



# Acoustical Assembly Guide

# The SoundBook™



**National**   
**Gypsum®**











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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.

Sound Transmission		
Energy Generated by a Source	Transmitted Through a Medium	Detected by a Receiver
Drumstick strikes drumhead creating vibrations	Vibrations transmitted through the air as pressure fluctuations	Ear receives pressure fluctuations and perceives them as sound

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 500 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 retard 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 retard 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

### 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.

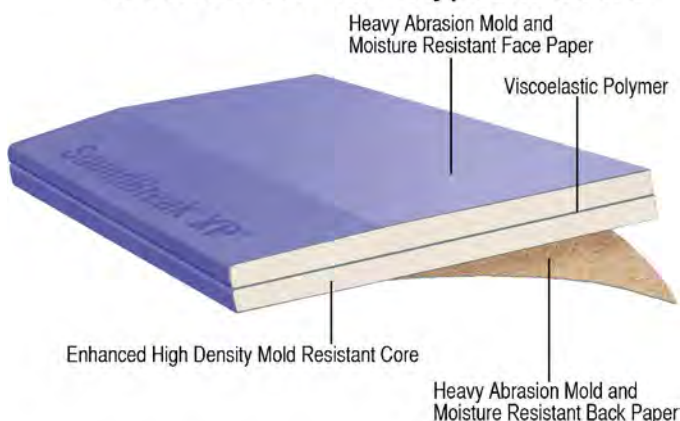


A new approach in noise reduction is represented by a new kind of acoustically enhanced gypsum board introduced by National Gypsum. Gold Bond BRAND SoundBreak XP Gypsum Board incorporates a sound-damping viscoelastic polymer sandwiched between two layers of high-density gypsum board. The polymer absorbs and dissipates noise-producing vibrational energy by converting it into negligible heat.

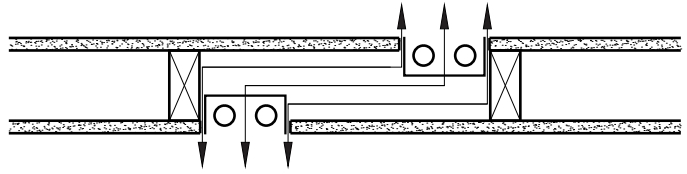
SoundBreak XP gypsum board can be used alone or in conjunction with other sound reduction strategies for higher STC ratings. As it can be installed and finished just like traditional gypsum board, requiring no additional labor or materials, it can be a cost-effective solution for reducing sound transmission.

5/8" SoundBreak XP gypsum board features a fire-resistant Type X core and is UL classified. SoundBreak XP resists 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 gypsum board can be installed as the base layer or the face layer in multi-layer systems without affecting the STC.

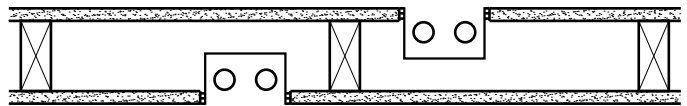
### SoundBreak® XP® Gypsum Board



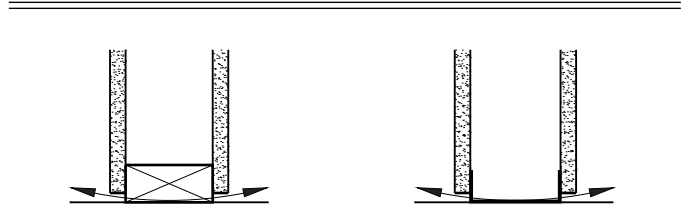
### Sound Isolation Construction



Arrows denote flanking paths for sound.



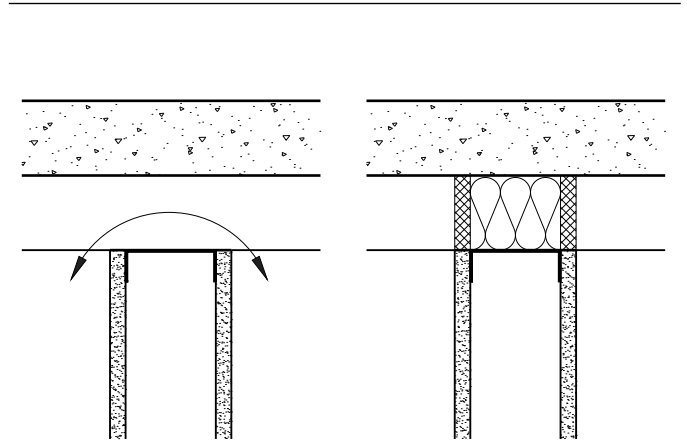
Electrical boxes offset one stud cavity and annular spaces sealed.



Arrows denote flanking paths for sound.



Perimeter of partition sealed.



Arrows denote flanking paths for sound.

Flutes of metal deck insulated and sealed.





# Steel Stud Partitions with Framing 16"o.c.

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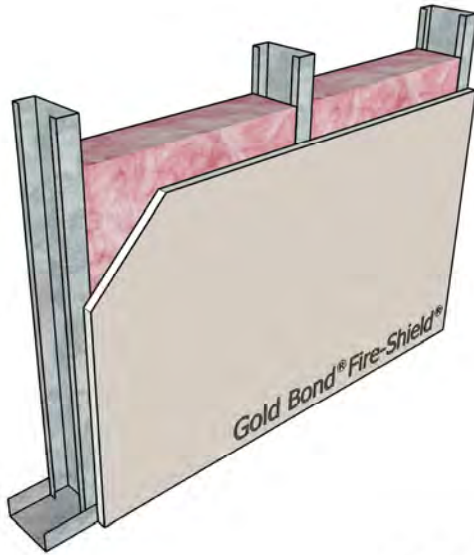






## Steel Stud Partitions with Framing 16" o.c.

Figure 1



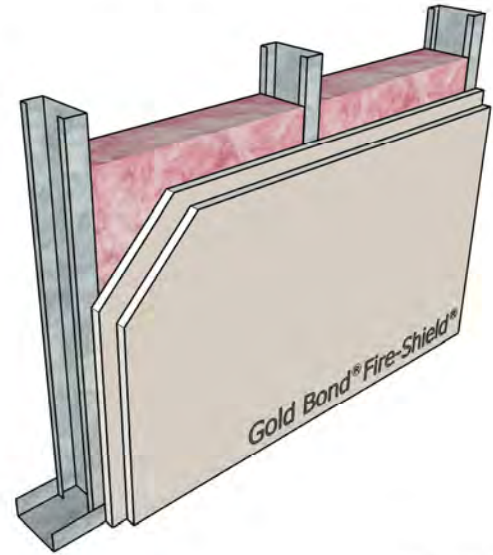
### STC-34

NGC 2013012

Framing: 3-5/8" steel studs, **20 gauge**, 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



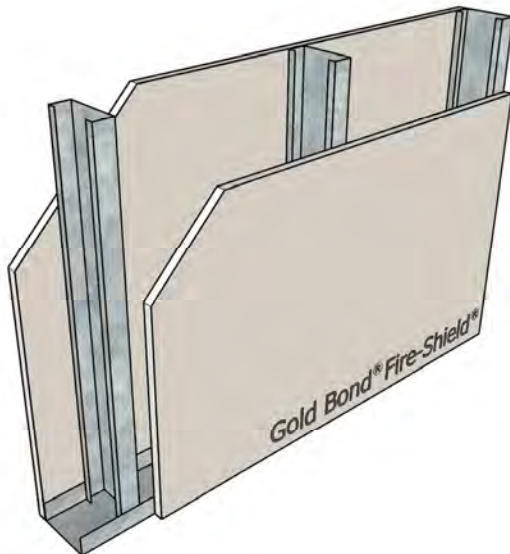
### STC-38

NGC 2013013

Framing: 3-5/8" steel studs, **20 gauge**, 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 3



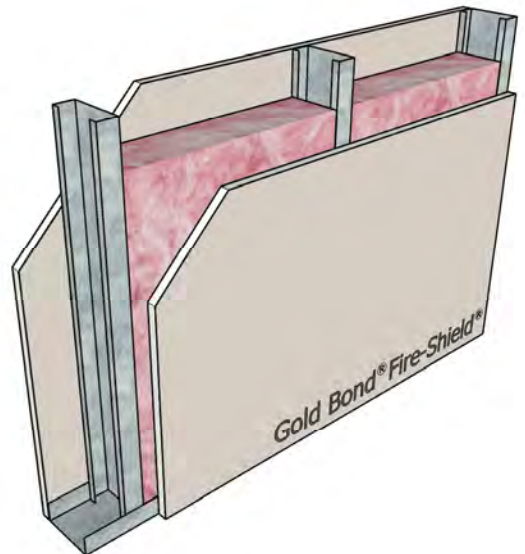
### STC-40

NGC 2518

Framing: 3-5/8" steel studs, **25 gauge**, 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 4



### STC-44

NGC 2514

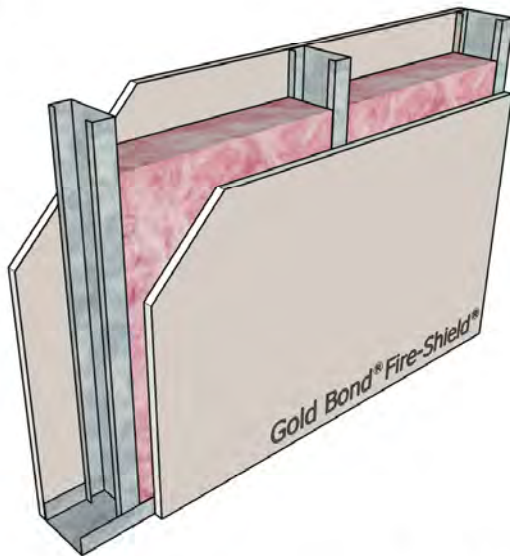
Framing: 3-5/8" steel studs, **25 gauge**, 16" o.c.  
 Insulation: 2-1/2" glass fiber  
 Side 1: 5/8" Fire-Shield Gypsum Board  
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour



## Steel Stud Partitions with Framing 16" o.c.

Figure 5



**STC-40**

**NGC 2013004**

Framing: 3-5/8" steel studs, **20 gauge**, 16" o.c.

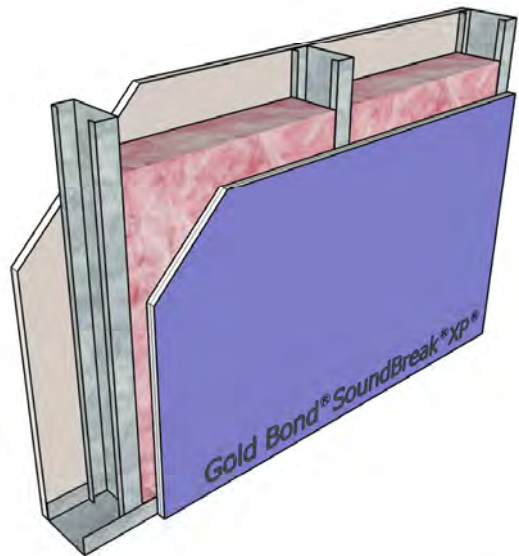
Insulation: 3-1/2" glass fiber

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

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

UL Design: V438, U465 - 1 hour

Figure 6



**STC-49**

**NGC 2009058**

Framing: 3-5/8" steel studs, 25 gauge, 16" o.c.

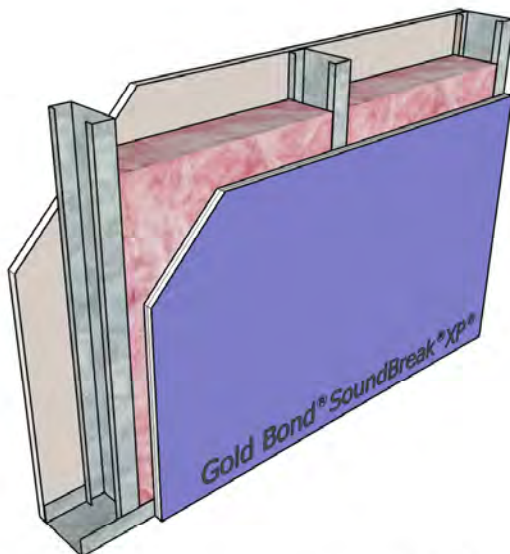
Insulation: 3-1/2" glass fiber

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

Side 2: 5/8" SoundBreak XP Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 7



**STC-45**

**NGC 2013005**

Framing: 3-5/8" steel studs, **20 gauge**, 16" o.c.

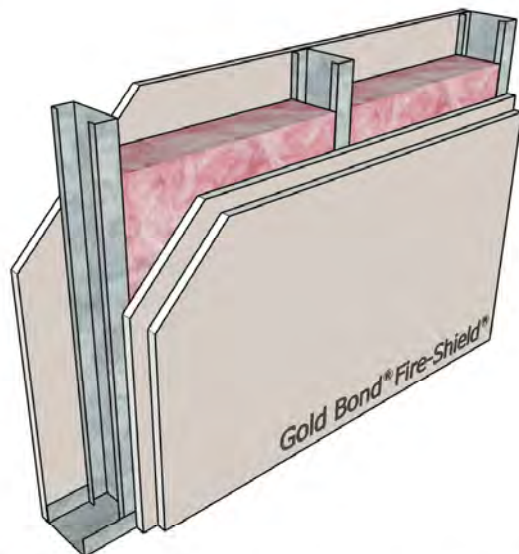
Insulation: 3-1/2" glass fiber

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

Side 2: 5/8" SoundBreak XP Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 8



**STC-49**

**NGC 2515**

Framing: 3-5/8" steel studs, 25 gauge, 16" o.c.

Insulation: 2-1/2" glass fiber

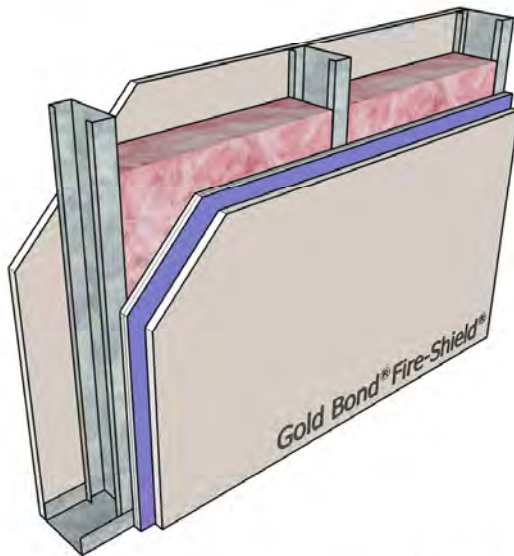
Side 1: 5/8" Fire-Shield Gypsum Board

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

UL Design: V438, U465 - 1 hour

## Steel Stud Partitions with Framing 16" o.c.

Figure 9

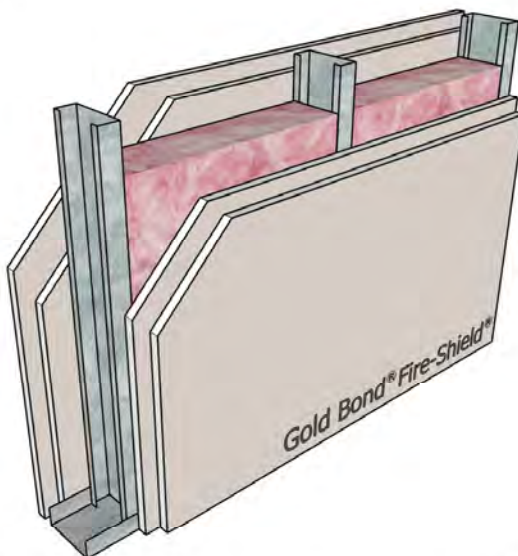


**STC-52**

**RAL-TL07-148**

Framing: 3-5/8" steel studs, 25 gauge, 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  
 5/8" SoundBreak XP Gypsum Board  
 UL Design: V438, U465 - 1 hour

Figure 11



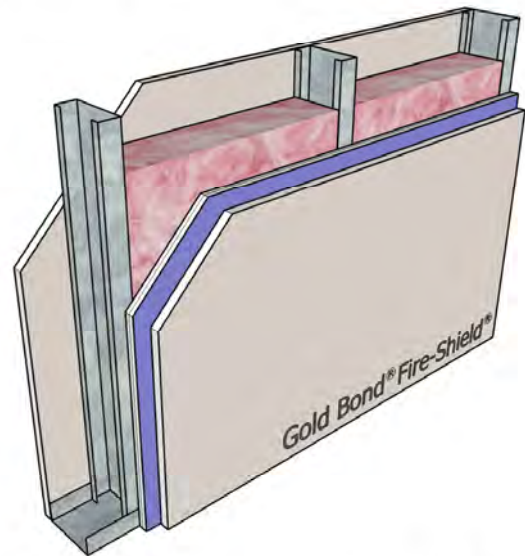
**STC-53**

**NGC 2516**

Framing: 3-5/8" steel studs, 25 gauge, 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 10

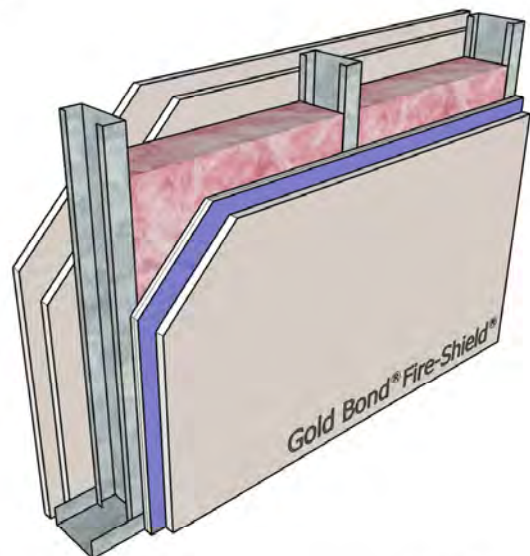


**STC-46**

**NGC 2013006**

Framing: 3-5/8" steel studs, **20 gauge**, 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  
 5/8" SoundBreak XP Gypsum Board  
 UL Design: V438, U465 - 1 hour

Figure 12



**STC-50**

**NGC 2013007**

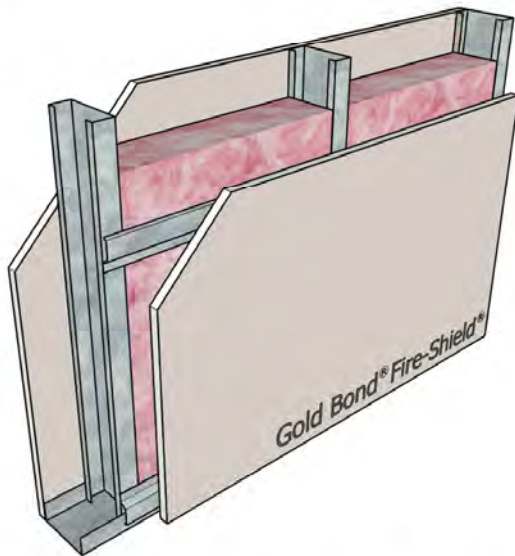
Framing: 3-5/8" steel studs, **20 gauge**, 16" o.c.  
 Insulation: 3-1/2" glass fiber  
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board  
 Side 2: 5/8" Fire-Shield Gypsum Board on  
 5/8" SoundBreak XP Gypsum Board

UL Design: V438, U411 - 2 hour



## Steel Stud Partitions with Framing 16" o.c.

Figure 13



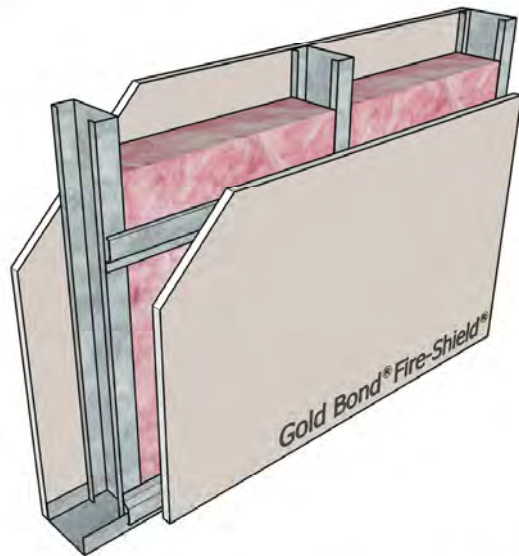
**STC-48**

**NGC 2009059**

Framing: 3-5/8" steel studs, 25 gauge, 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 14



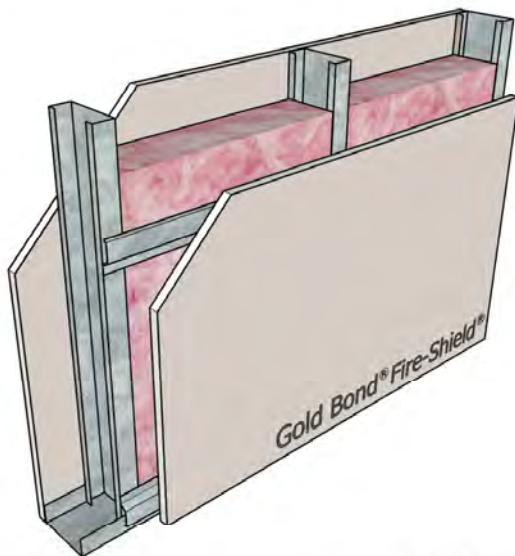
**STC-49**

**NGC 2013008**

Framing: 3-5/8" steel studs, **20 gauge**, 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 15



