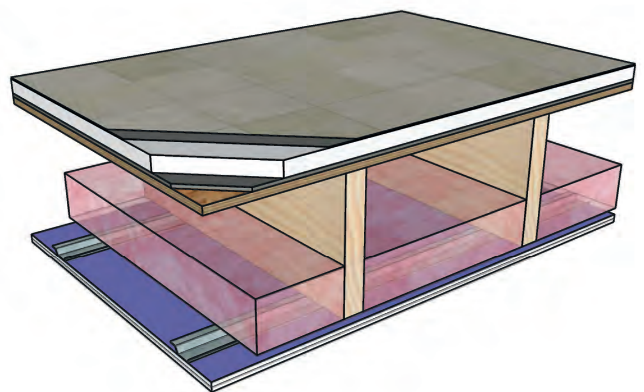
STC-45 **NGC 4107**
IIC-63 (carpet and pad) **NGC 5165**

Framing: 2x10 wood joists, 16" o.c.
 Insulation: None
 Floor: 3/8" plywood on 1/2" plywood subfloor

Ceiling: 1/2" Fire-Shield C Gypsum Board on RC-1

UL Design: L502 - 1 hour

Figure 277



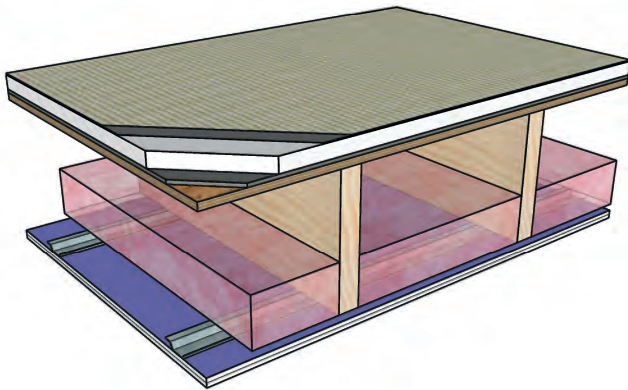
STC-58 **NGC 5018018**
IIC-60 **NGC 7018008**

Framing: 2x10 wood joists, 16" o.c.
 Insulation: 3-1/2" glass fiber
 Floor: Vinyl tile on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 5/8" plywood
 Ceiling: 3/4" SoundBreak XP Ceiling Board on RC-1

UL Design: M514 - 1 hour

Floor-Ceiling Assemblies

Figure 278



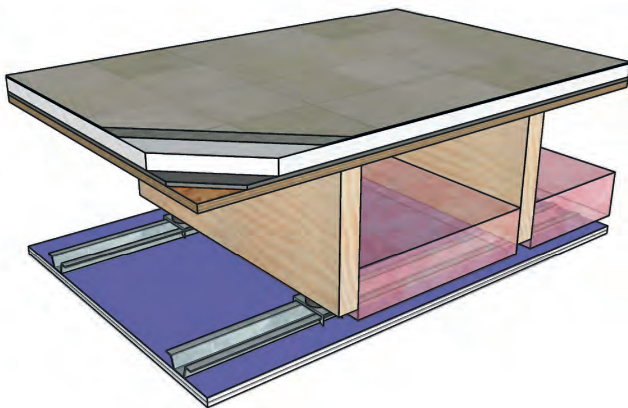
STC-58
IIC-78

NGC 5018019
NGC 7018009

Framing: 2x10 wood joists, 16" o.c.
Insulation: 3-1/2" glass fiber
Floor: Carpet on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 5/8" plywood
Ceiling: 3/4" SoundBreak XP Ceiling Board on RC-1

UL Design: M514 - 1 hour

Figure 280



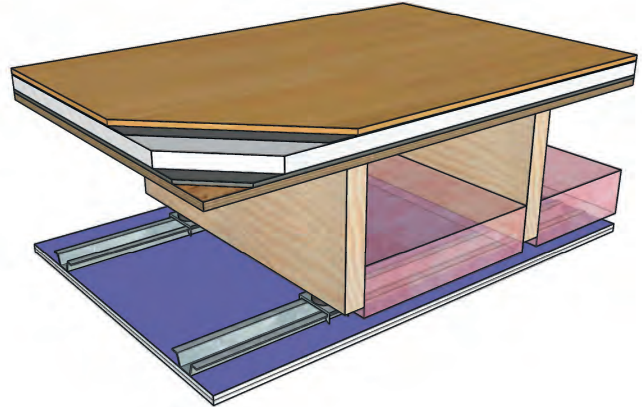
STC-58
IIC-65

NGC 5019007
NGC 7019007

Framing: 2x10 wood joists, 16" o.c.
Insulation: 3-1/2" glass fiber
Floor: Vinyl tile on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 15/32" plywood
Ceiling: 3/4" SoundBreak XP Ceiling Board on 7/8" furring channel and resilient isolation clips

UL Design: M514 - 1 hour

Figure 279



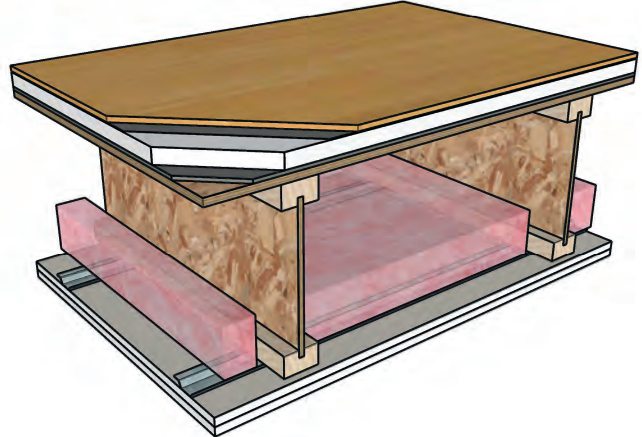
STC-59
IIC-61

NGC 5019008
NGC 7019008

Framing: 2x10 wood joists, 16" o.c.
Insulation: 3-1/2" glass fiber
Floor: Engineered wood on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 15/32" plywood
Ceiling: 3/4" SoundBreak XP Ceiling Board on 7/8" furring channel and resilient isolation clips