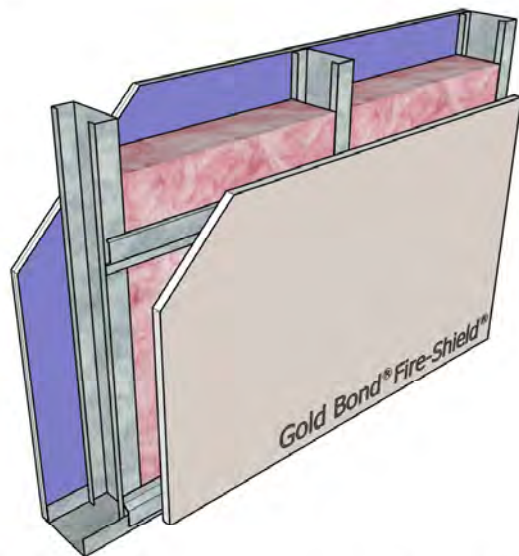
**STC-47**

**NGC 2014086**

Framing: 3-5/8" steel studs, **16 gauge**, 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-52**

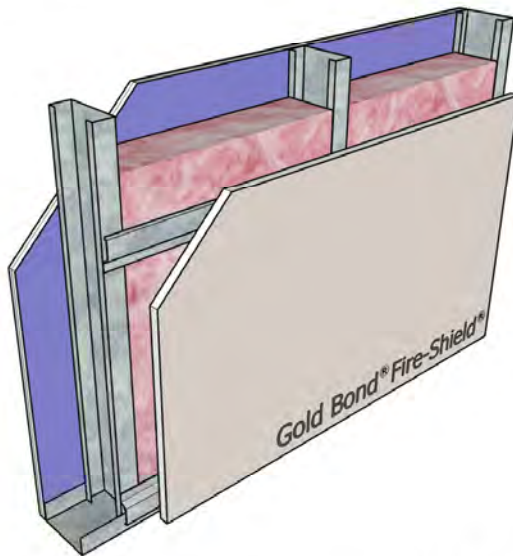
**NGC 2013009**

Framing: 3-5/8" steel studs, **20 gauge**, 16" o.c.  
 Insulation: 3-1/2" glass fiber  
 Side 1: 5/8" SoundBreak XP 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-51

NGC 2014085

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

UL Design: V438, U465 - 1 hour

Figure 19



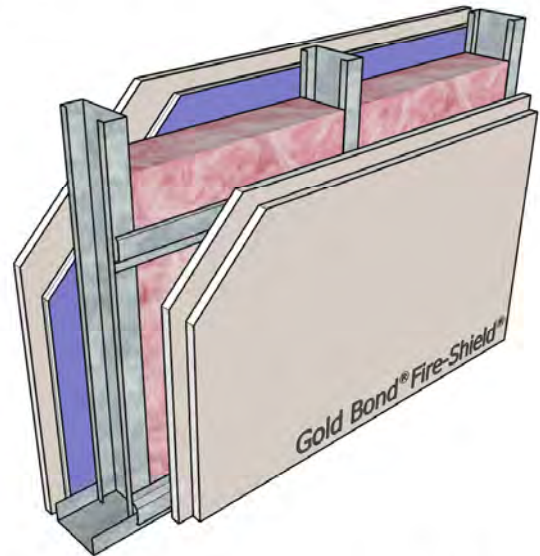
### STC-37

NGC 2013021

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

UL Design: Not Rated

Figure 18

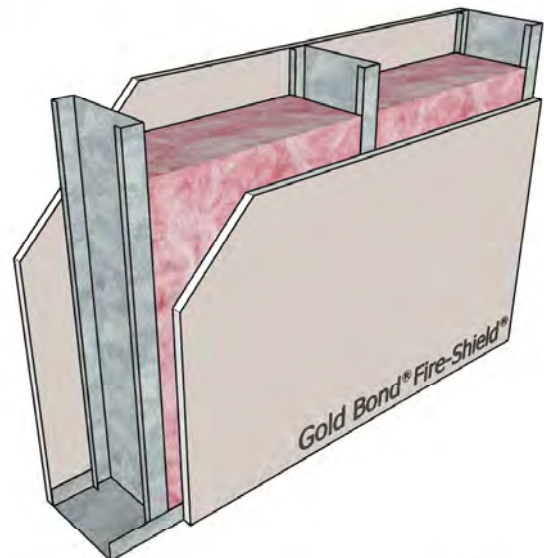


### STC-59

NGC 2014084

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

Figure 20



### STC-40

NGC 2013022

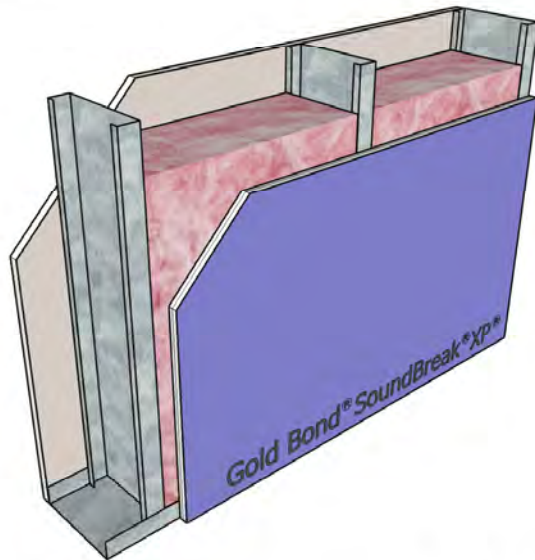
Framing: 6" steel studs, **20 gauge**, 16" o.c.  
 Insulation: 6" glass fiber  
 Side 1: 5/8" Fire-Shield Gypsum Board  
 Side 2: 5/8" Fire-Shield Gypsum Board

UL Design: V438, U465 - 1 hour



## Steel Stud Partitions with Framing 16" o.c.

Figure 21



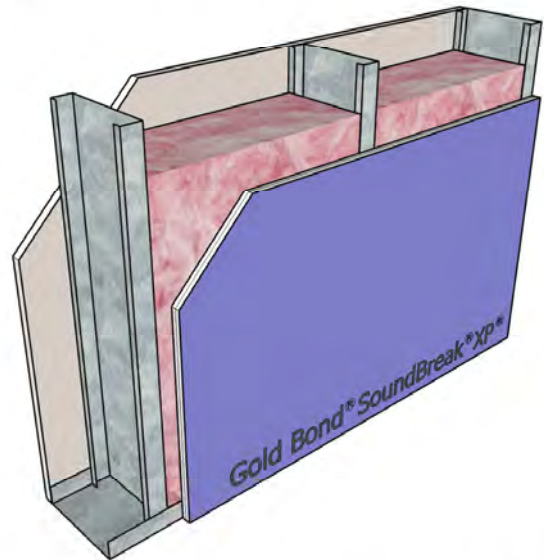
**STC-45**

**NGC 2013023**

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

UL Design: V438, U465 - 1 hour

Figure 22



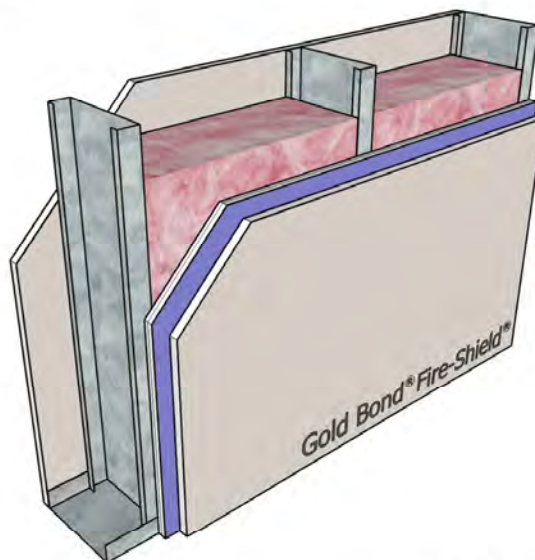
**STC-49**

**NGC 2015007**

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

UL Design: V438, U465 - 1 hour

Figure 23



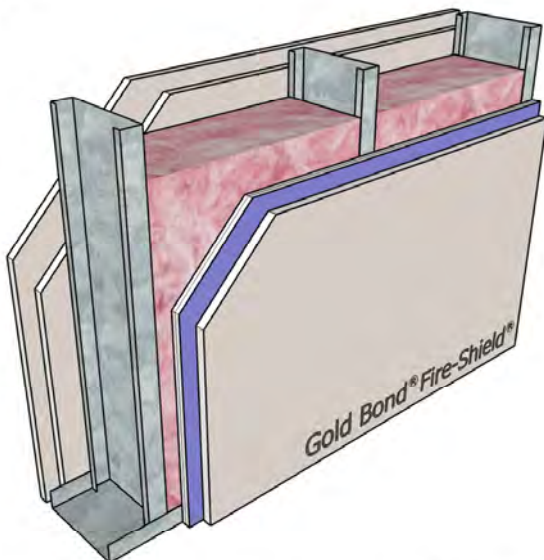
**STC-49**

**NGC 2013024**

Framing: 6" steel studs, **20 gauge**, 16" 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 Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 24



**STC-51**

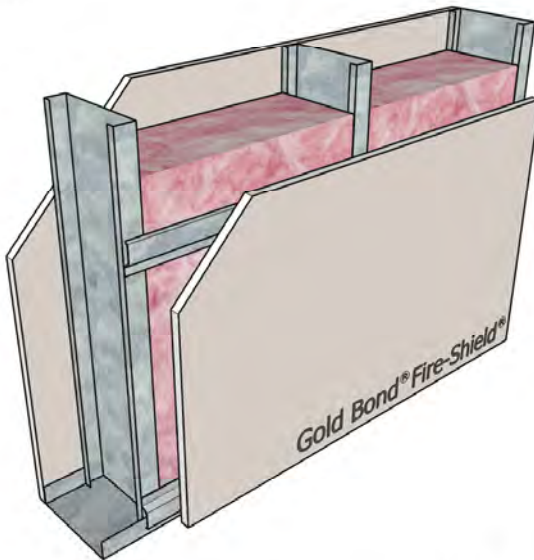
**NGC 2013025**

Framing: 6" steel studs, **20 gauge**, 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  
 5/8" SoundBreak XP Gypsum Board

UL Design: V438, U411 - 2 hour

## Steel Stud Partitions with Framing 16" o.c.

Figure 25



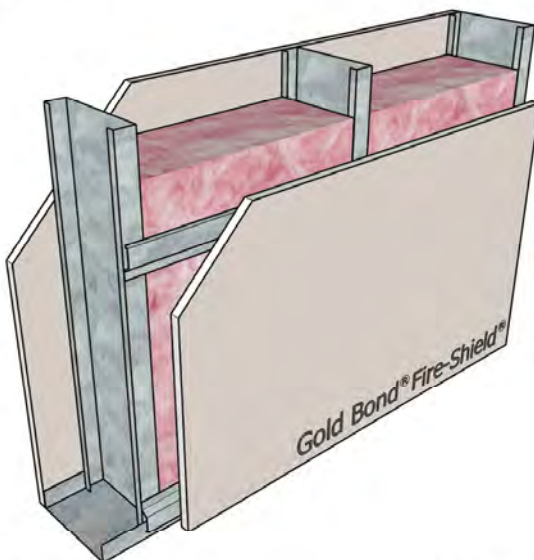
**STC-53**

**NGC 2013026**

Framing: 6" steel studs, **20 gauge**, 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 27



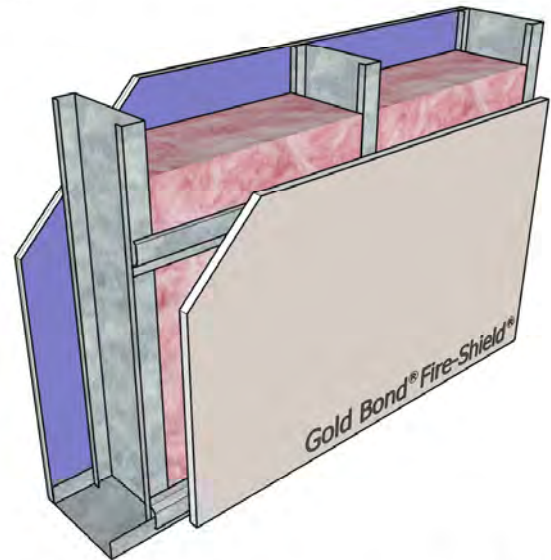
**STC-50**

**NGC 2015001**

Framing: 6" steel studs, **16 gauge**, 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 26



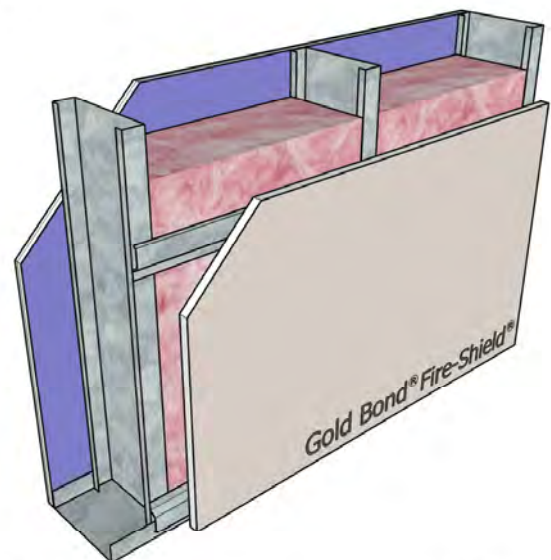
**STC-57**

**NGC 2013027**

Framing: 6" steel studs, **20 gauge**, 16" o.c.  
 Insulation: 3-1/2" glass fiber  
 Side 1: 5/8" SoundBreak XP Gypsum Board  
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour

Figure 28



**STC-55**

**NGC 2015002**

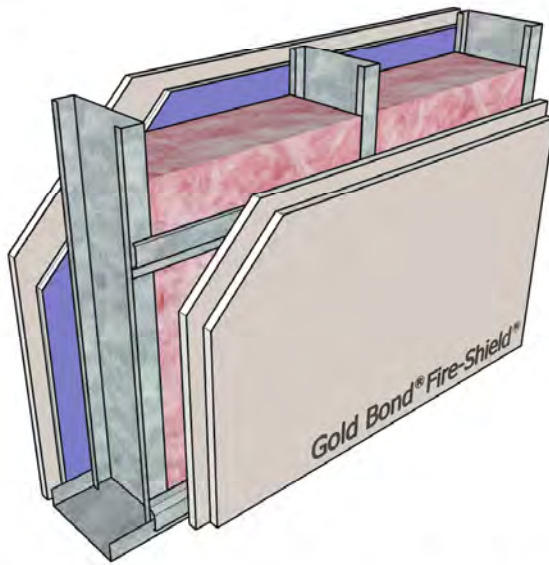
Framing: 6" steel studs, **16 gauge**, 16" o.c.  
 Insulation: 3-1/2" glass fiber  
 Side 1: 5/8" SoundBreak XP Gypsum Board  
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1

UL Design: V438, U465 - 1 hour



## Steel Stud Partitions with Framing 16" o.c.

Figure 29



### STC-61

### NGC 2015003

Framing: 6" steel studs, **16 gauge**, 16" o.c.

Insulation: 6" glass fiber

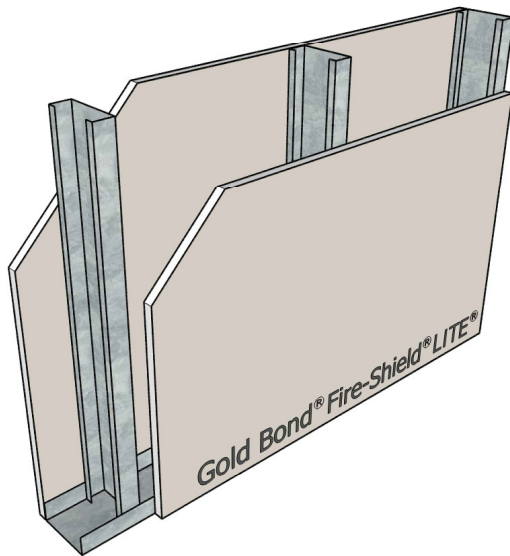
Side 1: 5/8" Fire-Shield Gypsum Board on  
5/8" SoundBreak XP Gypsum Board

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

UL Design: V438 - 2 hour

## Steel Stud Partitions with Framing 16" o.c.

Figure 30



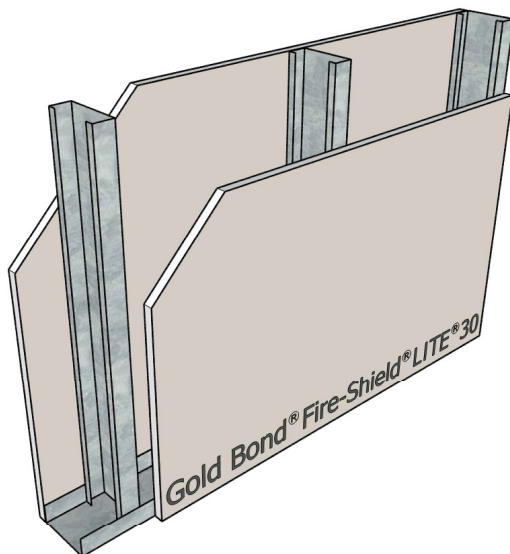
### STC-38

NGC 2014019

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

UL Design: V438, U465 - 1 hour

Figure 32



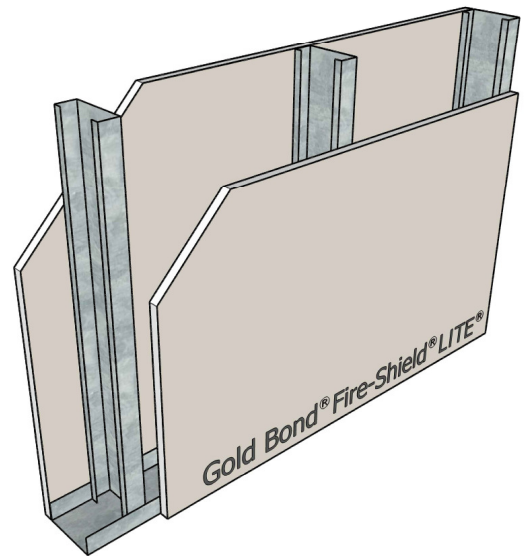
### STC-35

NGC 2014011

Framing: 3-5/8" steel studs, **20 gauge**, 16" o.c.  
 Insulation: None  
 Side 1: 5/8" Fire-Shield LITE 30 Gypsum Board  
 Side 2: 5/8" Fire-Shield LITE 30 Gypsum Board

UL Design: W411 - 1/2 hour

Figure 31



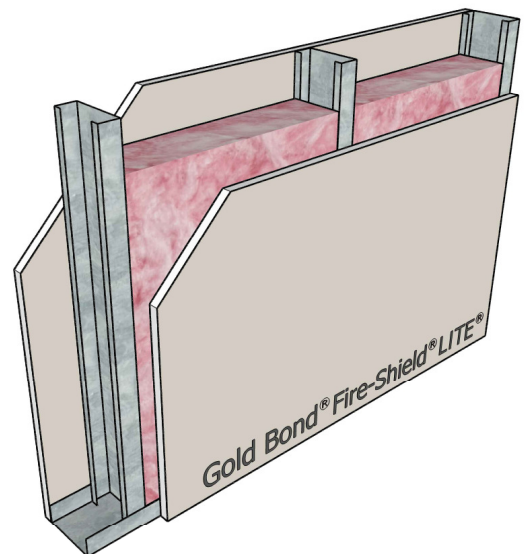
### STC-37

NGC 2014023

Framing: 3-5/8" steel studs, **20 gauge**, 16" o.c.  
 Insulation: None  
 Side 1: 5/8" Fire-Shield LITE Gypsum Board  
 Side 2: 5/8" Fire-Shield LITE Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 33



### STC-41

NGC 2014018

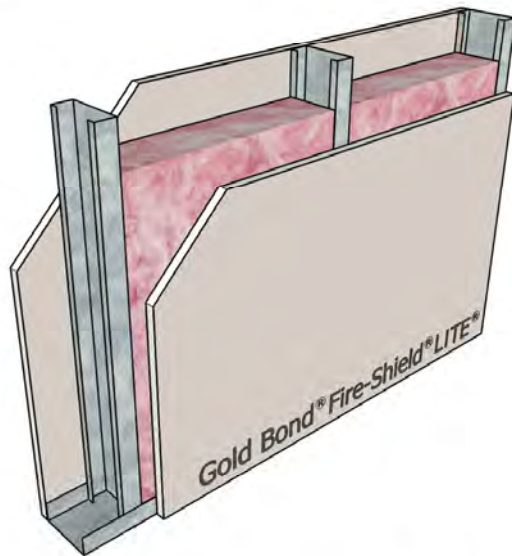
Framing: 3-5/8" steel studs, 25 gauge, 16" o.c.  
 Insulation: 3-1/2" glass fiber  
 Side 1: 5/8" Fire-Shield LITE Gypsum Board  
 Side 2: 5/8" Fire-Shield LITE Gypsum Board

UL Design: V438, U465 - 1 hour



## Steel Stud Partitions with Framing 16" o.c.

Figure 34



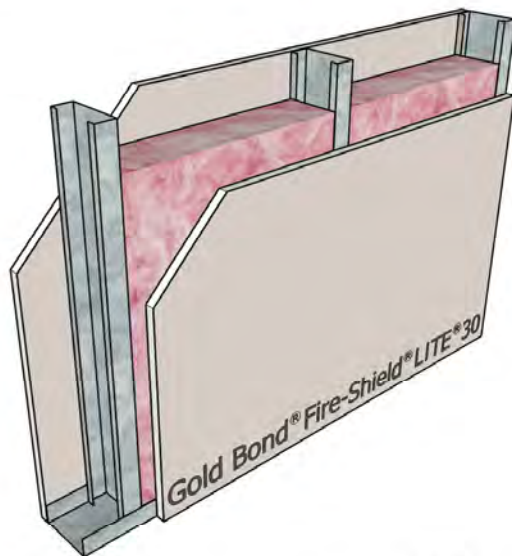
**STC-41**

**NGC 2014022**

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

UL Design: V438, U465 - 1 hour

Figure 36



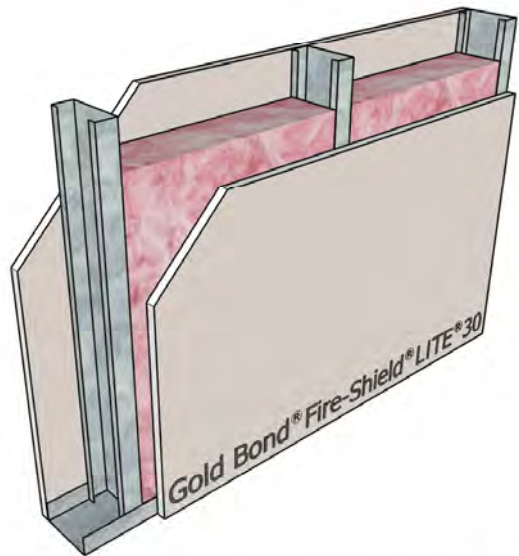
**STC-39**

**NGC 2014010**

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

UL Design: W411 - 1/2 hour

Figure 35



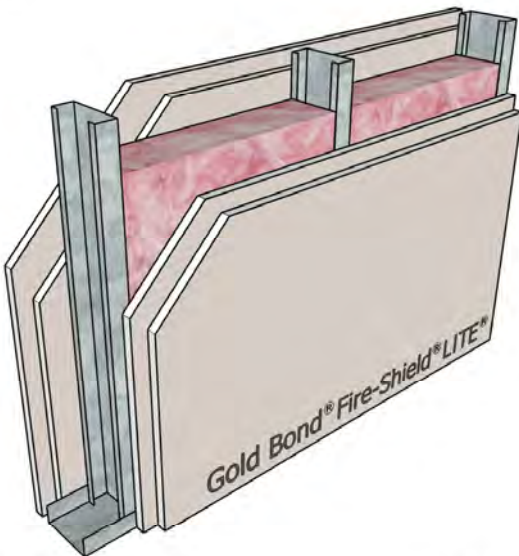
**STC-38**

**NGC 2014009**

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

UL Design: W411 - 1/2 hour

Figure 37



**STC-50**

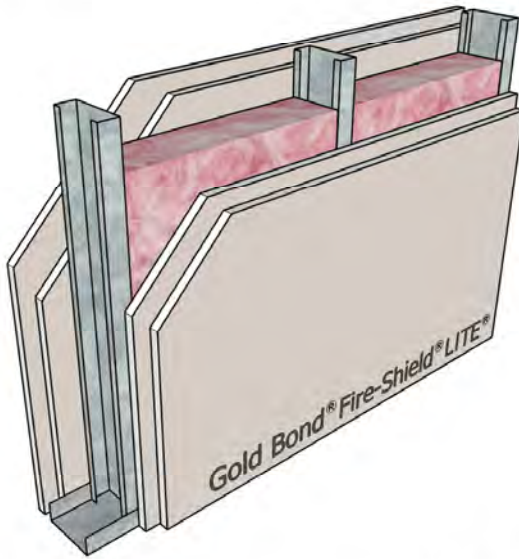
**NGC 2014021**

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

UL Design: V438, U411 - 2 hour

## Steel Stud Partitions with Framing 16" o.c.

Figure 38



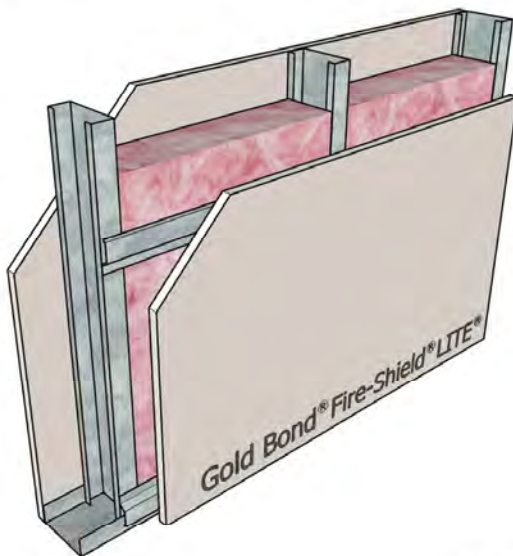
**STC-52**

**NGC 2014025**

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

UL Design: V438, U411 - 2 hour

Figure 40



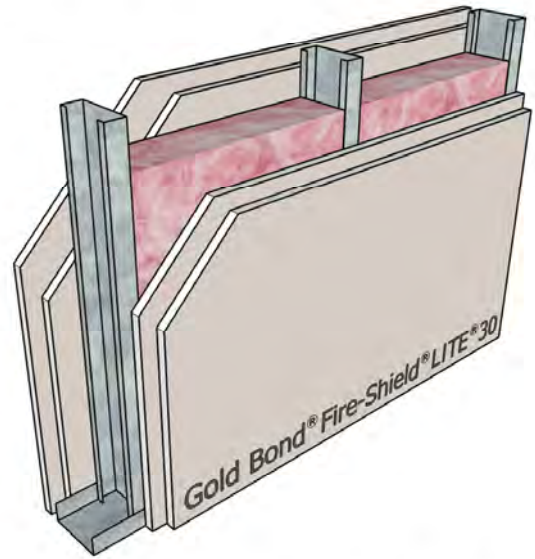
**STC-49**

**NGC 2014020**

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

UL Design: V438, U465 - 1 hour

Figure 39



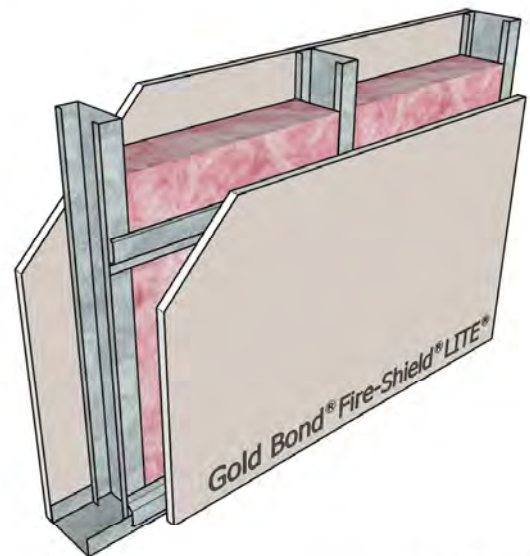
**STC-44**

**NGC 2014013**

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

UL Design: W411 - 1 hour

Figure 41



**STC-49**

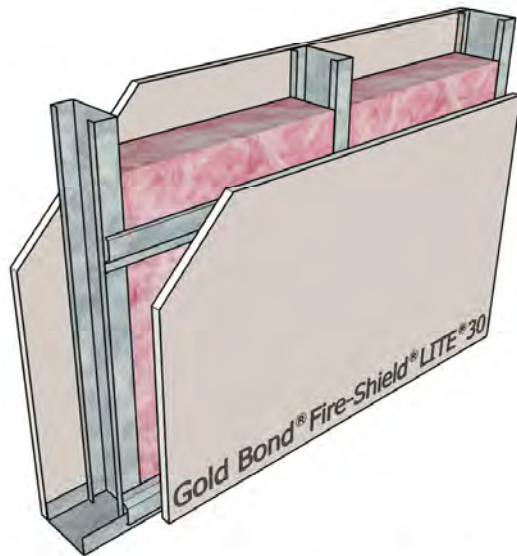
**NGC 2014024**

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

UL Design: V438, U465 - 1 hour

## Steel Stud Partitions with Framing 16" o.c.

Figure 42



### STC-45

### NGC 2014012

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

UL Design: W411 - 1/2 hour





Steel Stud Partitions  
with Framing 24"o.c.



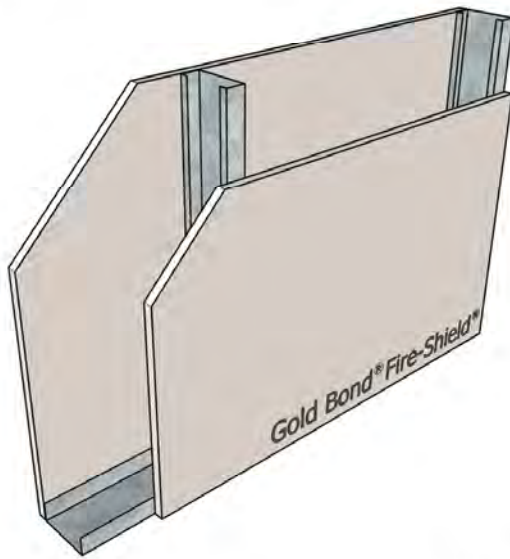
The SoundBook™





## Steel Stud Partitions with Framing 24" o.c.

Figure 43



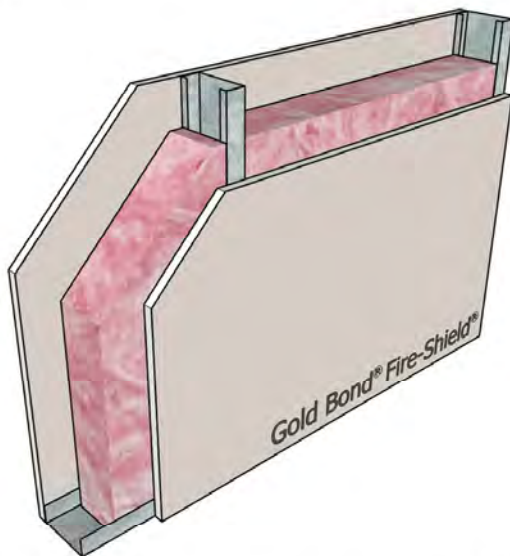
### STC-42

NGC 2385

Framing: 3-5/8" steel studs, 25 gauge, 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 45



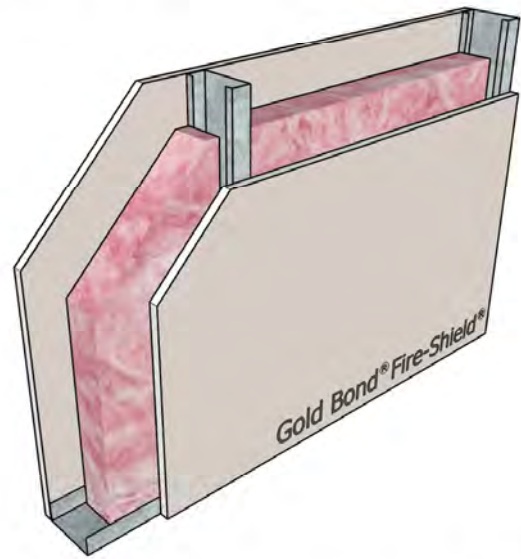
### STC-44

NGC 2013015

Framing: 3-5/8" steel studs, **20 gauge**, 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 44



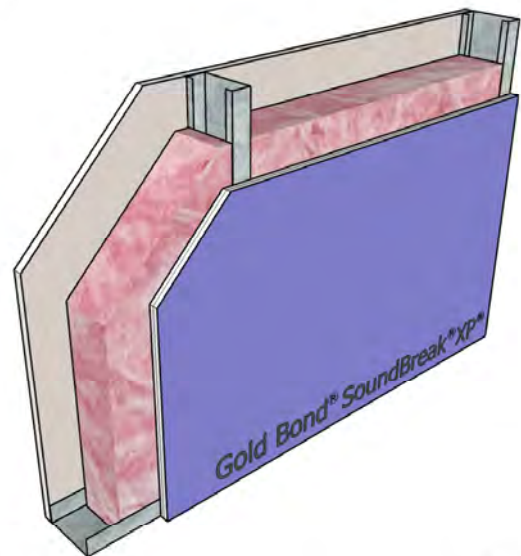
### STC-47

NGC 2386

Framing: 3-5/8" steel studs, 25 gauge, 24" 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 46



### STC-55

OL14-0404

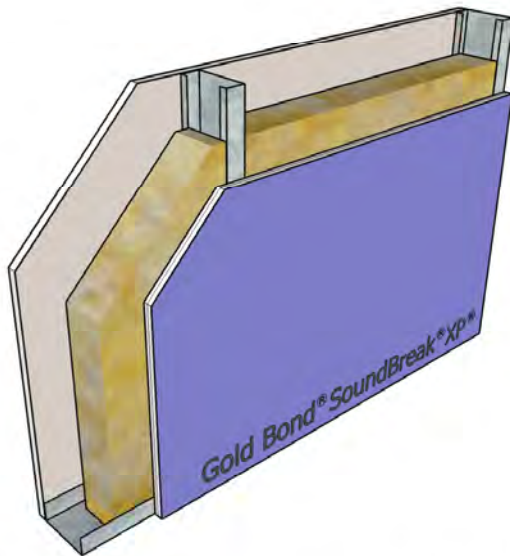
Framing: 3-5/8" steel studs, **20 gauge**, 24" o.c.  
 Insulation: 3-1/2" glass fiber  
 Side 1: 5/8" Fire-Shield Gypsum Board  
 Side 2: 5/8" SoundBreak XP Gypsum Board

UL Design: V438, U465 - 1 hour



## Steel Stud Partitions with Framing 24" o.c.

Figure 47



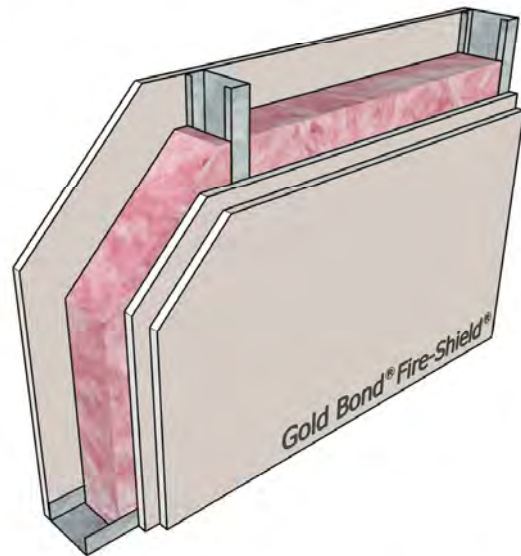
**STC-54**

**RAL-TL07-389**

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

UL Design: V438, U465 - 1 hour

Figure 48



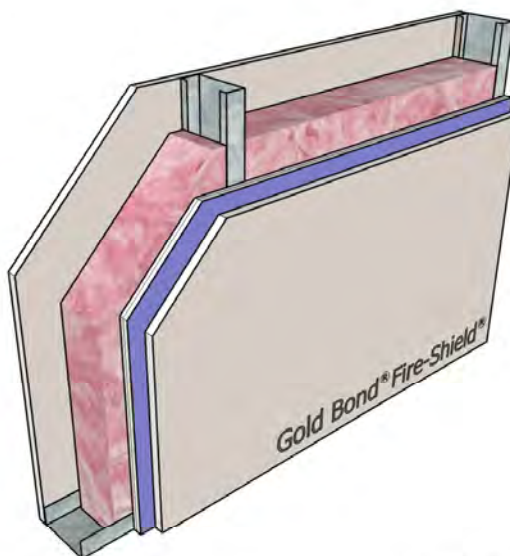
**STC-49**

**NGC 2392**

Framing: 3-5/8" steel studs, 25 gauge, 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 49



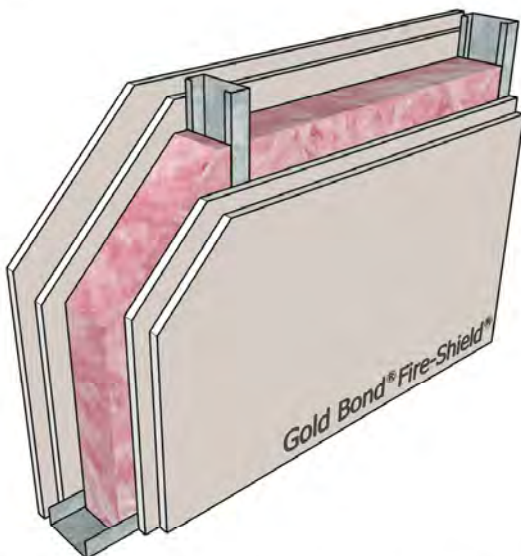
**STC-57**

**RAL-TL06-334**

Framing: 3-5/8" steel studs, 25 gauge, 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 Gypsum Board

UL Design: V438, U465 - 1 hour

Figure 50



**STC-56**

**NGC 3022**

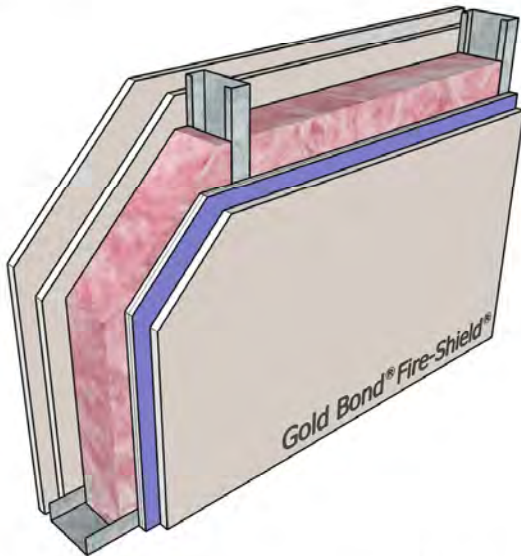
Framing: 3-5/8" steel studs, 25 gauge, 24" o.c.  
 Insulation: 3" glass fiber  
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board  
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: V438, U411 - 2 hour



## Steel Stud Partitions with Framing 24" o.c.

Figure 51

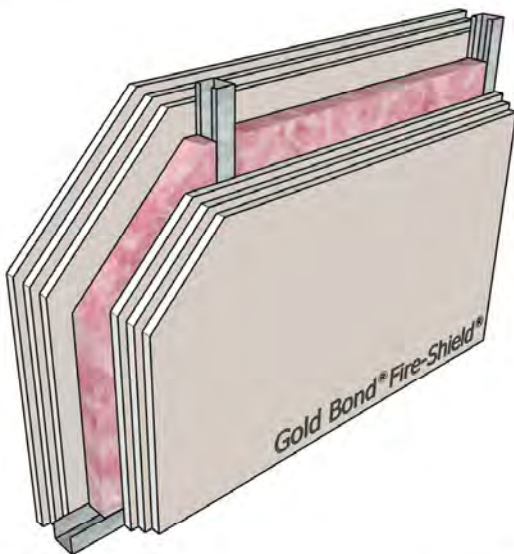


**STC-60**

**RAL-TL07-168**

Framing: 3-5/8" steel studs, 25 gauge, 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 Gypsum Board  
 UL Design: V438, U411 - 2 hour