UL Design: M514 - 1 hour

Figure 281



STC-58
IIC-61

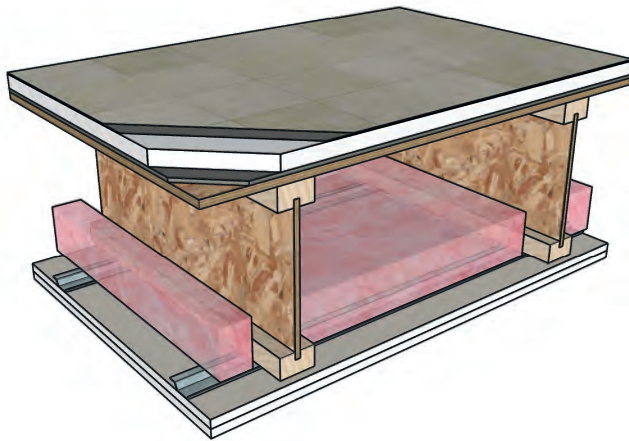
NGC 5019076
NGC 7019100

Framing: 12" wood I-joists, 24" o.c.
Insulation: 3-1/2" glass fiber
Floor: Engineered wood on foam mat on 3/4" gypsum underlayment on 1/8" random filament sound control mat on 3/4" OSB
Ceiling: 2 layers 1/2" Fire-Shield C Gypsum Board on RC-1

UL Design: M546 - 1 hour

Floor-Ceiling Assemblies

Figure 282

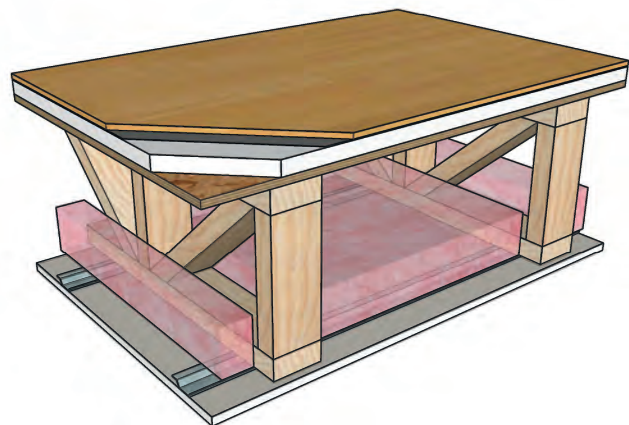


STC-58
IIC-62

NGC 5019075
NGC 7019099

Framing: 12" wood I-joists, 24" o.c.
Insulation: 3-1/2" glass fiber
Floor: Vinyl tile on foam mat on 3/4" gypsum underlayment on 1/8" random filament sound control mat on 3/4" OSB
Ceiling: 2 layers 1/2" Fire-Shield C Gypsum Board on RC-1
UL Design: M546 - 1 hour

Figure 284

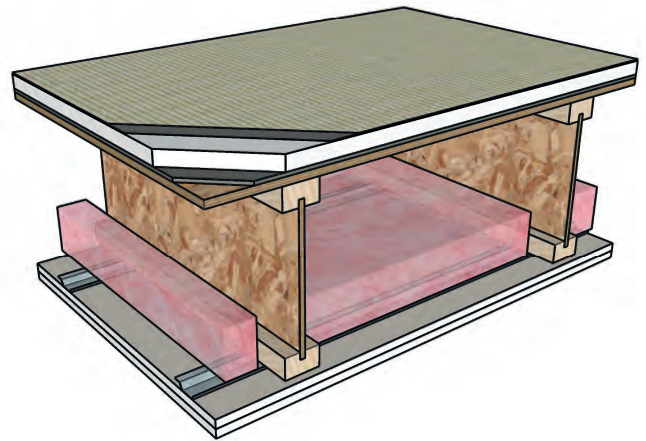


STC-55
IIC-49

NGC 5011031
NGC 7011056

Framing: 18" wood trusses, 24" o.c.
Insulation: 3-1/2" glass fiber
Floor: Engineered wood on foam mat on 3/4" gypsum underlayment on 5/8" plywood
Ceiling: 5/8" Fire-Shield C Gypsum Board on RC-1
UL Design: L563, L558 - 1 hour

Figure 283

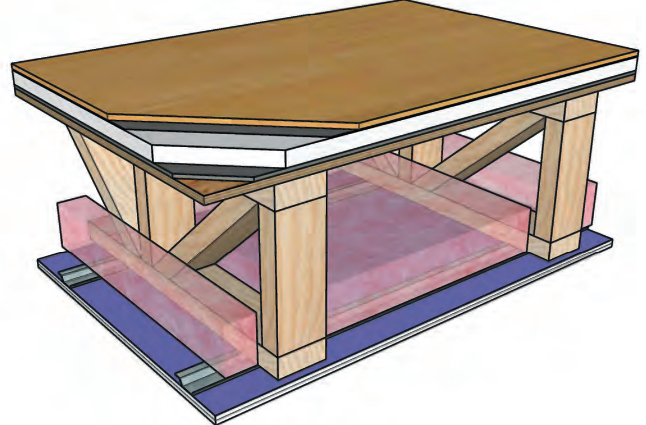


STC-57
IIC-78

NGC 5019074
NGC 7019098

Framing: 12" wood I-joists, 24" o.c.
Insulation: 3-1/2" glass fiber
Floor: Carpet on foam mat on 3/4" gypsum underlayment on 1/8" random filament sound control mat on 3/4" OSB
Ceiling: 2 layers 1/2" Fire-Shield C Gypsum Board on RC-1
UL Design: M546 - 1 hour