Figure 53



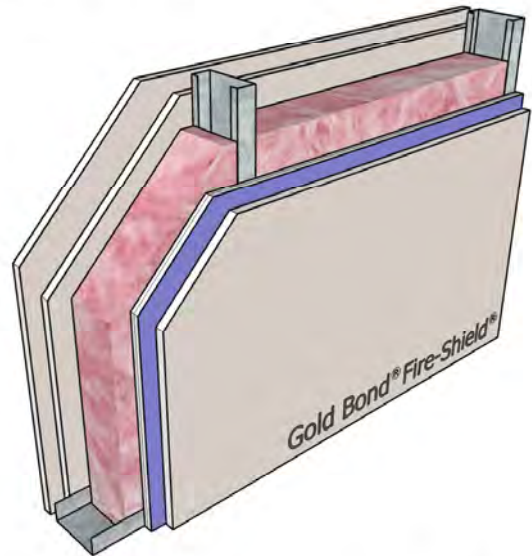
**STC-53**

**NGC 2636**

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

UL Design: U435, V438 - 3 hour

Figure 52

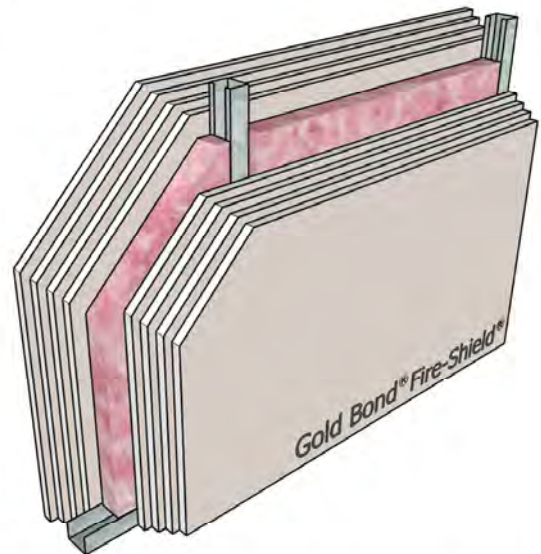


**STC-56**

**NGC 2013018**

Framing: 3-5/8" steel studs, **20 gauge**, 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 Gypsum Board  
 UL Design: V438, U411 - 2 hour

Figure 54



**STC-55**

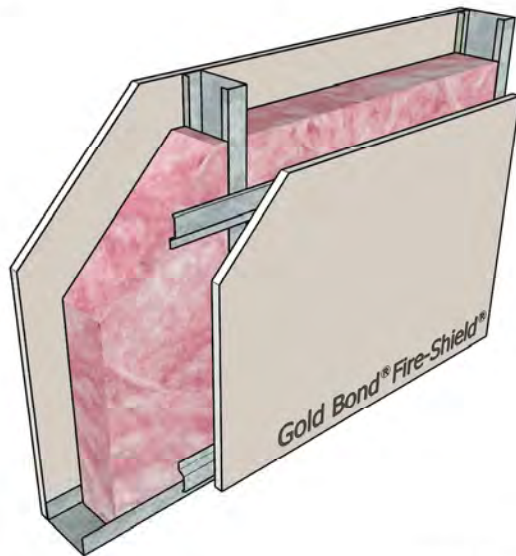
**NGC 2634**

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

UL Design: U435, V438 - 4 hour

## Steel Stud Partitions with Framing 24" o.c.

Figure 55



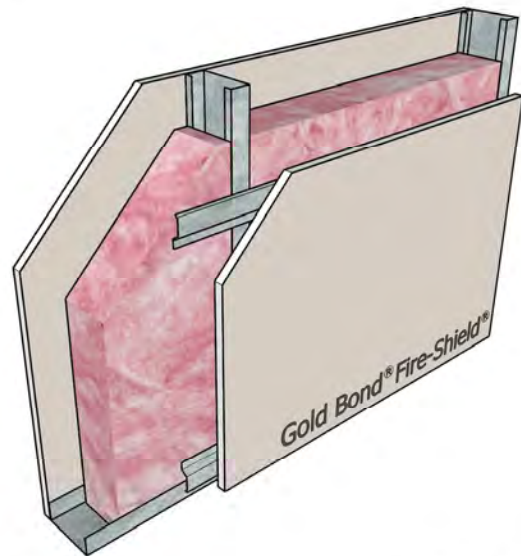
**STC-49**

**NGC 2007008**

Framing: 3-5/8" steel studs, 25 gauge, 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 56



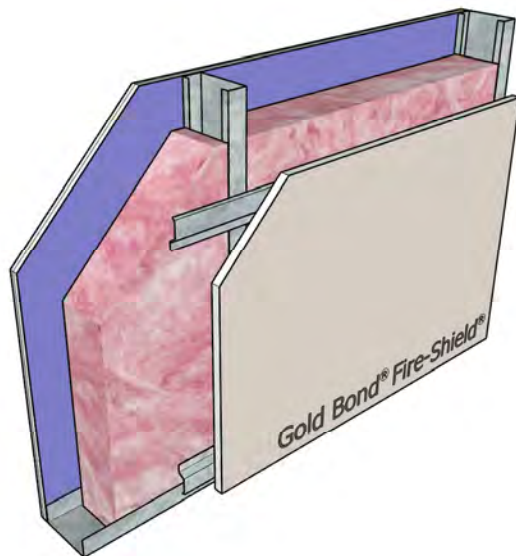
**STC-50**

**NGC 2013019**

Framing: 3-5/8" steel studs, **20 gauge**, 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 57



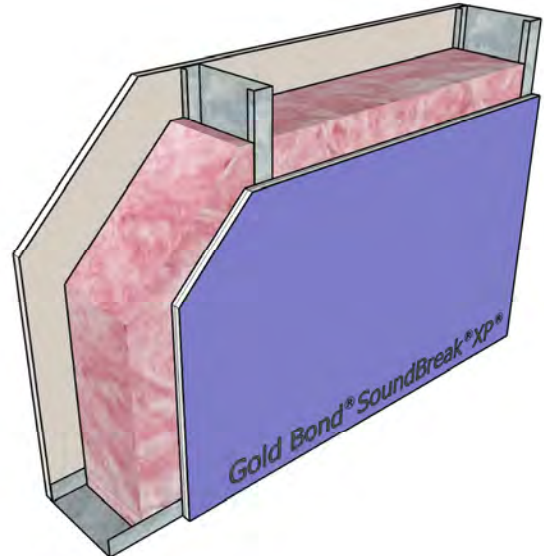
**STC-54**

**NGC 2013020**

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

UL Design: V438, U465 - 1 hour

Figure 58



**STC-56**

**NGC 2013028**

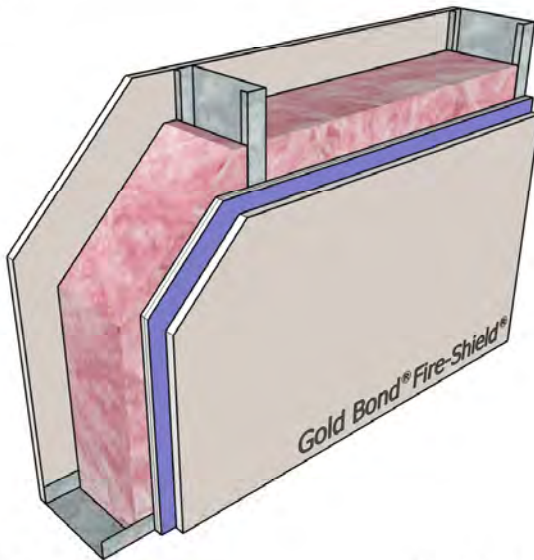
Framing: 6" steel studs, **20 gauge**, 24" o.c.  
 Insulation: 6" glass fiber  
 Side 1: 5/8" Fire-Shield Gypsum Board  
 Side 2: 3/4" SoundBreak XP Gypsum Board

UL Design: V438, U465 - 1 hour



## Steel Stud Partitions with Framing 24" o.c.

Figure 59

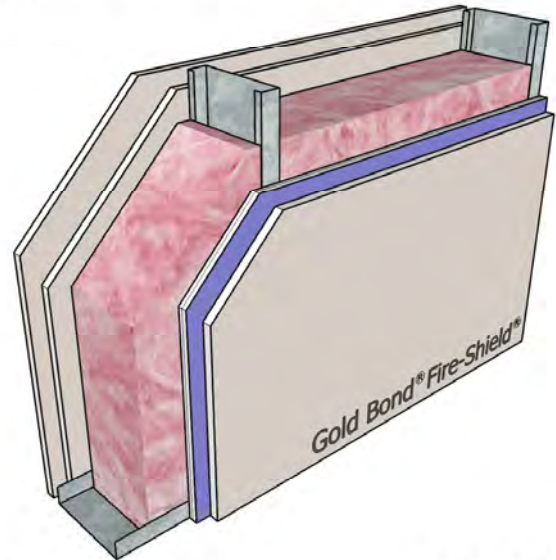


**STC-57**

**NRCC B-3456.1**

Framing: 6" steel studs, 25 gauge, 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 Gypsum Board  
 UL Design: V438, U465 - 1 hour

Figure 60

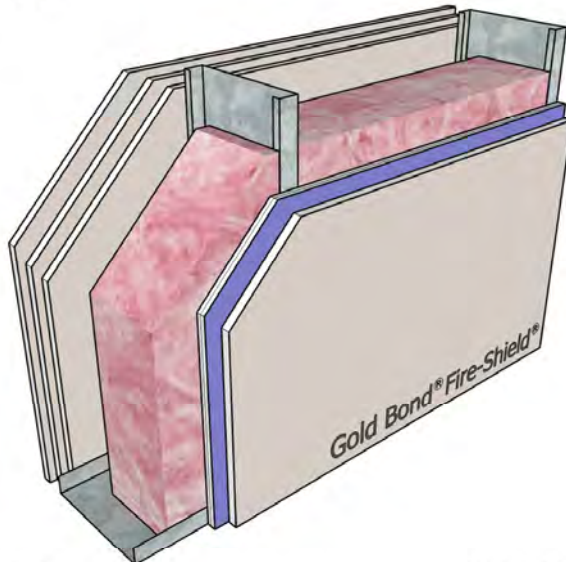


**STC-61**

**NRCC B-3456.2**

Framing: 6" steel studs, 25 gauge, 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 Gypsum Board  
 UL Design: V438, U411 - 2 hour

Figure 61



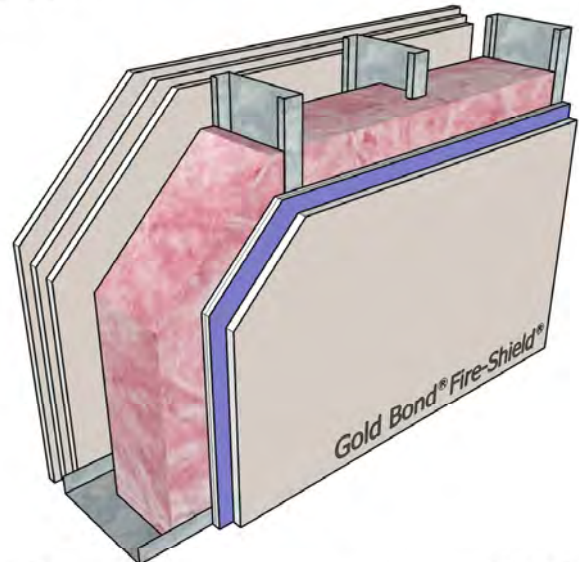
**STC-57**

**NGC 2009035**

Framing: 8" steel studs, **18 gauge**, 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 Gypsum Board

UL Design: U411 - 2 hour

Figure 62



**STC-66**

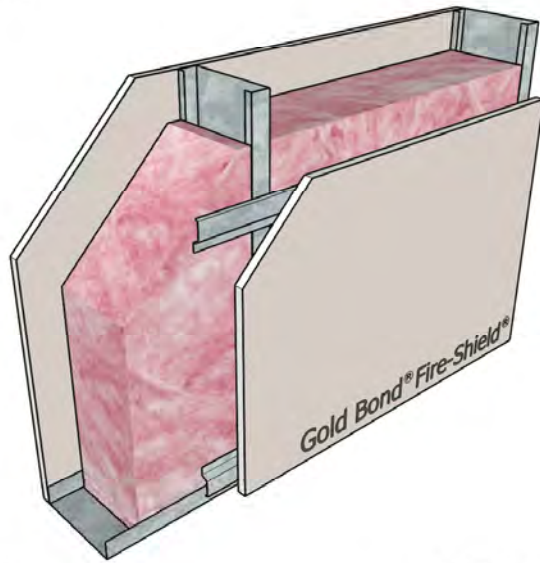
**NGC 2009036**

Framing: 6" steel studs, **18 gauge**, 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 Gypsum Board  
 UL Design: U411 - 2 hour



## Steel Stud Partitions with Framing 24" o.c.

Figure 63



**STC-52**

**NGC 2002039**

Framing: 6" steel studs, 25 gauge, 24" o.c.

Insulation: 6" glass fiber

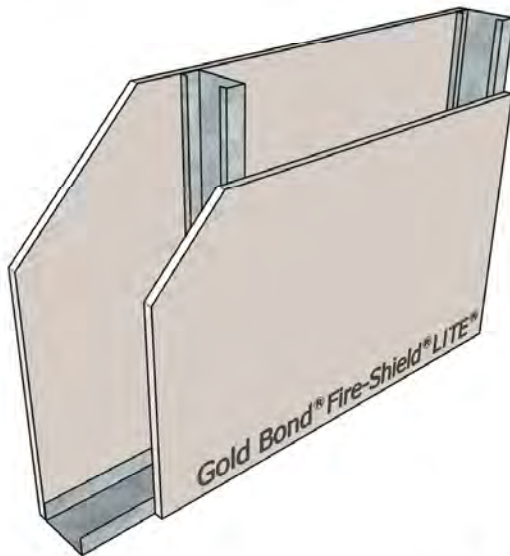
Side 1: 5/8" Fire-Shield C Gypsum Board

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

UL Design: V438, U465 - 1 hour

## Steel Stud Partitions with Framing 24" o.c.

Figure 64



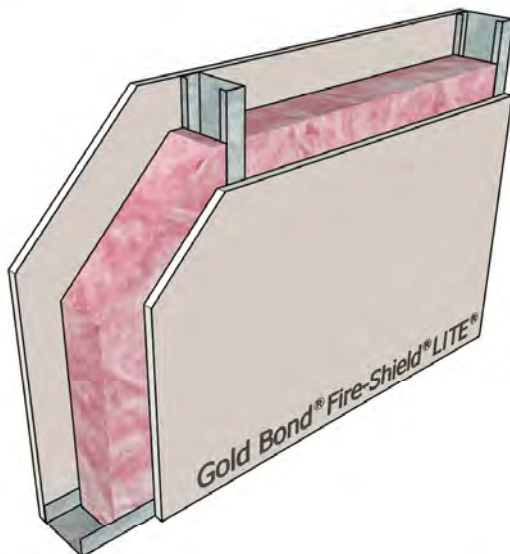
### STC-38

NGC 2014015

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

UL Design: V438, U465 - 1 hour

Figure 66



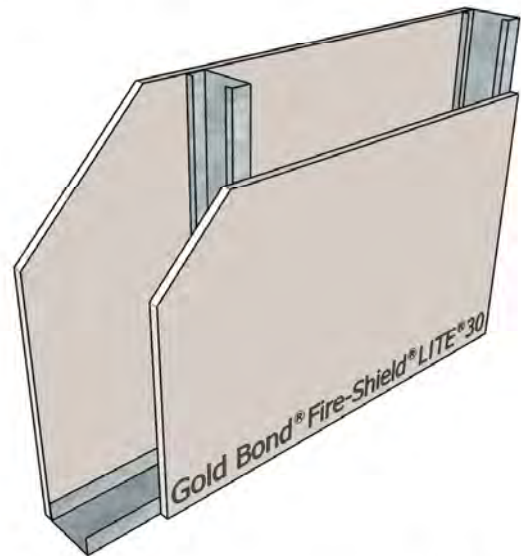
### STC-44

NGC 2014014

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

UL Design: V438, U465 - 1 hour

Figure 65



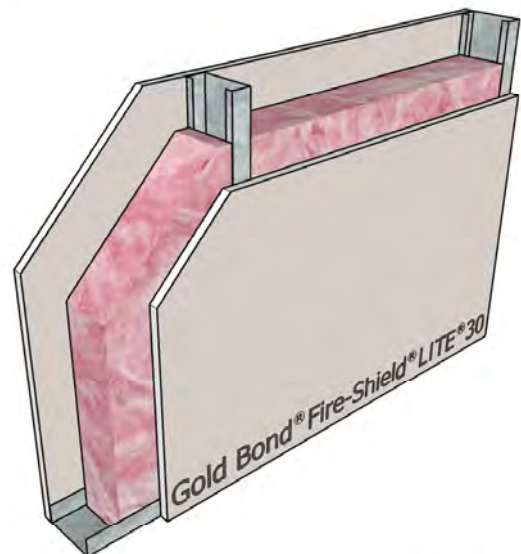
### STC-36

NGC 2014006

Framing: 3-5/8" steel studs, 25 gauge, 24" o.c.  
 Insulation: None  
 Side 1: 5/8" Fire-Shield LITE 30 Gypsum Board  
 Side 2: 5/8" Fire-Shield LITE 30 Gypsum Board

UL Design: W411 - 1/2 hour

Figure 67



### STC-46

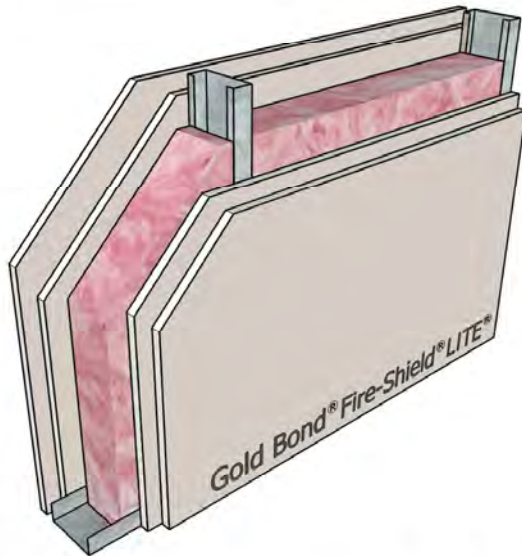
NGC 2014005

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

UL Design: W411 - 1/2 hour

## Steel Stud Partitions with Framing 24" o.c.

Figure 68



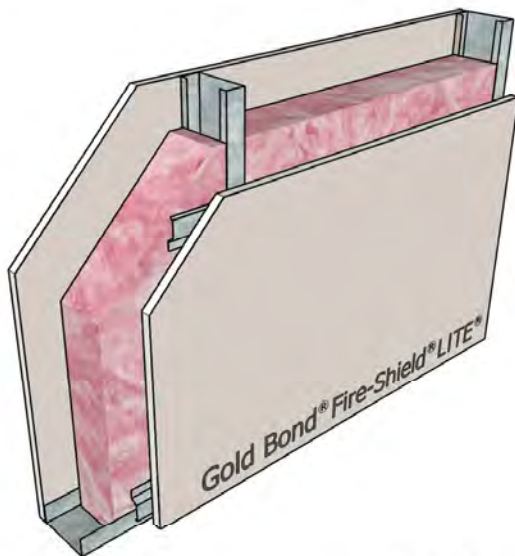
**STC-54**

**NGC 2014017**

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

UL Design: V438, U411 - 2 hour

Figure 70



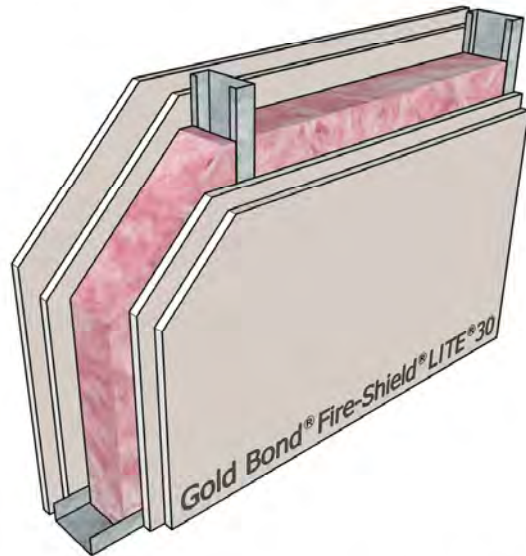
**STC-50**

**NGC 2014016**

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

UL Design: V438, U465 - 1 hour

Figure 69



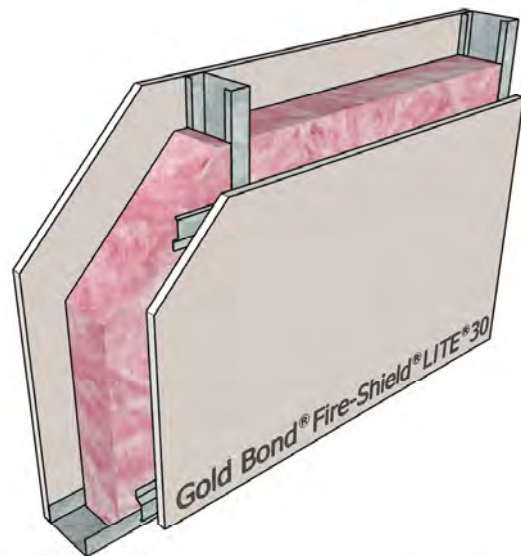
**STC-54**

**NGC 2014008**

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

UL Design: W411 - 1 hour

Figure 71



**STC-49**

**NGC 2014007**

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

UL Design: W411 - 1/2 hour



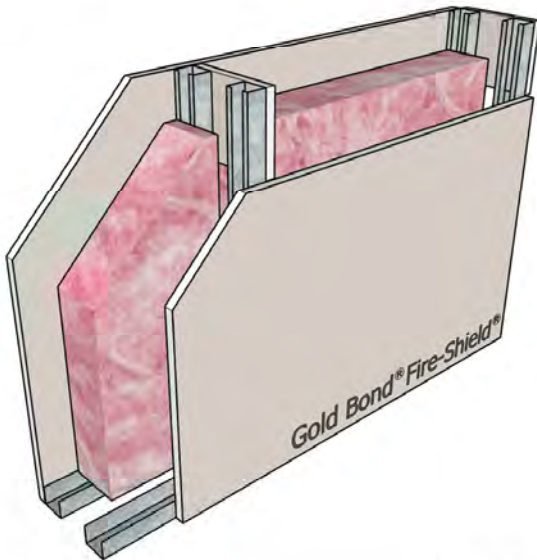






## Steel Stud Chase Walls

Figure 72

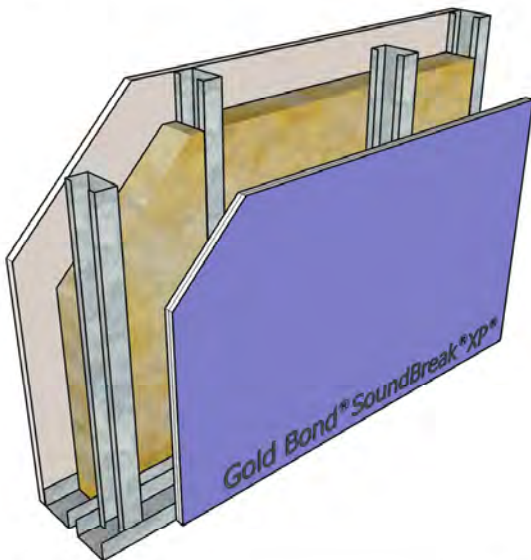


**STC-52**

**RAL-TL76-155**

Framing: Double row 1-5/8" steel studs, 25 gauge, 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

Figure 74

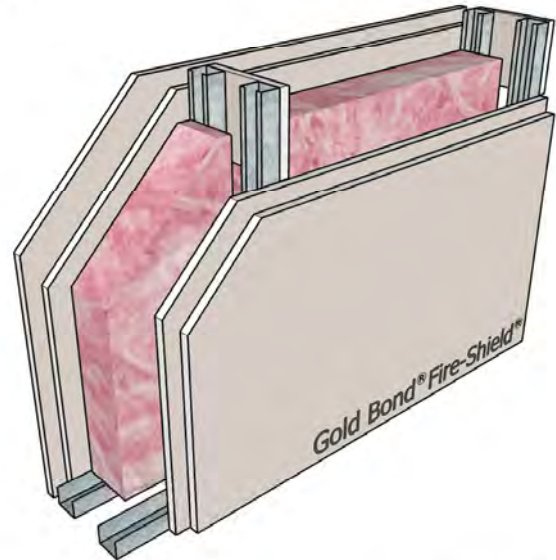


**STC-59**

**NGC 2008036**

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

Figure 73

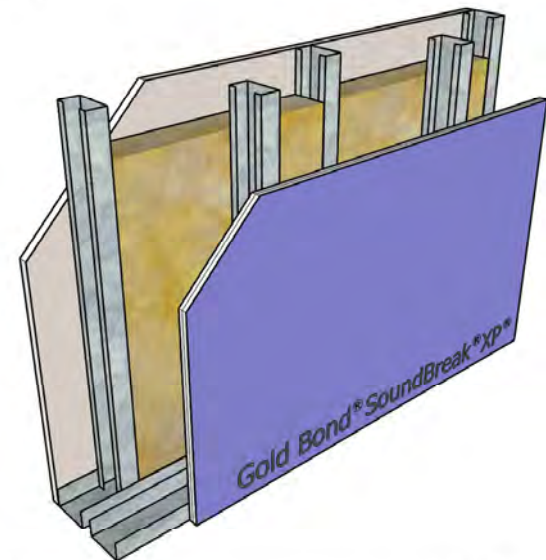


**STC-57**

**RAL-TL76-156**

Framing: Double row 1-5/8" steel studs, 25 gauge, 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

Figure 75



**STC-57**

**NGC 2008035**

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





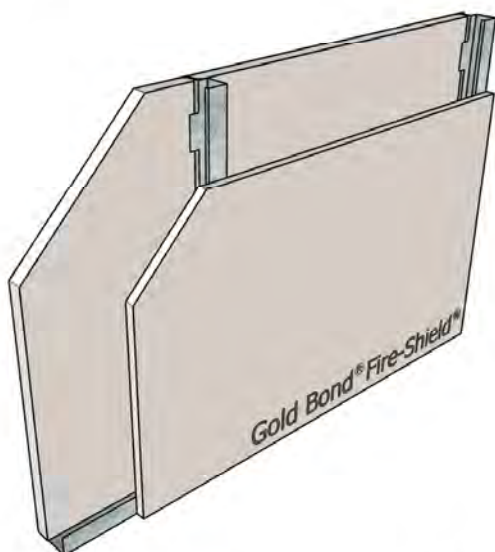






## Shaftwall Partitions

Figure 76



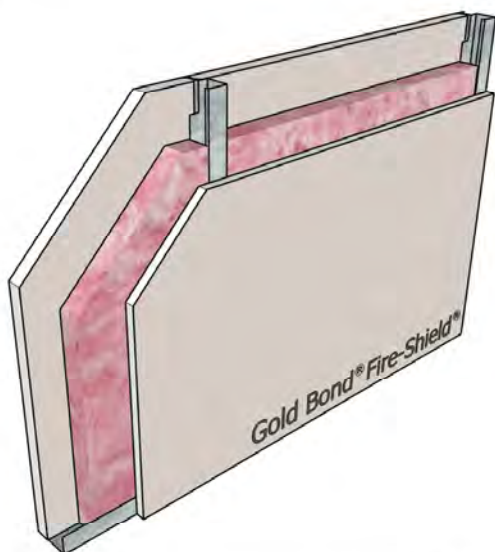
### STC-34

NGC 2001001

Framing: 2-1/2" steel CT studs, 25 gauge, 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 78



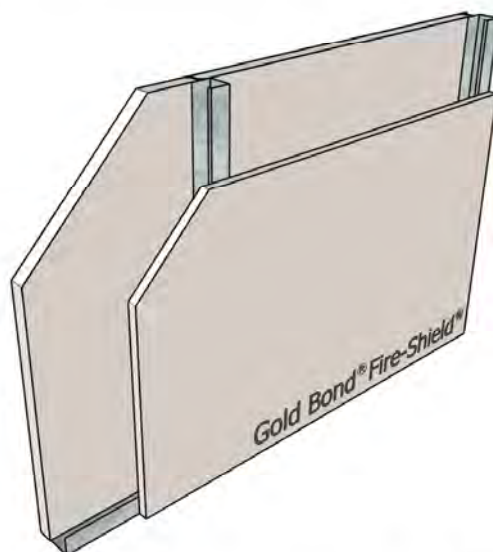
### STC-39

NGC 2001007

Framing: 2-1/2" steel CT studs, 25 gauge, 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 77



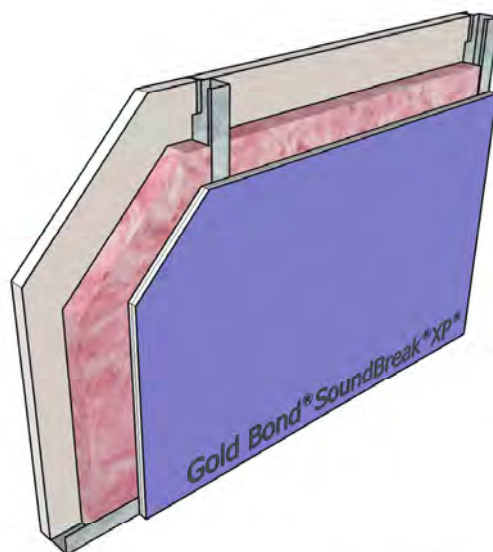
### STC-37

NGC 2001003

Framing: 2-1/2" steel CH studs, 25 gauge, 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 79



### STC-44

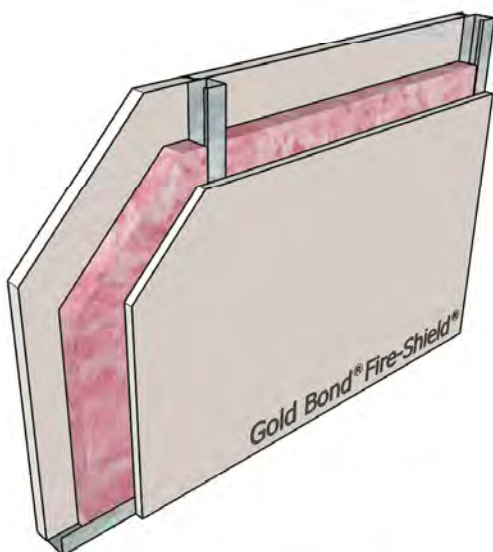
NGC 2015033

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

UL Design: U499, W419 - 1 hour

## Shaftwall Partitions

Figure 80



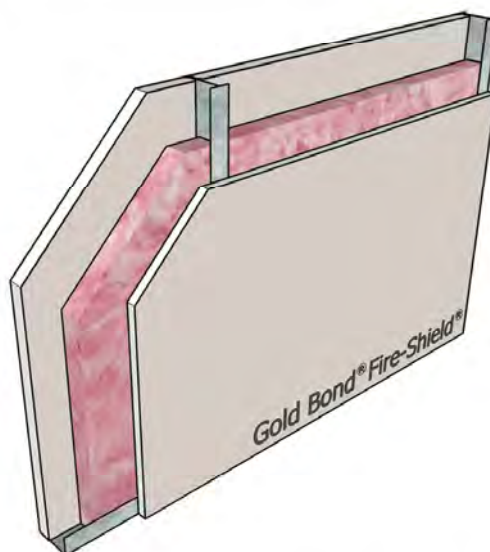
**STC-40**

**NGC 2001005**

Framing: 2-1/2" steel CH studs, 25 gauge, 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 81



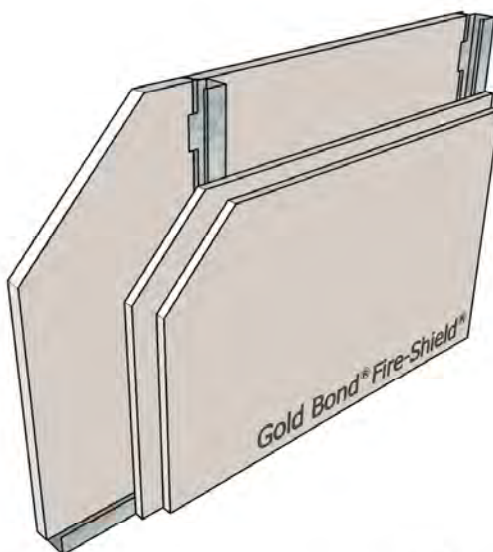
**STC-42**

**NGC 2542**

Framing: 2-1/2" steel I-studs, 25 gauge, 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 82



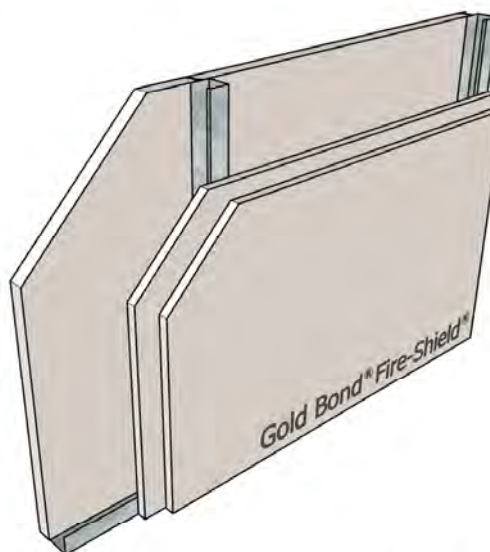
**STC-40**

**NGC 2001004**

Framing: 2-1/2" steel CT studs, 25 gauge, 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 83



**STC-39**

**NGC 2001002**

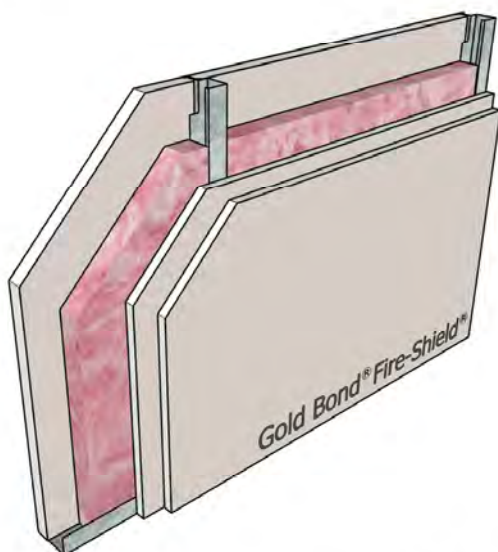
Framing: 2-1/2" steel CH studs, 25 gauge, 24" o.c.  
 Insulation: None  
 Side 1: 1" Fire-Shield Shaftliner  
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: U497, W419 - 2 hour



## Shaftwall Partitions

Figure 84



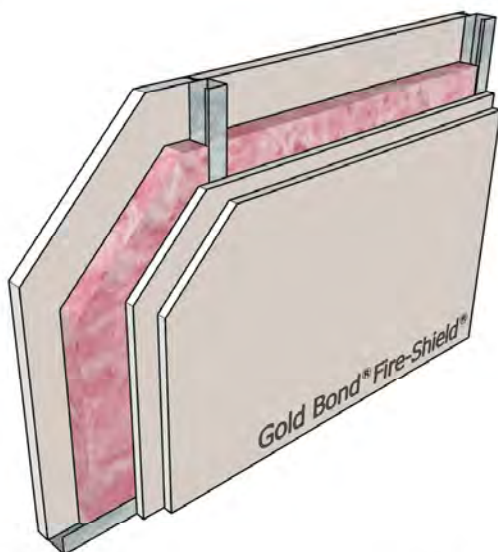
### STC-45

NGC 2001008

Framing: 2-1/2" steel CT studs, 25 gauge, 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 86



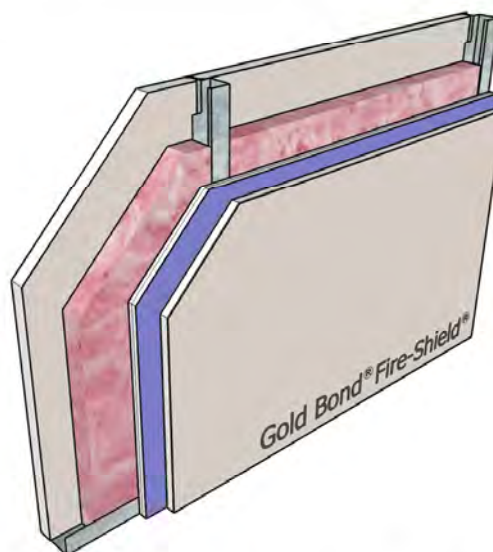
### STC-46

NGC 2001006

Framing: 2-1/2" steel CH studs, 25 gauge, 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 85

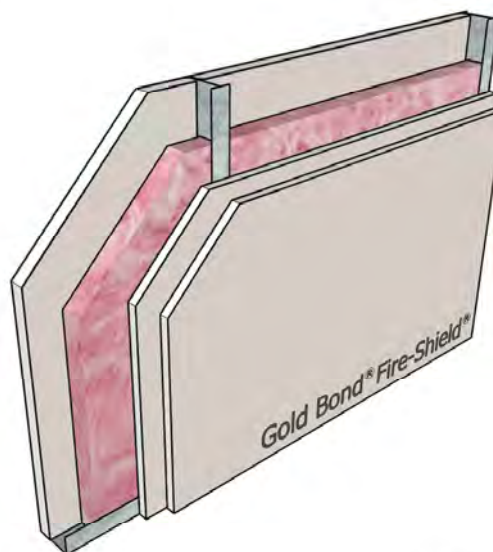


### STC-51

NGC 2015037

Framing: 2-1/2" steel CT studs, 25 gauge, 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 Gypsum Board  
 UL Design: U497, W419 - 2 hour

Figure 87



### STC-48

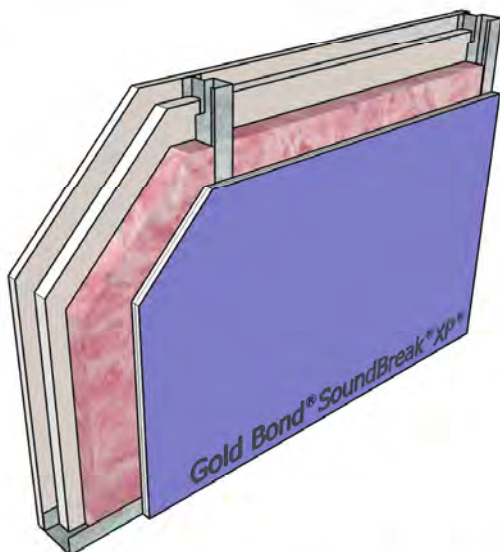
NGC 2507

Framing: 2-1/2" steel I-studs, 25 gauge, 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

## Shaftwall Partitions

Figure 88

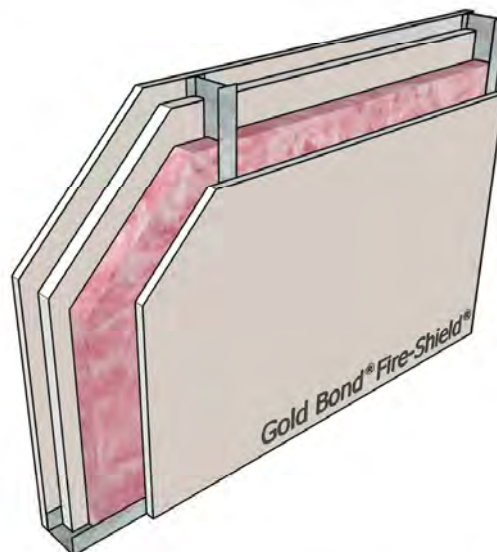


**STC-53**

**NGC 2015036**

Framing: 2-1/2" steel CT studs, 25 gauge, 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 Gypsum Board  
 UL Design: U498, W419 - 2 hour

Figure 89

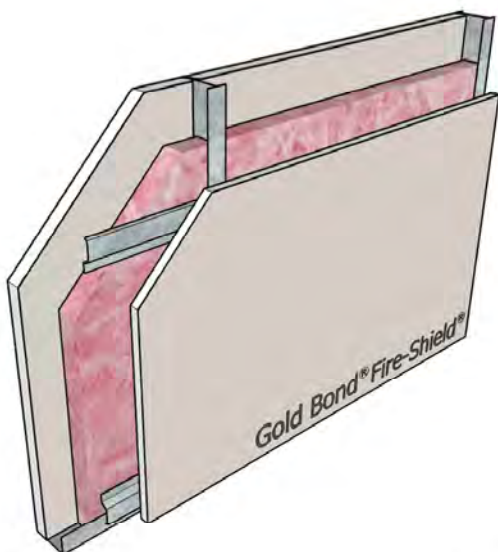


**STC-48**

**NGC 2534**

Framing: 2-1/2" steel I-studs, 25 gauge, 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 90

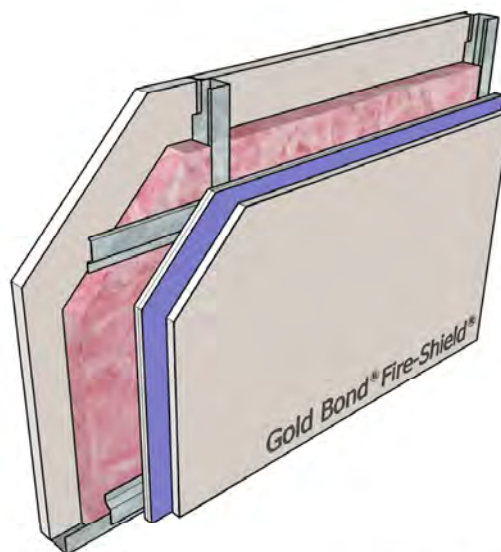


**STC-48**

**NGC 2541**

Framing: 2-1/2" steel I-studs, 25 gauge, 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 91



**STC-53**

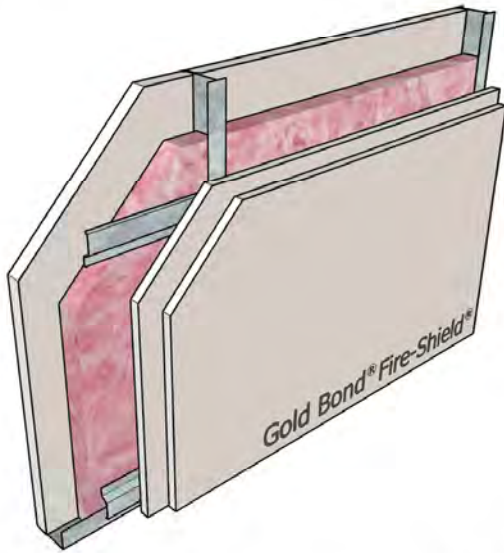
**NGC 2015039**

Framing: 2-1/2" steel CT studs, 25 gauge, 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 Gypsum Board on RC-1  
 UL Design: U497, W419 - 2 hour