Figure 285



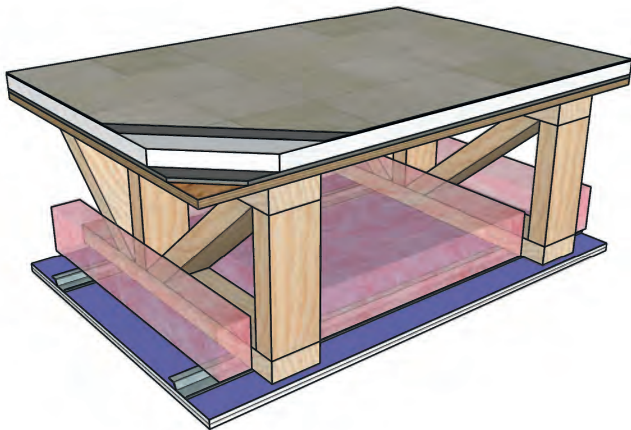
STC-59
IIC-57

NGC 5018077
NGC 7018105

Framing: 18" wood trusses, 24" o.c.
Insulation: 3-1/2" glass fiber
Floor: Engineered wood on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 23/32" OSB
Ceiling: 3/4" SoundBreak XP Ceiling Board on RC-1
UL Design: M545 - 1 hour

Floor-Ceiling Assemblies

Figure 286



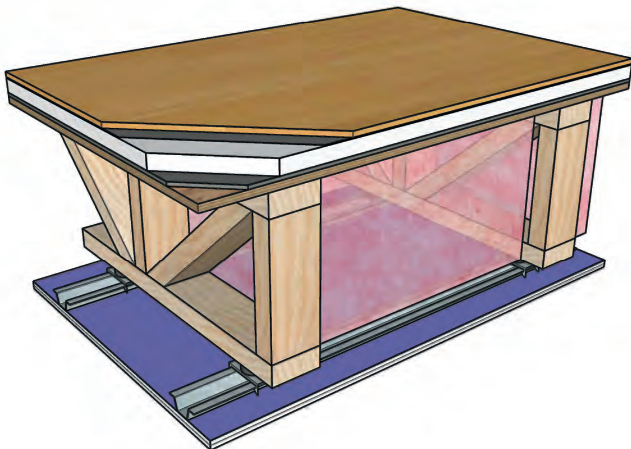
STC-59
IIC-57

NGC 5018078
NGC 7018106

Framing: 18" wood trusses, 24" o.c.
Insulation: 3-1/2" glass fiber
Floor: Vinyl tile on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 23/32" OSB
Ceiling: 3/4" SoundBreak XP Ceiling Board on RC-1

UL Design: M545 - 1 hour

Figure 288

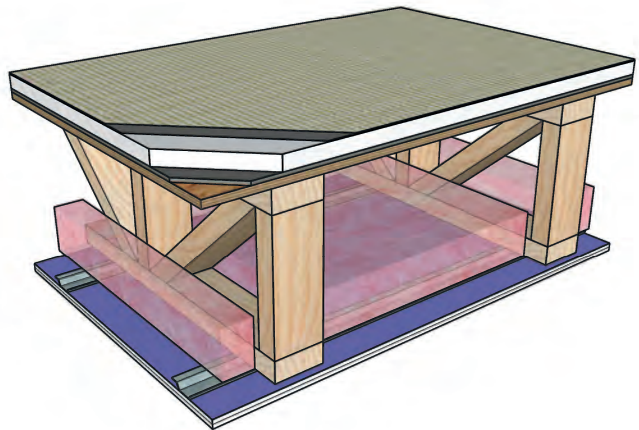


STC-60
IIC-61

NGC 5018118
NGC 7018160

Framing: 18" wood trusses, 24" o.c.
Insulation: 18" glass fiber
Floor: Engineered wood on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 23/32" OSB
Ceiling: 3/4" SoundBreak XP Ceiling Board on 7/8" furring channel and resilient isolation clips
UL Design: M545 - 1 hour

Figure 287



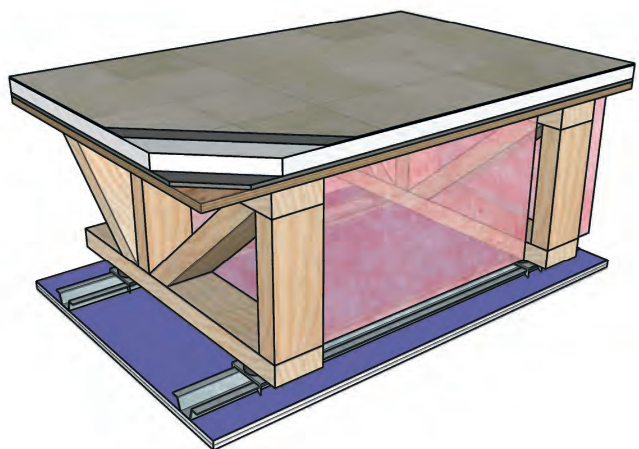
STC-58
IIC-79

NGC 5018080
NGC 7018108

Framing: 18" wood trusses, 24" o.c.
Insulation: 3-1/2" glass fiber
Floor: Carpet on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 23/32" OSB
Ceiling: 3/4" SoundBreak XP Ceiling Board on RC-1

UL Design: M545 - 1 hour

Figure 289



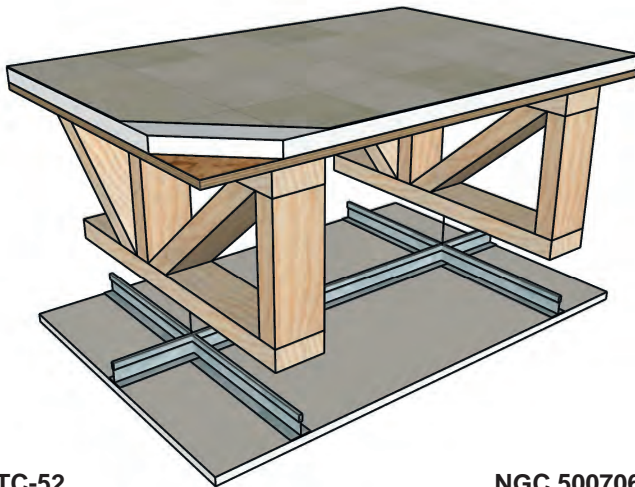
STC-60
IIC-61

NGC 5018119
NGC 7018161

Framing: 18" wood trusses, 24" o.c.
Insulation: 18" glass fiber
Floor: Vinyl tile on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 23/32" OSB
Ceiling: 3/4" SoundBreak XP Ceiling Board on 7/8" furring channel and resilient isolation clips
UL Design: M545 - 1 hour