## Shaftwall Partitions

Figure 92



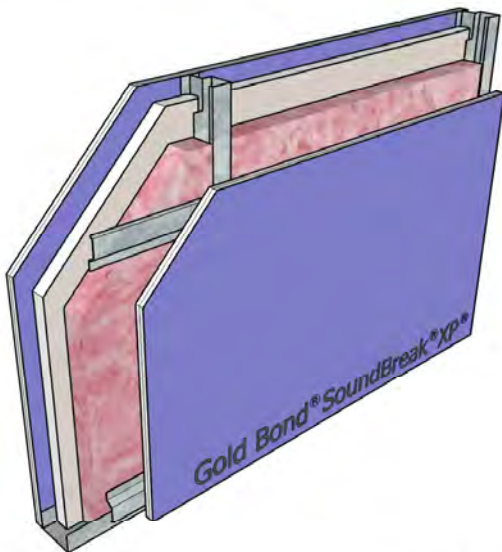
**STC-51**

**NGC 2540**

Framing: 2-1/2" steel I-studs, 25 gauge, 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 94

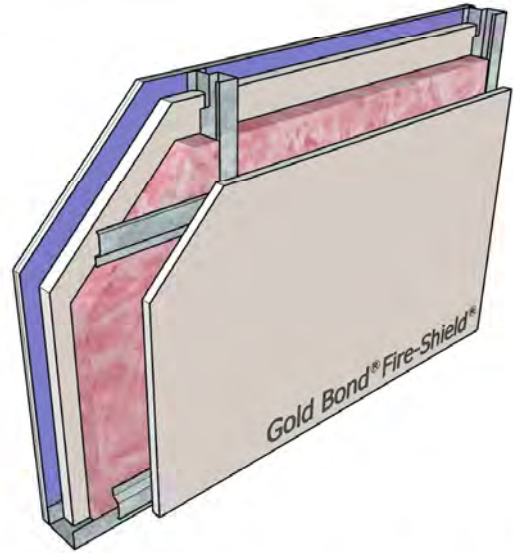


**STC-56**

**NGC 2015040**

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

Figure 93

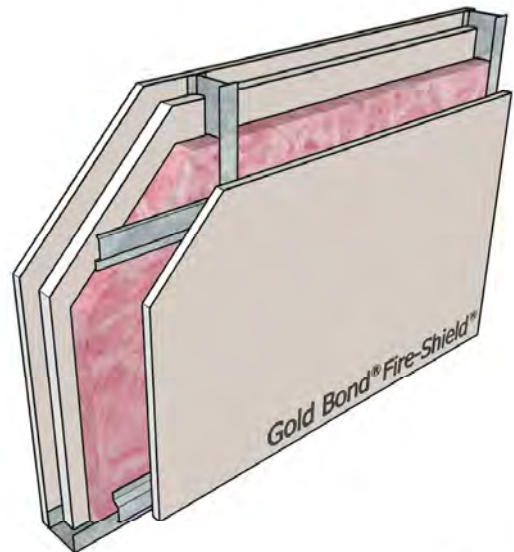


**STC-55**

**NGC 2015041**

Framing: 2-1/2" steel CT studs, 25 gauge, 24" o.c.  
 Insulation: 1-1/2" glass fiber  
 Side 1: 5/8" SoundBreak XP 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 95



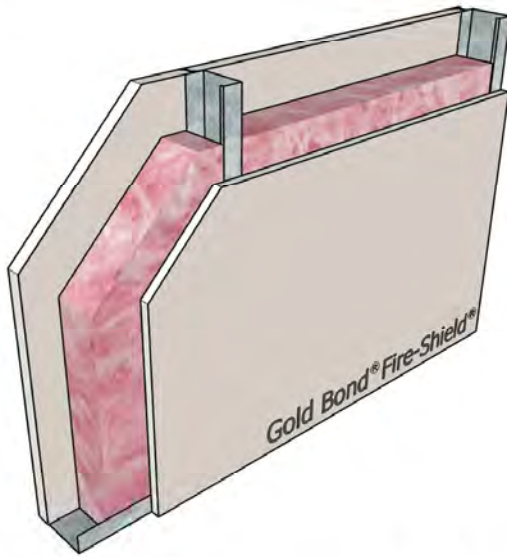
**STC-52**

**NGC 2538**

Framing: 2-1/2" steel I-studs, 25 gauge, 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

## Shaftwall Partitions

Figure 96



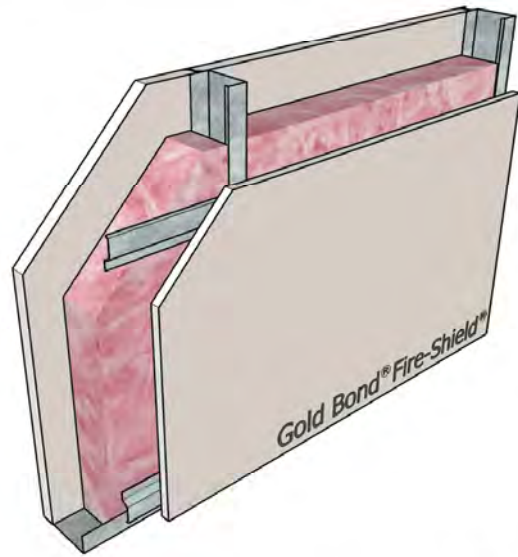
### STC-47

NGC 2015044

Framing: 4" steel CH studs, 25 gauge, 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 97



### STC-51

NGC 2015047

Framing: 4" steel CH studs, 25 gauge, 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





Wood Stud Partitions  
with Framing 16" o.c.

The SoundBook™

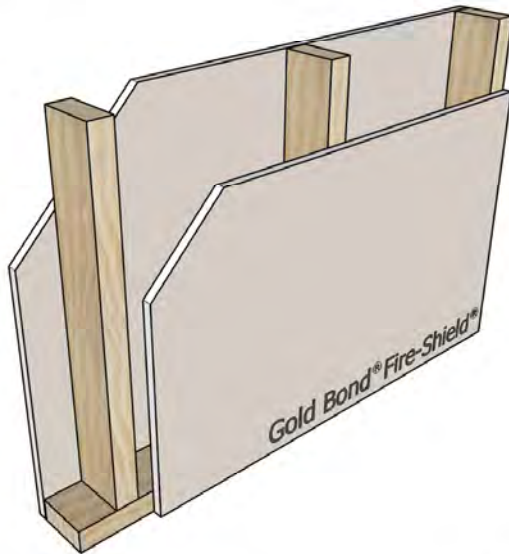






## Wood Stud Partitions with Framing 16" o.c.

Figure 98



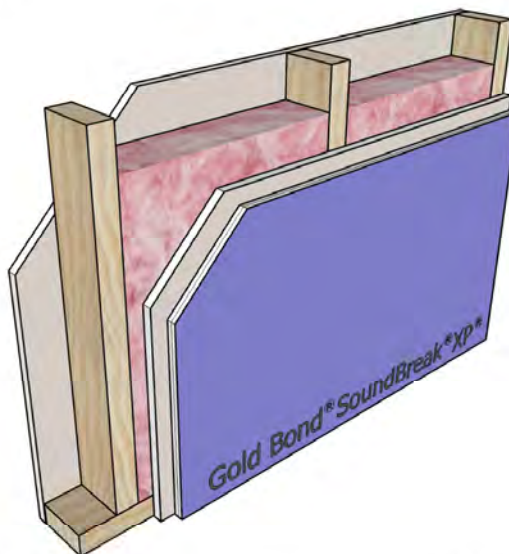
### STC-34

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

Figure 100



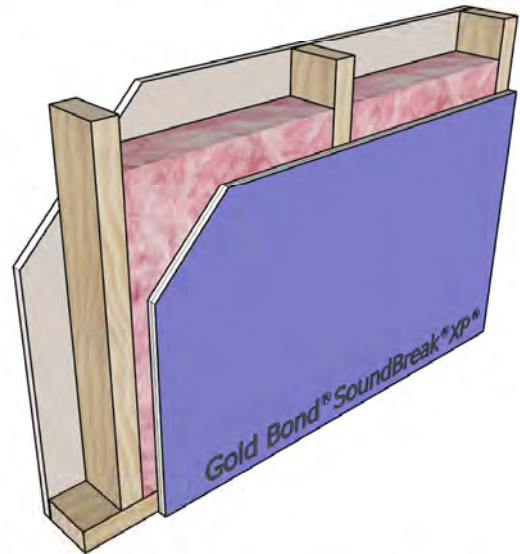
### STC-43

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 Gypsum Board on  
 1/2" Gold Bond Gypsum Board

UL Design: Not Rated

Figure 99



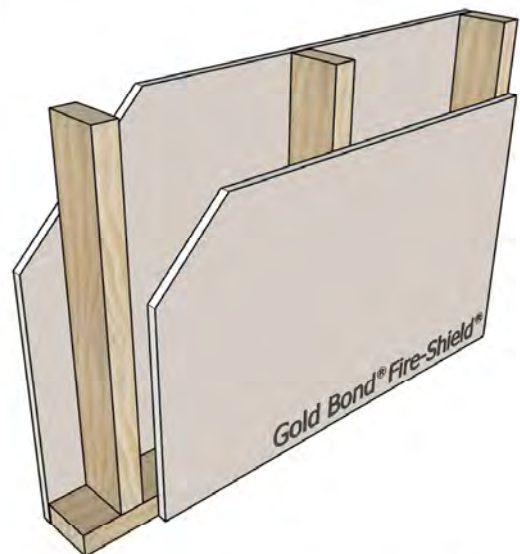
### STC-39

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 Gypsum Board

UL Design: Not Rated

Figure 101



### STC-35

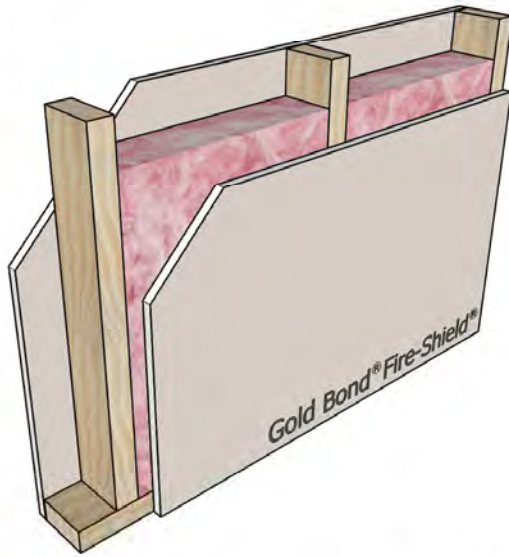
NGC 2403

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 102



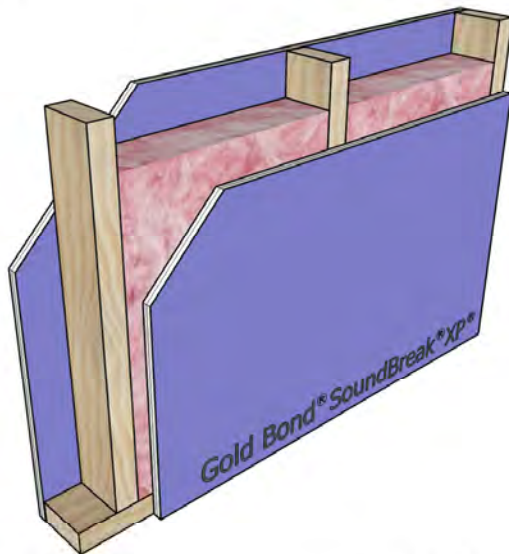
**STC-36**

**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 104



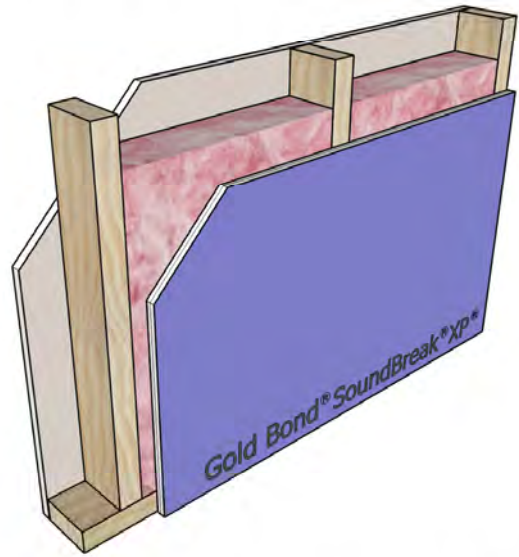
**STC-45**

**NGC 2009019**

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

UL Design: U305 - 1 hour

Figure 103



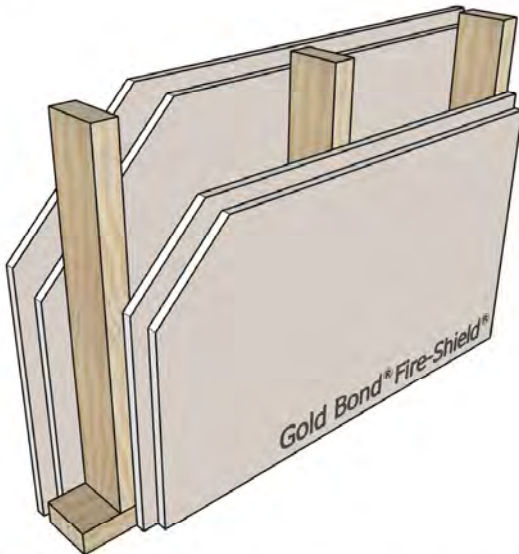
**STC-42**

**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 Gypsum Board

UL Design: U305 - 1 hour

Figure 105



**STC-40**

**NGC 2363**

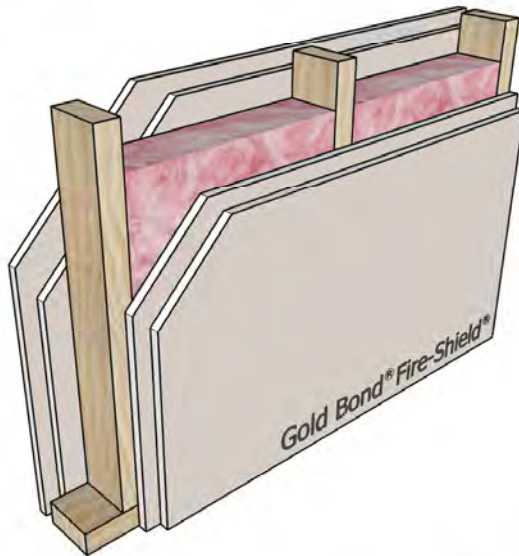
Framing: 2x4 wood studs, 16" o.c.  
 Insulation: None  
 Side 1: 2 layers 5/8" Fire-Shield Gypsum Board  
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board

UL Design: U301 - 2 hour



## Wood Stud Partitions with Framing 16" o.c.

Figure 106



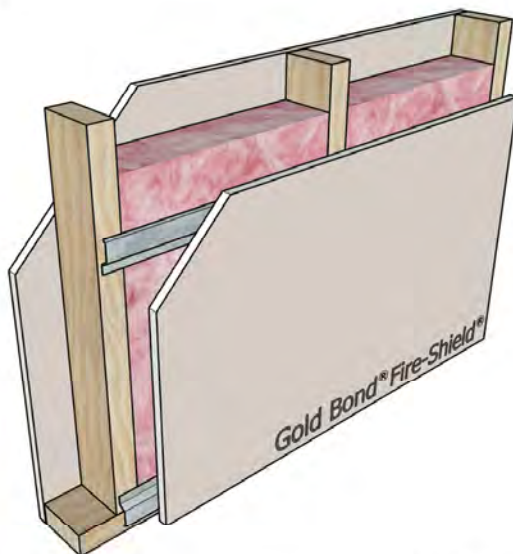
**STC-41**

**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 108



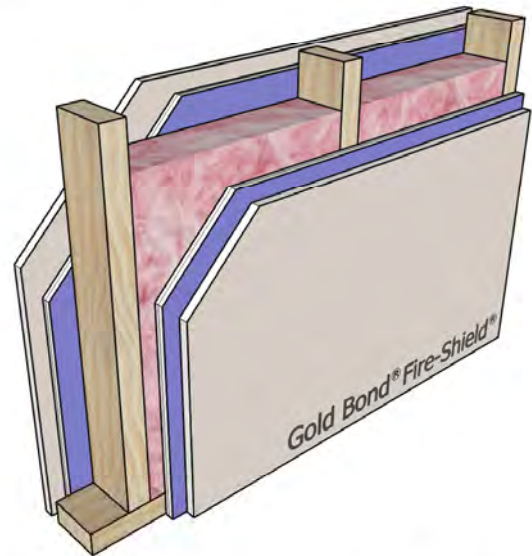
**STC-51**

**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 107



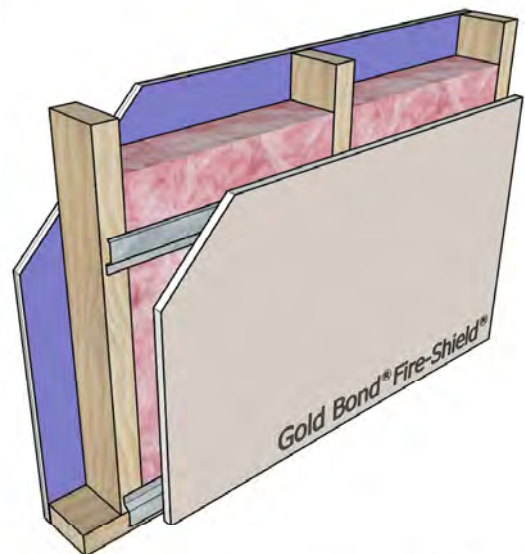
**STC-45**

**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

Figure 109



**STC-54**

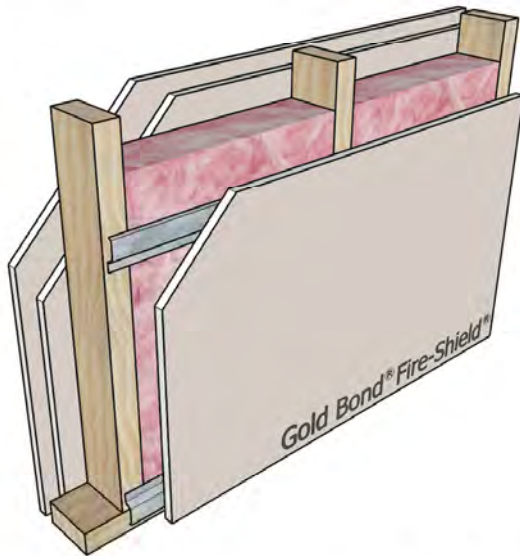
**NGC 2011066**

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

UL Design: U305 - 1 hour

## Wood Stud Partitions with Framing 16" o.c.

Figure 110



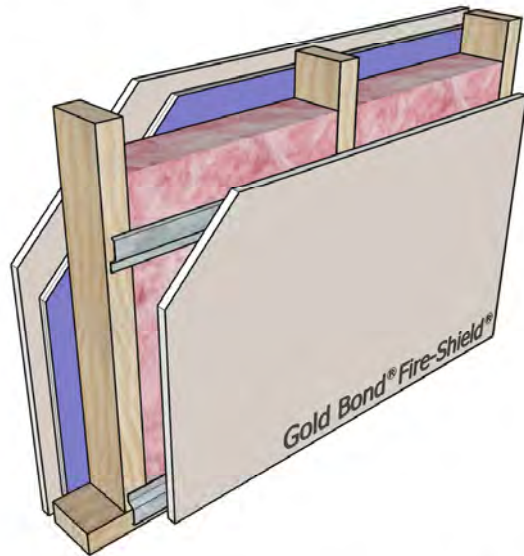
**STC-55**

**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 111

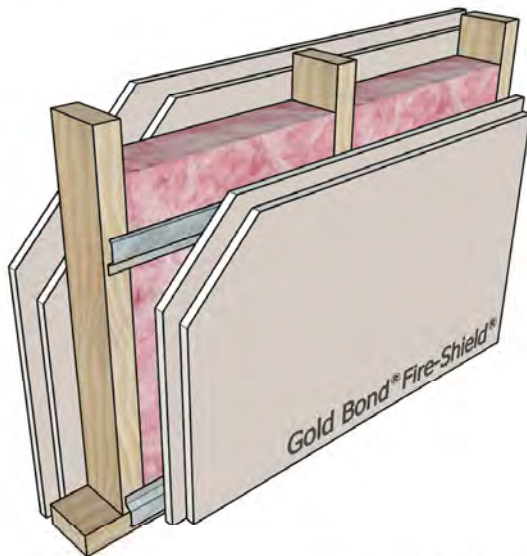


**STC-58**

**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 Gypsum Board  
 Side 2: 5/8" Fire-Shield Gypsum Board on RC-1  
 UL Design: U305 - 1 hour