Floor-Ceiling Assemblies

Figure 290



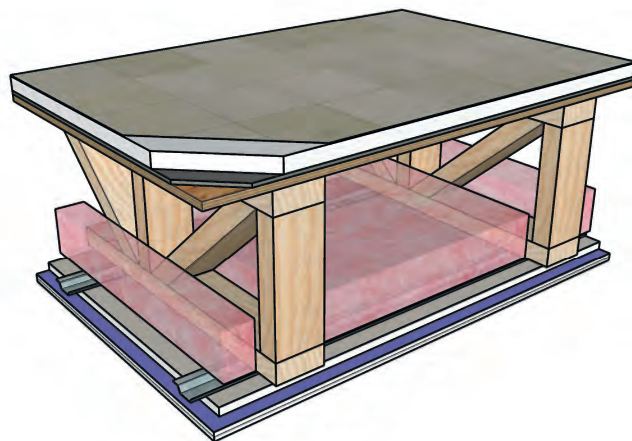
**STC-52
IIC-51**

**NGC 5007061
NGC 7007119**

Framing: 18" wood trusses, 24" o.c.
Insulation: None
Floor: Vinyl flooring on 1" gypsum underlayment on 3/4" OSB
Ceiling: 5/8" Fire-Shield C Gypsum Board on suspended ceiling grid system

UL Design: L558, L563 - 1 hour

Figure 292



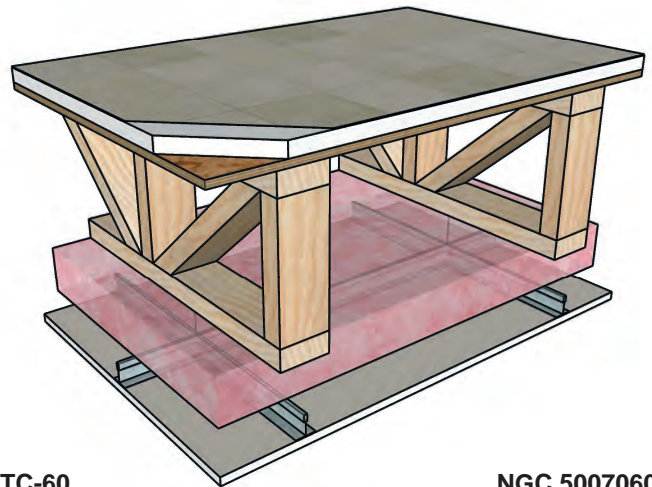
**STC-58
IIC-51**

**NGC 5007054
NGC 7007110**

Framing: 18" wood trusses, 24" o.c.
Insulation: 3-1/2" glass fiber
Floor: Vinyl flooring on 3/4" gypsum underlayment on 0.18" rubber underlayment on 3/4" OSB
Ceiling: 5/8" SoundBreak XP Wall Board on 5/8" Fire-Shield C Gypsum Board on RC-1

UL Design: L558, L563 - 1 hour

Figure 291



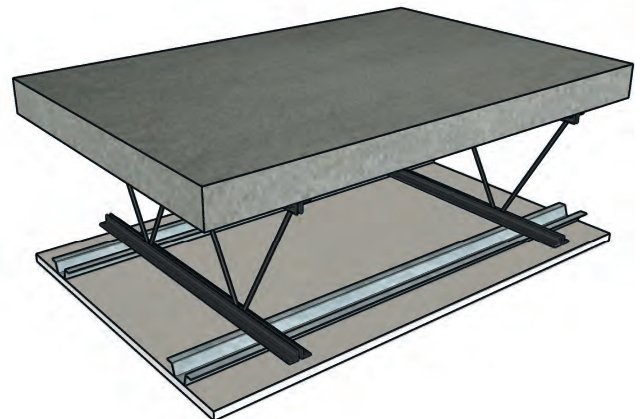
**STC-60
IIC-60**

**NGC 5007060
NGC 7007118**

Framing: 18" wood trusses, 24" o.c.
Insulation: 3-1/2" glass fiber
Floor: Vinyl flooring on 1" gypsum underlayment on 3/4" OSB
Ceiling: 5/8" Fire-Shield C Gypsum Board on suspended ceiling grid system

UL Design: L558, L563 - 1 hour

Figure 293



**STC-53
IIC-67 (carpet and pad)**

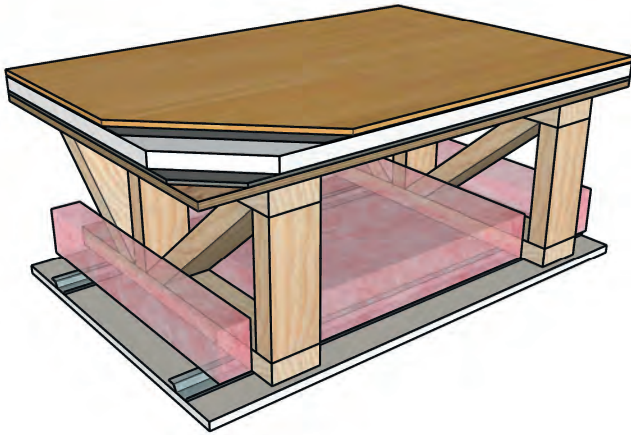
**NGC 4075
NGC 5122**

Framing: 10J2 bar joists, 24" o.c.
Insulation: None
Floor: 2-1/2" concrete on 3/8" rib lath or steel deck
Ceiling: 1/2" Fire-Shield C Gypsum Board on 7/8" steel furring channel

UL Design: G514 - 2 hour

Floor-Ceiling Assemblies

Figure 294



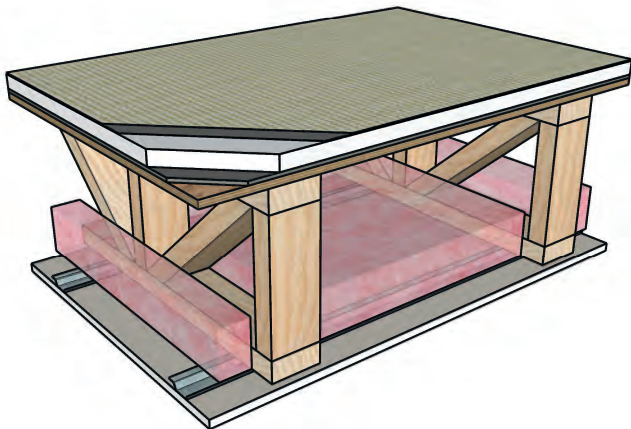
STC-57
IIC-55

NGC 5019061
NGC 7019084

Framing: 18" wood trusses, 24" o.c.
Insulation: 3-1/2" glass fiber
Floor: Engineered wood on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 23/32" OSB
Ceiling: 5/8" High Strength Fire-Shield 60 Gypsum Board

UL Design: M550 - 1 hour

Figure 296



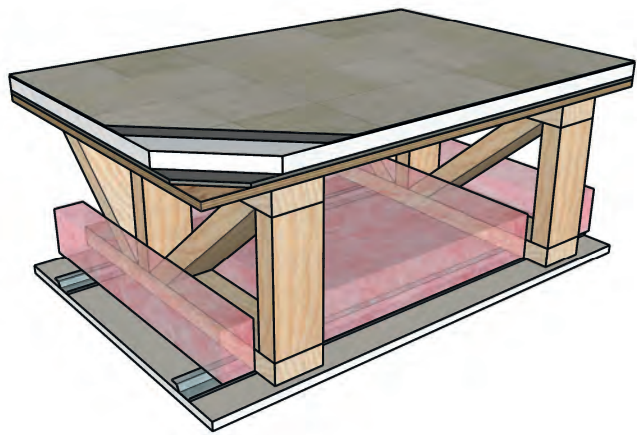
STC-56
IIC-76

NGC 5019063
NGC 7019086

Framing: 18" wood trusses, 24" o.c.
Insulation: 3-1/2" glass fiber
Floor: Carpet on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 23/32" OSB
Ceiling: 5/8" High Strength Fire-Shield 60 Gypsum Board

UL Design: M550 - 1 hour

Figure 295



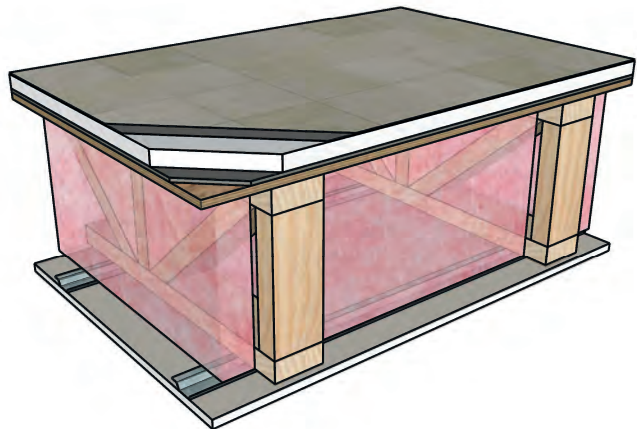
STC-57
IIC-58

NGC 5019062
NGC 7019085

Framing: 18" wood trusses, 24" o.c.
Insulation: 3-1/2" glass fiber
Floor: Vinyl Tile on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 23/32" OSB
Ceiling: 5/8" High Strength Fire-Shield 60 Gypsum Board

UL Design: M550 - 1 hour

Figure 297



STC-58
IIC-60

NGC 5019055
NGC 7019081

Framing: 18" wood trusses, 24" o.c.
Insulation: 18" glass fiber
Floor: Vinyl Tile on foam mat on 1" gypsum underlayment on 1/4" random filament sound control mat on 23/32" OSB
Ceiling: 5/8" High Strength Fire-Shield 60 Gypsum Board

UL Design: M550 - 1 hour

Roof-Ceiling Assemblies



Roof-Ceiling Assemblies

Figure 298

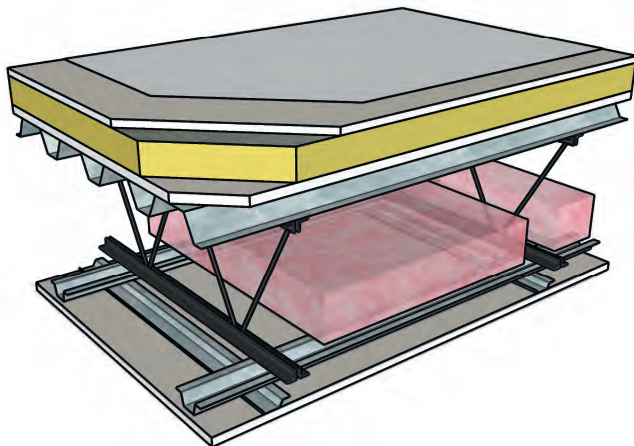


STC-36
OITC-27 **NGC 5018008**

Framing: 12K3 bar joists 48" o.c.
Roof: Membrane roof on 1/2" DEXcell FA Glass-Mat Roof Board on 3" Insulation on 5/8" DEXcell FA Glass-Mat Roof Board on steel deck
Ceiling: None