Figure 112



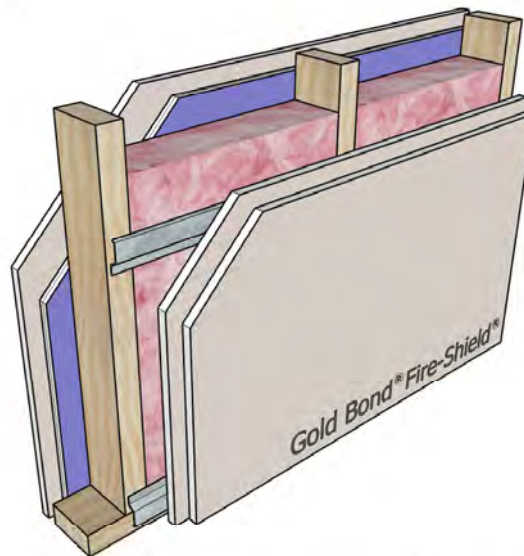
**STC-58**

**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 113



**STC-61**

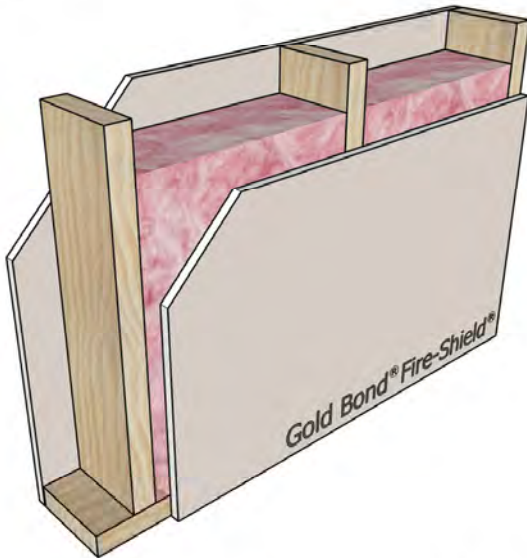
**NGC 2011068**

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 Gypsum Board  
 Side 2: 2 layers 5/8" Fire-Shield Gypsum Board on RC-1  
 UL Design: U301 - 2 hours



## Wood Stud Partitions with Framing 16" o.c.

Figure 114



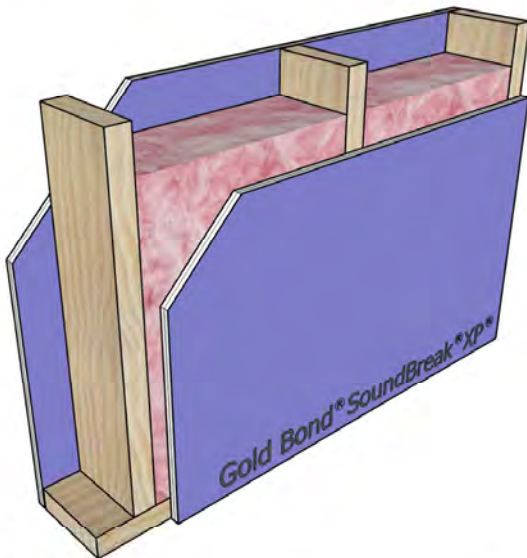
**STC-38**

**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

Figure 116



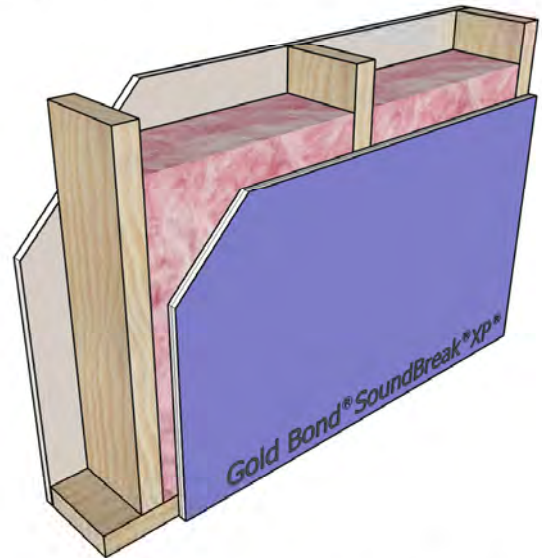
**STC-44**

**NGC 2009012**

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

UL Design: U305 - 1 hour

Figure 115



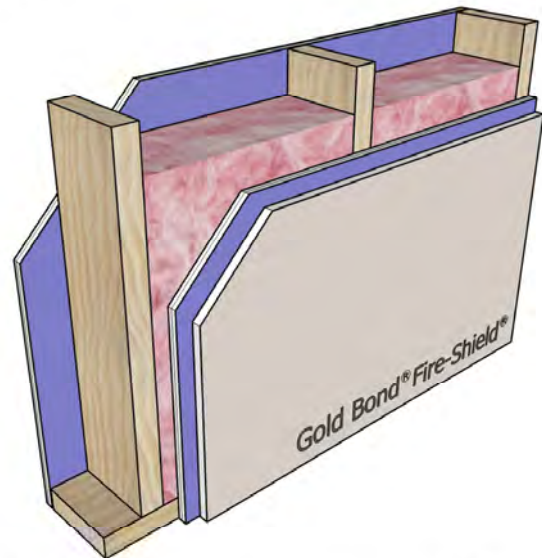
**STC-42**

**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 Gypsum Board

UL Design: U305 - 1 hour

Figure 117



**STC-46**

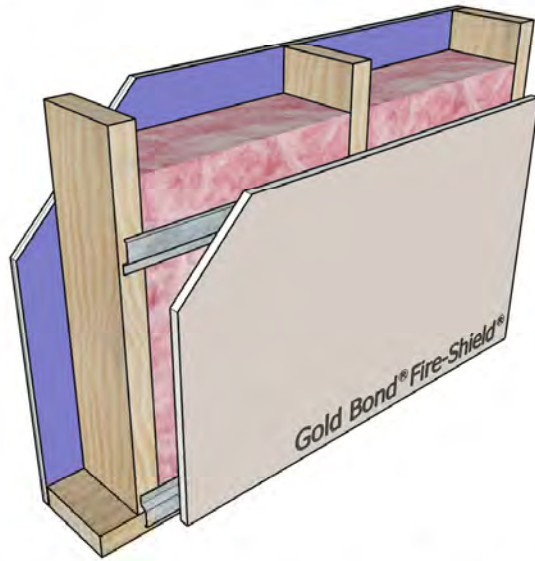
**NGC 2009010**

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

UL Design: U305 - 1 hour

## Wood Stud Partitions with Framing 16" o.c.

Figure 118



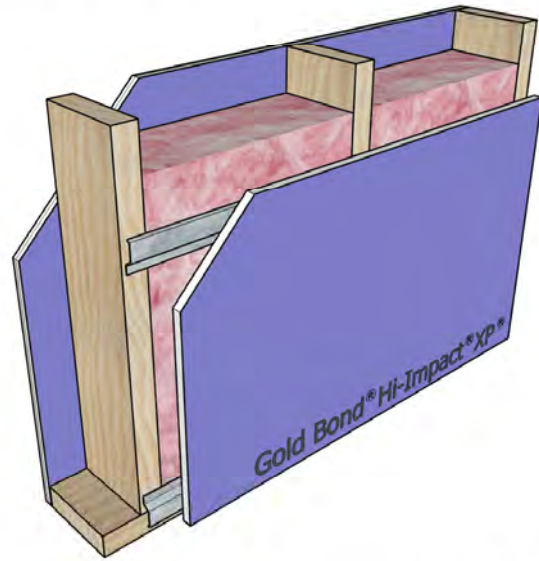
### STC-57

NGC 2010081

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

UL Design: U305 - 1 hour

Figure 119



### STC-58

NGC 2010080

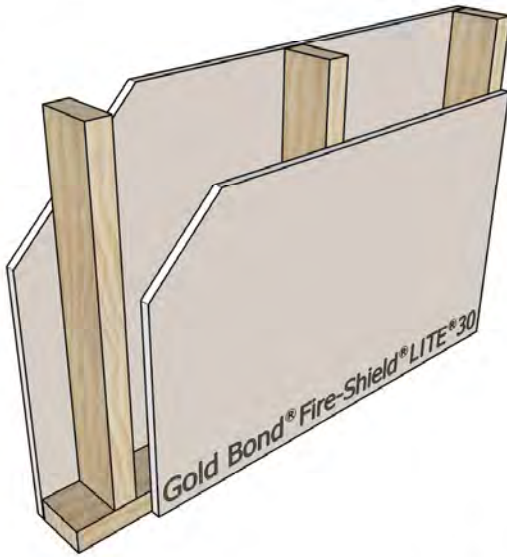
Framing: 2x6 wood studs, 16" o.c.  
 Insulation: 5-1/2" glass fiber  
 Side 1: 5/8" SoundBreak XP Gypsum Board  
 Side 2: 5/8" Hi-Impact XP Gypsum Board on RC-1

UL Design: U305 - 1 hour



## Wood Stud Partitions with Framing 16" o.c.

Figure 120



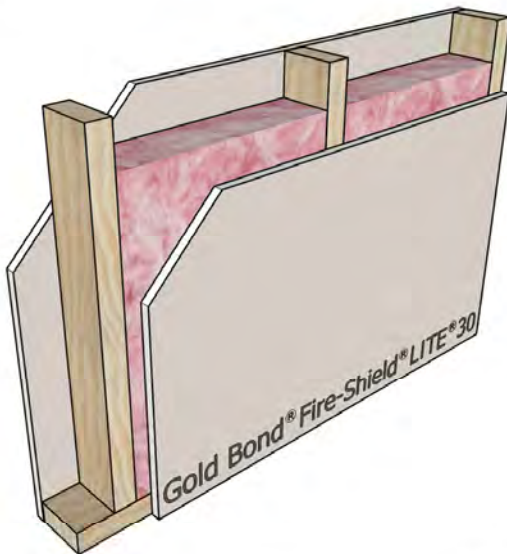
### STC-33

NGC 2014046

Framing: 2x4 wood studs, 16" o.c.  
 Insulation: None  
 Side 1: 5/8" Fire-Shield LITE 30 Gypsum Board  
 Side 2: 5/8" Fire-Shield LITE 30 Gypsum Board

UL Design: W411 - 1/2 hour

Figure 122



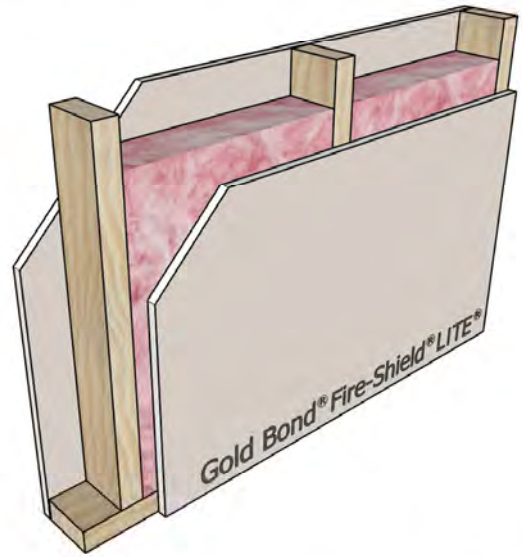
### STC-34

NGC 2014045

Framing: 2x4 wood studs, 16" o.c.  
 Insulation: 3-1/2" glass fiber  
 Side 1: 5/8" Fire-Shield LITE 30 Gypsum Board  
 Side 2: 5/8" Fire-Shield LITE 30 Gypsum Board

UL Design: W411 - 1/2 hour

Figure 121



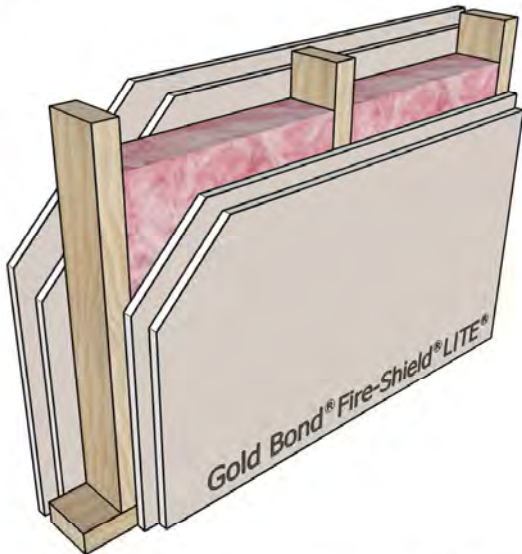
### STC-35

NGC 2014041

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

UL Design: U305 - 1 hour

Figure 123



### STC-38

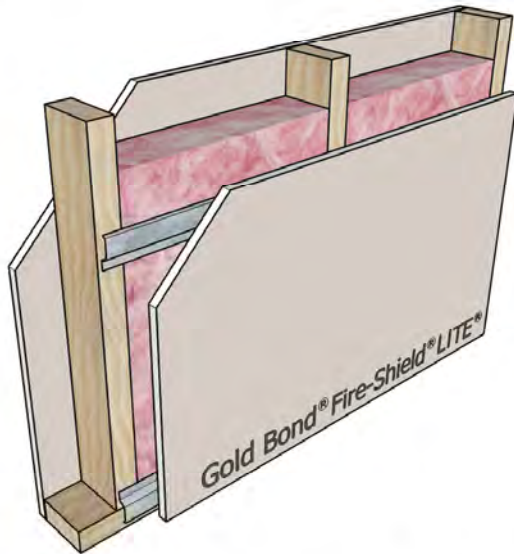
NGC 2014042

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

UL Design: U301 - 2 hour

## Wood Stud Partitions with Framing 16" o.c.

Figure 124



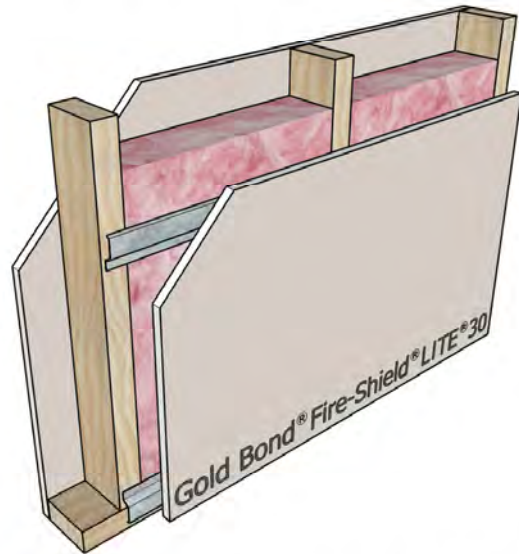
### STC-48

NGC 2014043

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

UL Design: U305 - 1 hour

Figure 125



### STC-45

NGC 2014044

Framing: 2x4 wood studs, 16" o.c.  
Insulation: 3 1/2" glass fiber  
Side 1: 5/8" Fire-Shield LITE 30 Gypsum Board  
Side 2: 5/8" Fire-Shield LITE 30 Gypsum Board on RC-1

UL Design: W411 - 1/2 hour





Wood Stud Partitions  
with Framing 24" o.c.

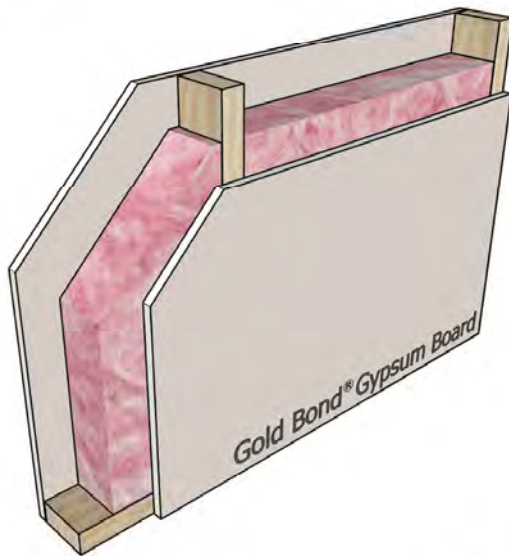






## Wood Stud Partitions with Framing 24" o.c.

Figure 126



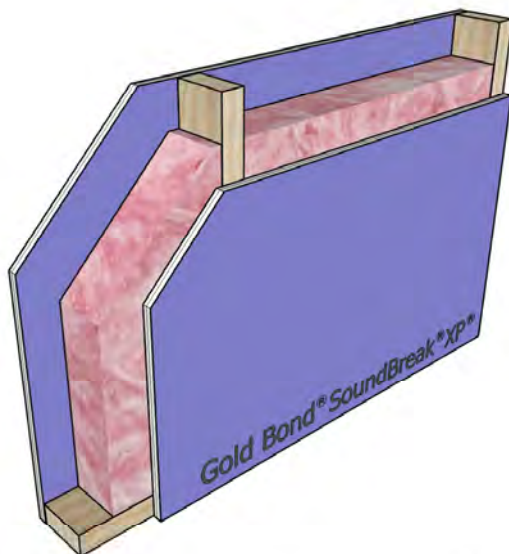
**STC-42**

**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 128



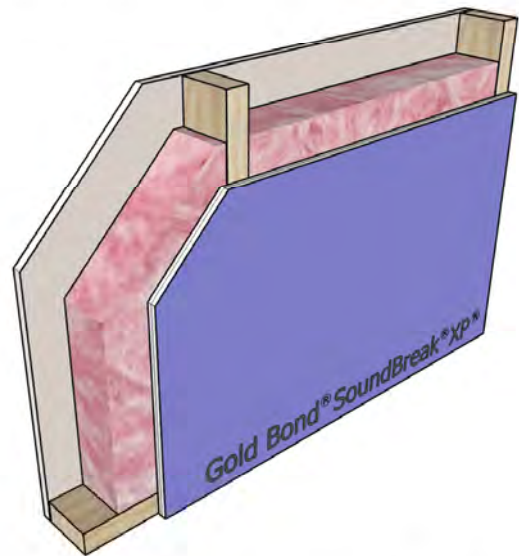
**STC-51**

**NGC 2009029**

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

UL Design: Not Rated

Figure 127



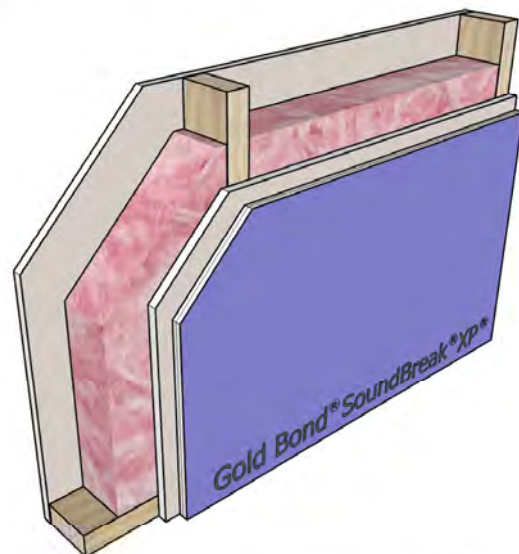
**STC-49**

**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 Gypsum Board

UL Design: Not Rated

Figure 129



**STC-51**

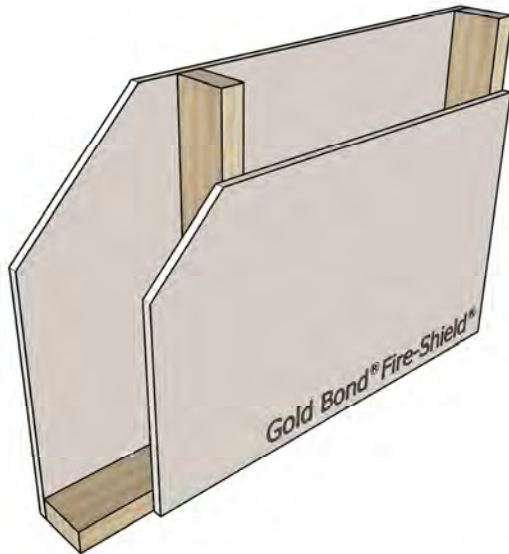
**NGC 2009028**

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 Gypsum Board on  
 1/2" Gold Bond Gypsum Board