Insulation: None

Figure 300

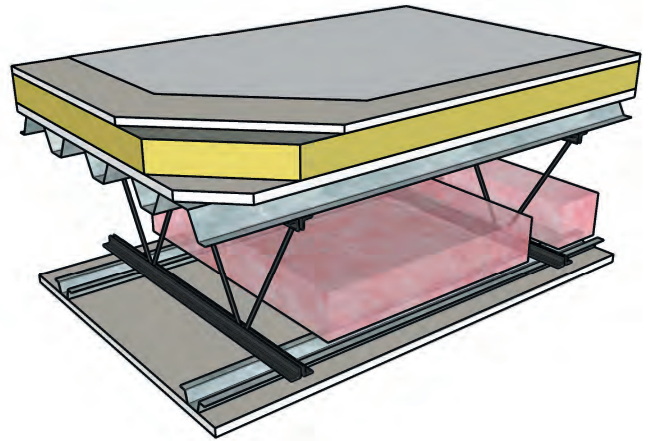


STC-57
OITC-46 **NGC 5018006**

Framing: 12K3 bar joists 48" o.c.
Roof: Membrane roof on 1/2" DEXcell FA Glass-Mat Roof Board on 3" Insulation on 5/8" DEXcell FA Glass-Mat Roof Board on steel deck
Ceiling: 1/2" Fire-Shield C Gypsum Board on RC-1 on 1-1/2" rigid furring

Insulation: 3-1/2" glass fiber

Figure 299

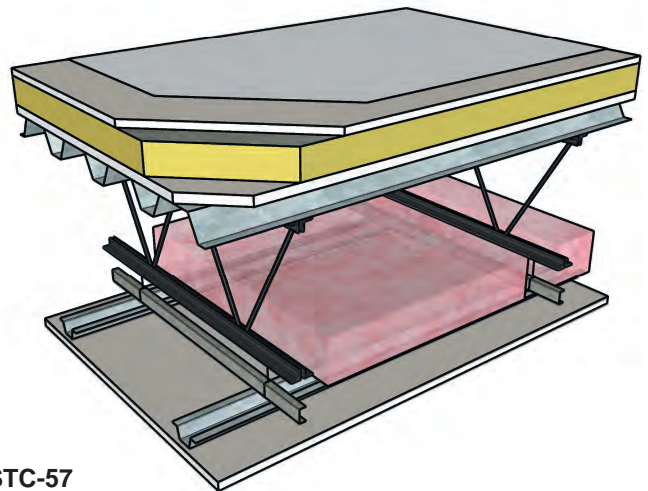


STC-56
OITC-44 **NGC 5018003**

Framing: 12K3 bar joists 48" o.c.
Roof: Membrane roof on 1/2" DEXcell FA Glass-Mat Roof Board on 3" Insulation on 5/8" DEXcell FA Glass-Mat Roof Board on steel deck
Ceiling: 1/2" Fire-Shield C Gypsum Board on 1-1/2" rigid furring channels

Insulation: 3-1/2" glass fiber

Figure 301



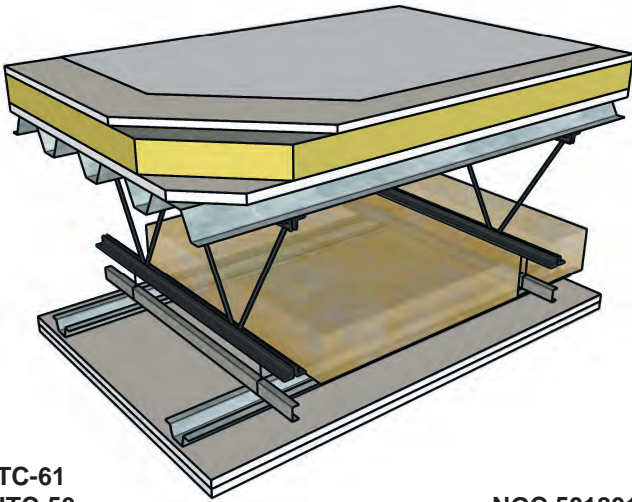
STC-57
OITC-46 **NGC 5018009**

Framing: 12K3 bar joists 48" o.c.
Roof: Membrane roof on 1/2" DEXcell FA Glass-Mat Roof Board on 3" Insulation on 5/8" DEXcell FA Glass-Mat Roof Board on steel deck
Ceiling: 1/2" Fire-Shield C Gypsum Board on 1-1/2" rigid furring channels on 1" steel channels suspended from joists

Insulation: 3-1/2" glass fiber

Roof-Ceiling Assemblies

Figure 302



STC-61

OITC-50

NGC 5018015

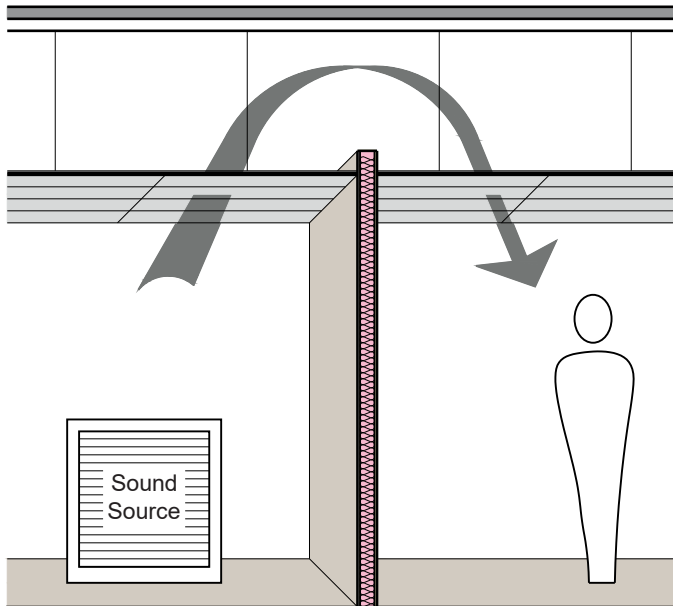
Framing:	12K3 bar joists 48" o.c.
Roof:	Membrane roof on 1/2" DEXcell FA Glass-Mat Roof Board on 3" Insulation on 5/8" DEXcell FA Glass-Mat Roof Board on steel deck
Ceiling:	2 layers 5/8" Fire-Shield Gypsum Board on 1-1/2" rigid furring channels on 1" steel channels suspended from joists
Insulation:	5-1/2" mineral wool

Ceiling Attenuation Class Assemblies



Ceiling Attenuation Class Assemblies

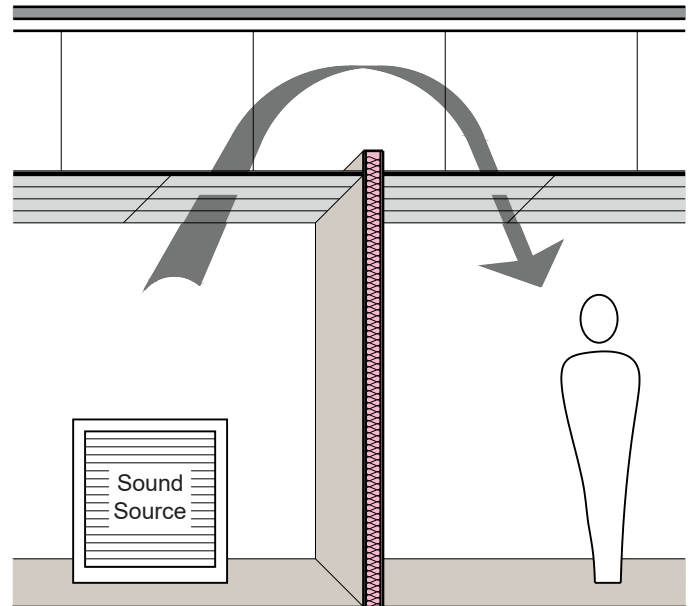
Figure 303



CAC-41 **NGC 6000001**

Ceiling: Suspended ceiling grid with 2' x 4' x 5/16"
Gridstone Hi-Strength Ceiling Panels
Insulation: None

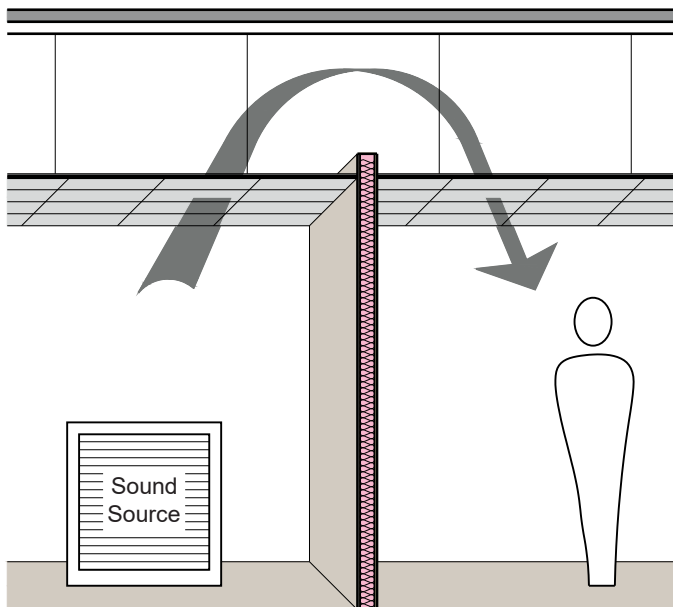
Figure 304



CAC-46 **NGC 6098001**

Ceiling: Suspended ceiling grid with 2' x 4' x 1/2"
Gridstone Ceiling Panels
Insulation: None

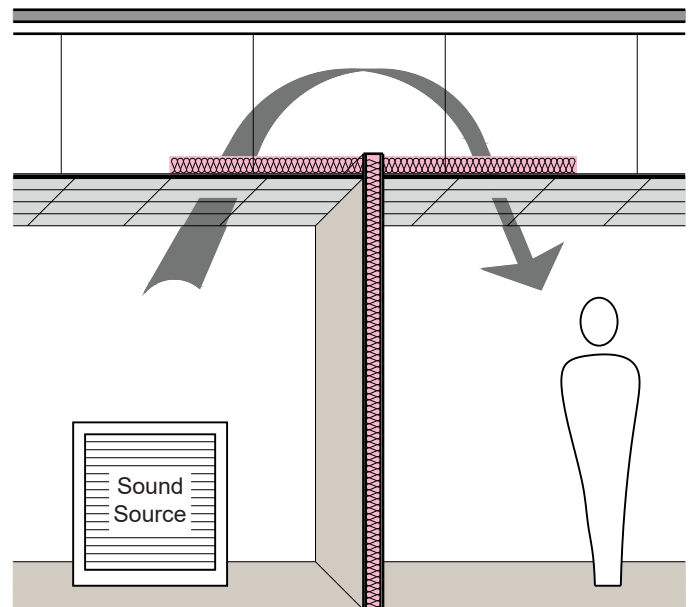
Figure 305



CAC-44 **NGC 6013012**

Ceiling: Suspended ceiling grid with 2' x 2' x 1/2"
Gridstone Ceiling Panels
Insulation: None

Figure 306

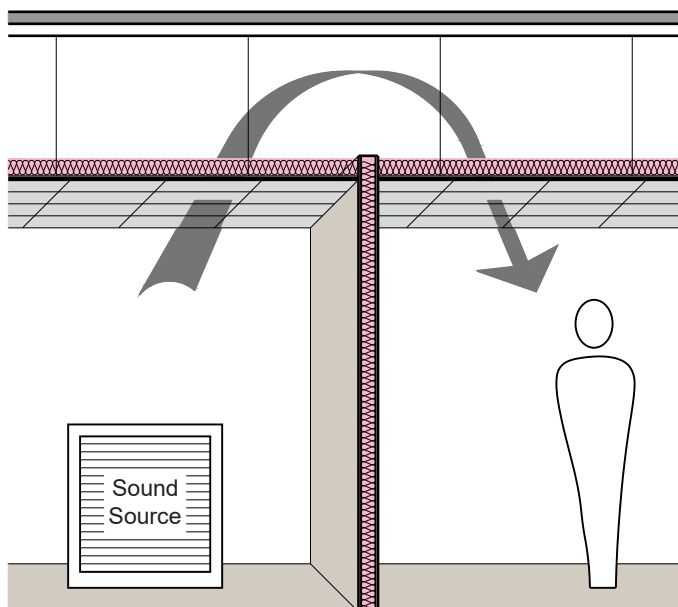


CAC-51 **NGC 6013013**

Ceiling: Suspended ceiling grid with 2' x 2' x 1/2"
Gridstone Ceiling Panels
Insulation: 3 1/2" glass fiber 48" on each side of partition

Ceiling Attenuation Class Assemblies

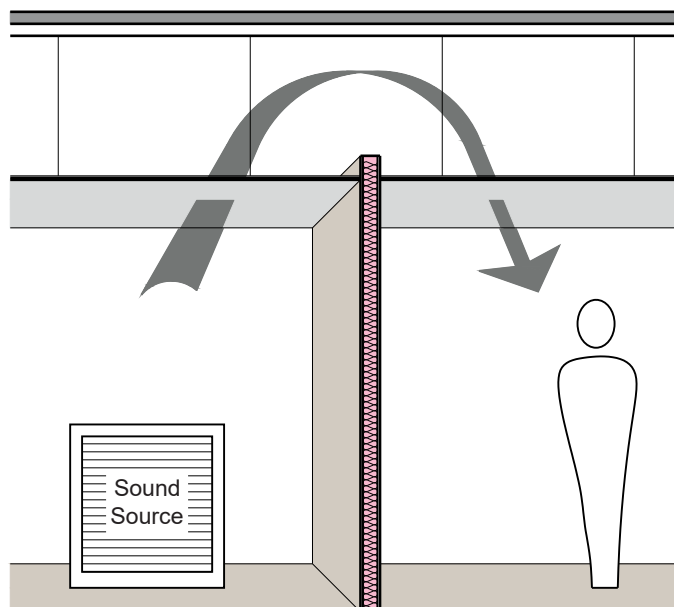
Figure 307



CAC-53 **NGC 6013014**

Ceiling: Suspended ceiling grid with 2' x 2' x 1/2"
Gridstone Ceiling Panels
Insulation: 3-1/2" glass fiber full coverage over ceiling

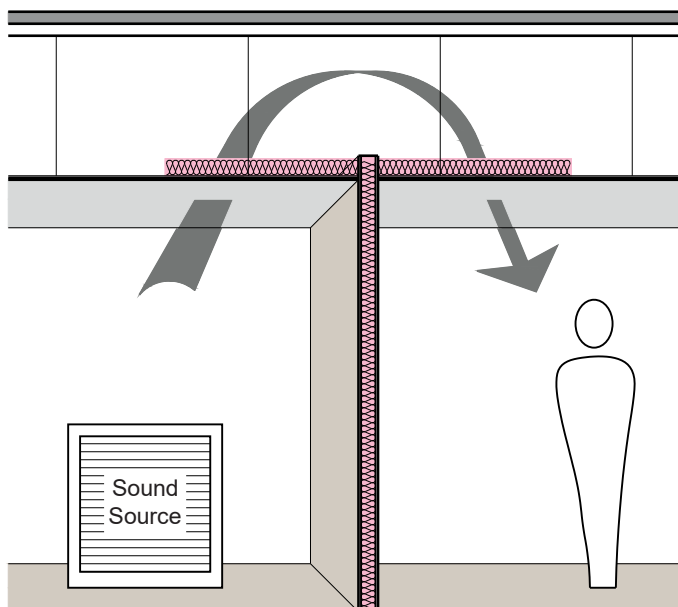
Figure 308



CAC-53 **NGC 6017015**

Ceiling: Suspended drywall grid with 5/8" Fire-Shield
Gypsum Board
Insulation: None

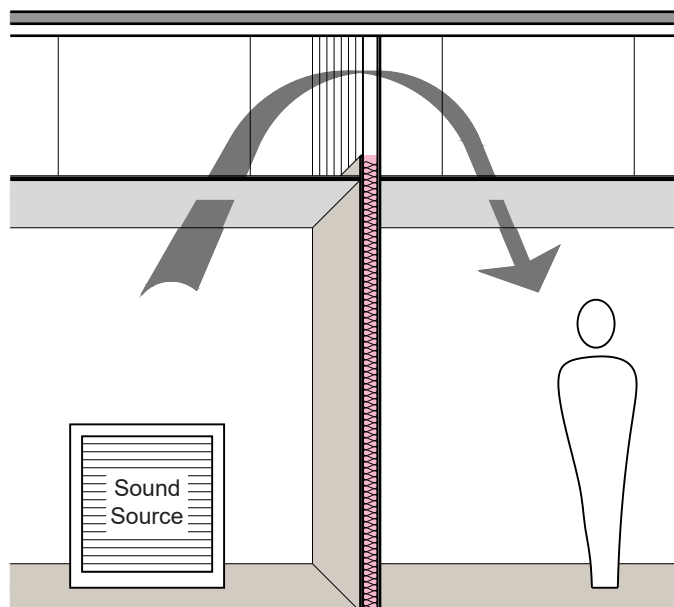
Figure 309



CAC-56 **NGC 6017014**

Ceiling: Suspended drywall grid with 5/8" Fire-Shield
Gypsum Board
Insulation: 3 1/2" glass fiber 48" on each side of partition

Figure 310



CAC-57 **NGC 6017016**

Ceiling: Suspended drywall grid with 5/8" Fire-Shield
Gypsum Board
Insulation: None
Plenum 5/8" Fire-Shield Gypsum Board on 3-5/8"
Barrier: steel studs

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From left, the technical service team: Mark Chapman, Sam Halverson and Jim Farrell.



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