UL Design: Not Rated

## Wood Stud Partitions with Framing 24" o.c.

Figure 130



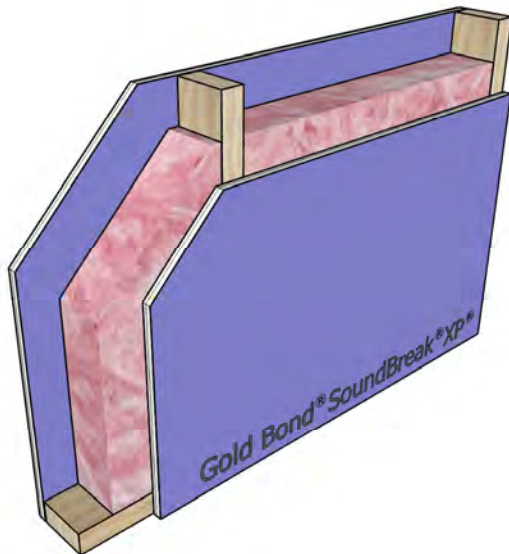
**STC-38**

**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 132



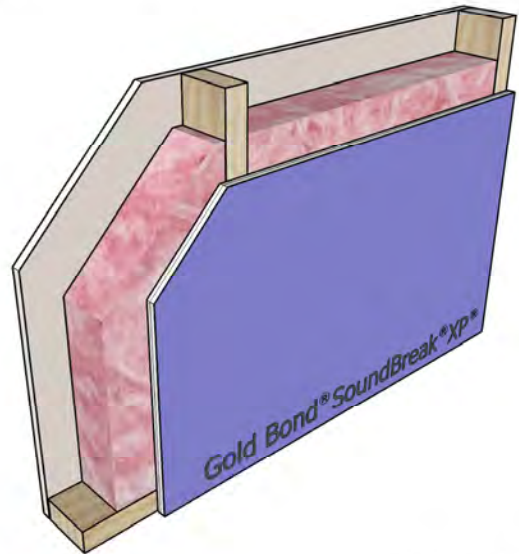
**STC-53**

**RAL-TL07-145**

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

UL Design: U309 - 1 hour

Figure 131



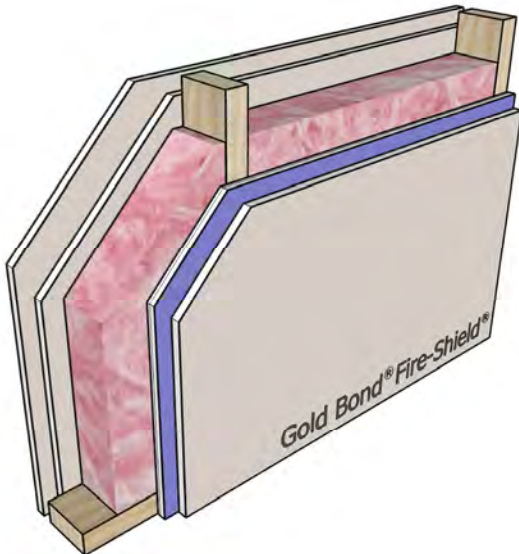
**STC-50**

**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 Gypsum Board

UL Design: U309 - 1 hour

Figure 133



**STC-54**

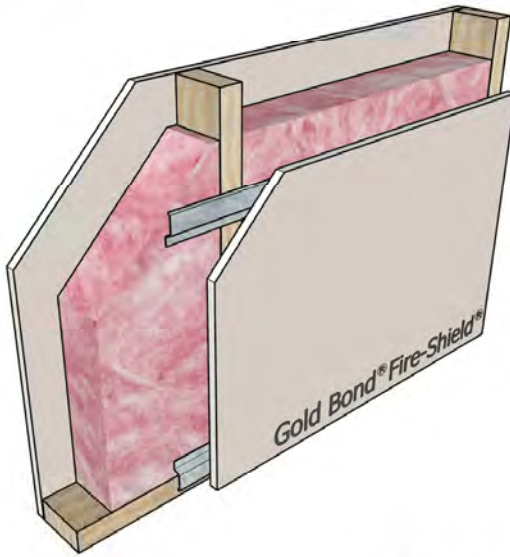
**NGC 2009016**

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 Gypsum Board  
 GA File: WP 4135 - 2 hour



## Wood Stud Partitions with Framing 24" o.c.

Figure 134



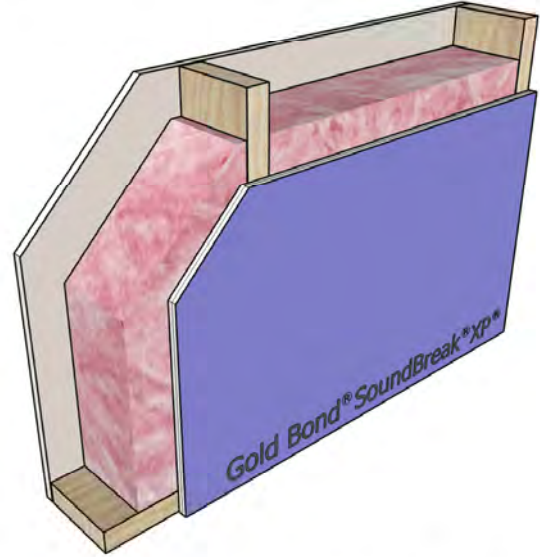
**STC-50**

**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

Figure 135



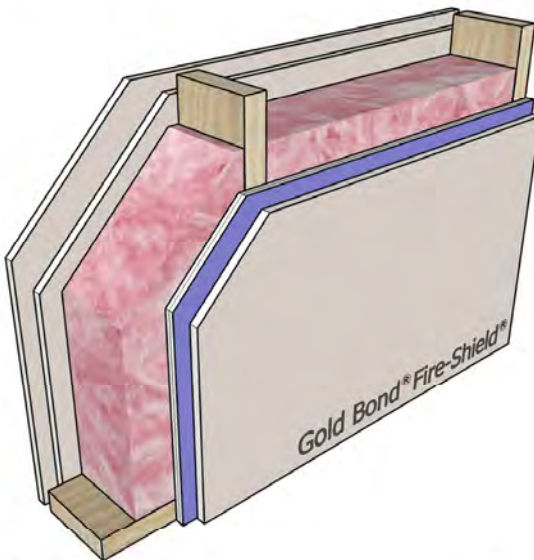
**STC-50**

**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 Gypsum Board

UL Design: U309 - 1 hour

Figure 136



**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 Gypsum Board  
 GA File: WP 4135 - 2 hour





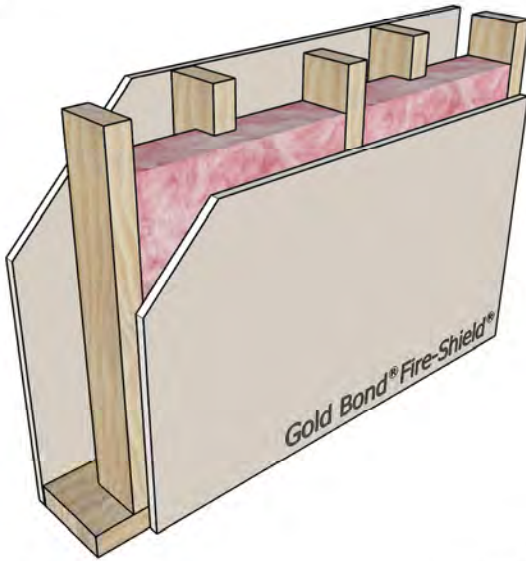






## Wood Stud Chase Walls

Figure 137

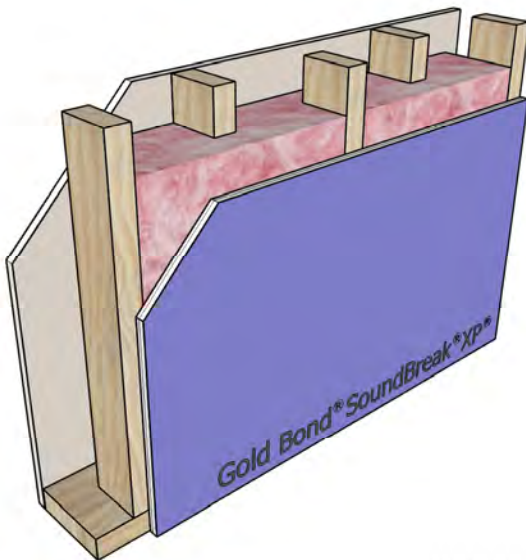


**STC-45**

**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  
 GA File: WP 5515 - 1 hour

Figure 139



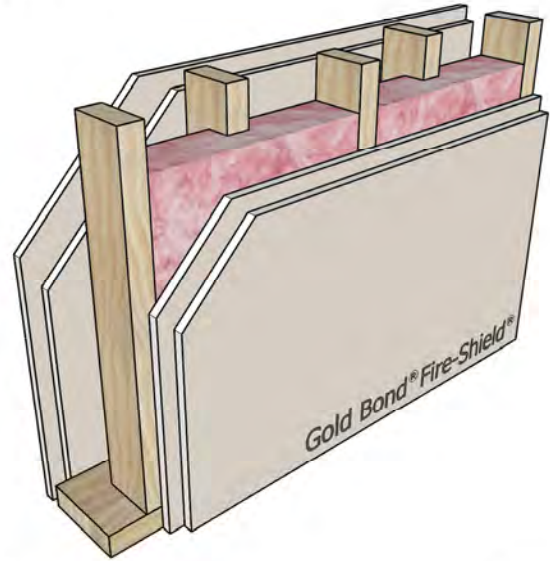
**STC-53**

**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 Gypsum Board

GA File: WP 5515 - 1 hour

Figure 138

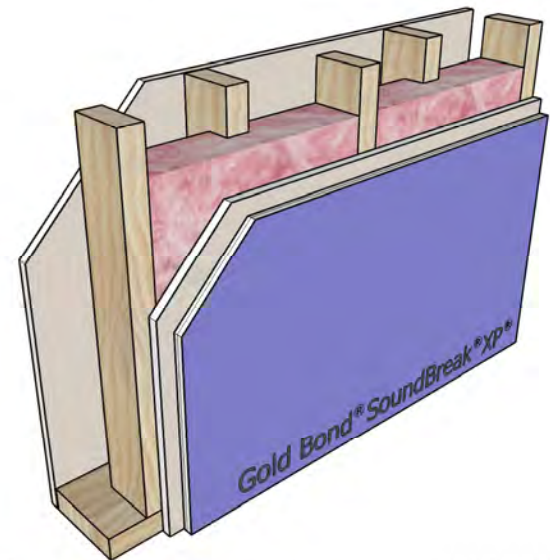


**STC-53**

**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 140



**STC-53**

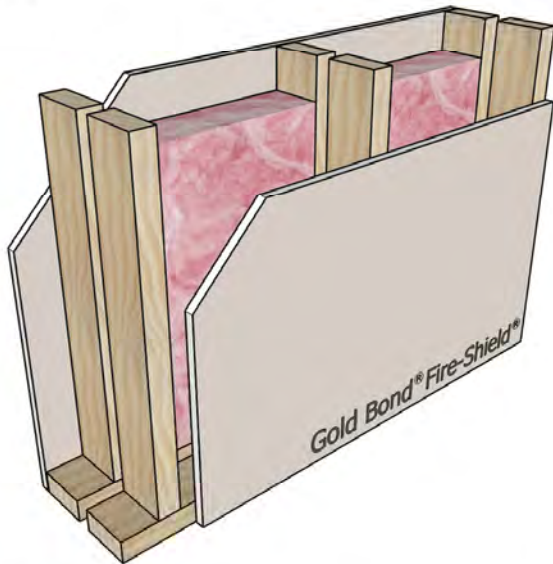
**NGC 2009045**

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 Gypsum Board on 1/2" Gold Bond Gypsum Board

UL Design: Not Rated

## Wood Stud Chase Walls

Figure 141



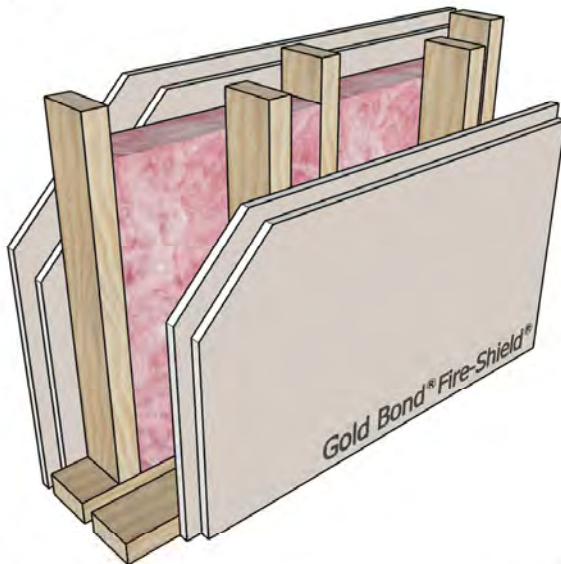
**STC-51**

**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 143



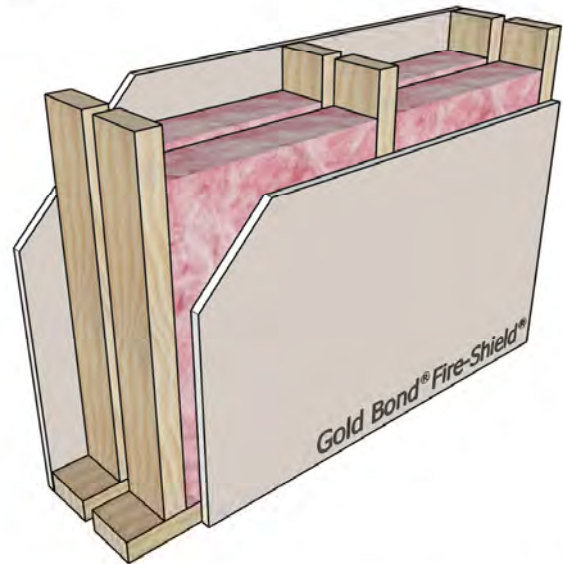
**STC-58**

**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

UL Design: WP 3820 - 2 hour

Figure 142



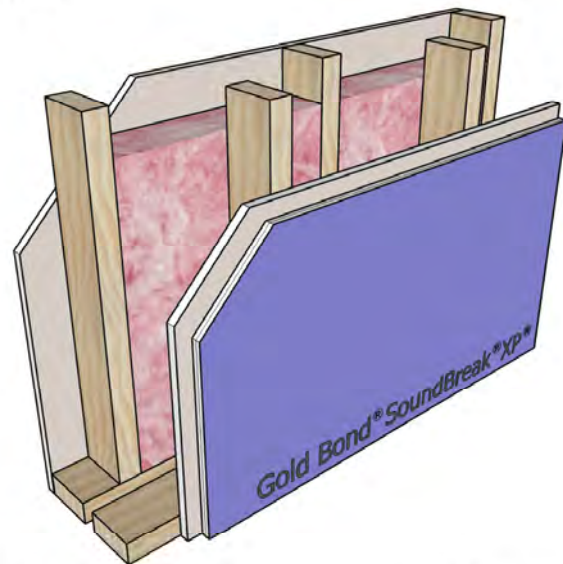
**STC-54**

**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 144



**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 Gypsum Board on 5/8" Fire-Shield Gypsum Board

UL Design: U341 - 1 hour



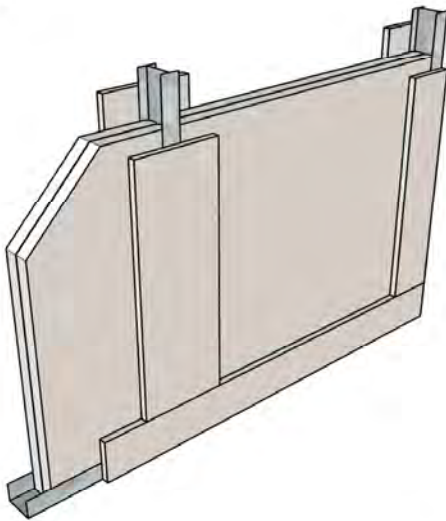






## Area Separation Fire Walls

Figure 145

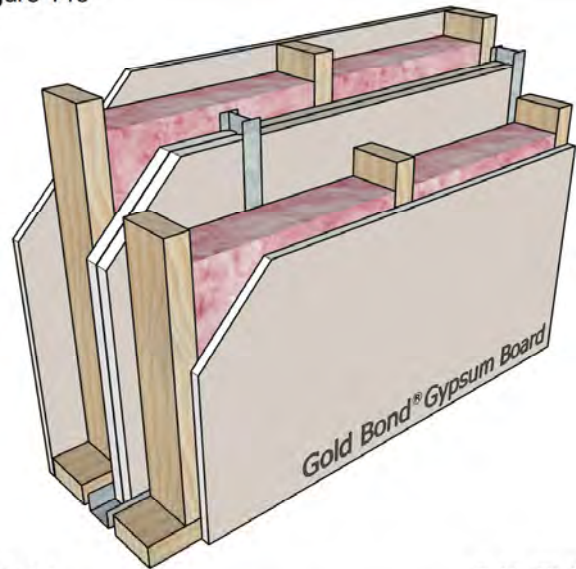


**STC-35**

**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 146

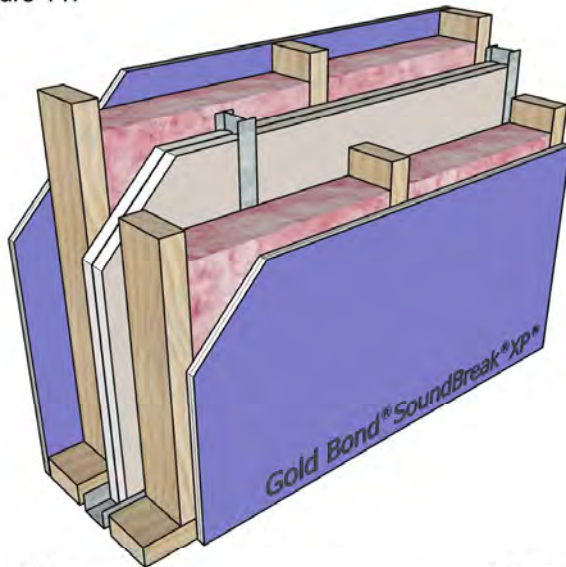


**STC-61**

**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 147

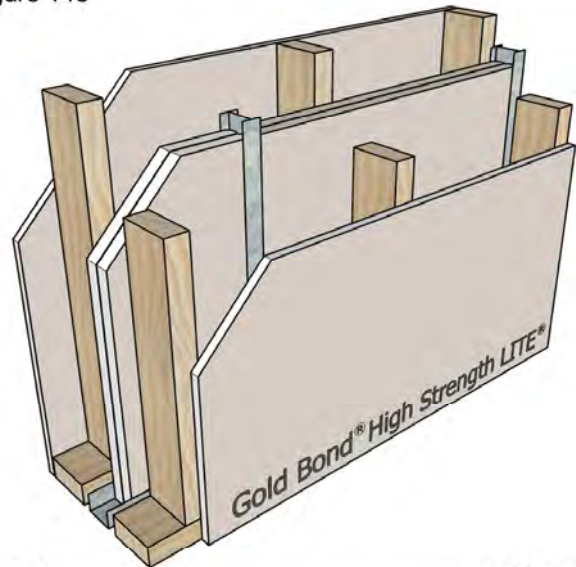


**STC-65**

**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 Gypsum Board  
 Side 2: 1/2" SoundBreak XP Gypsum Board  
 UL Design: U347 - 2 hour

Figure 148



**STC-41**

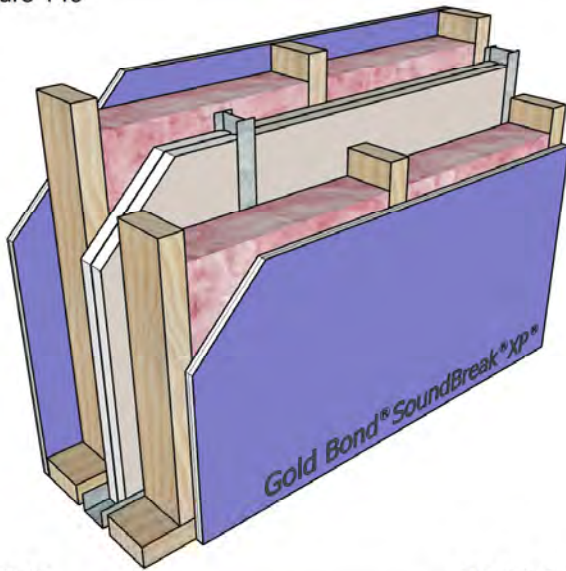
**NGC 2012086**

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 149

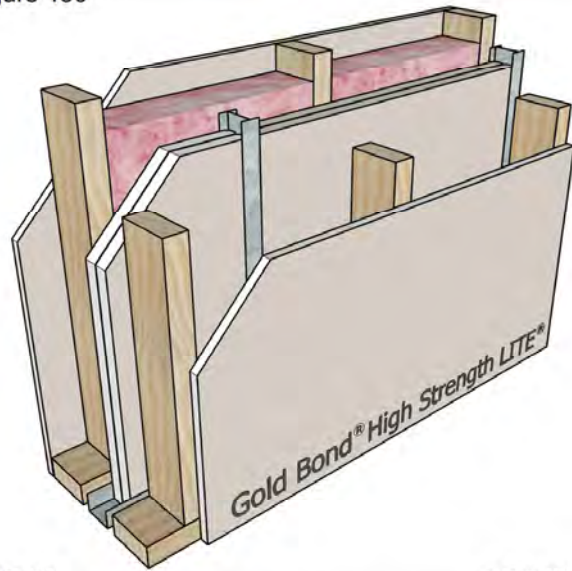


**STC-67**

**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 Gypsum Board  
 Side 2: 5/8" SoundBreak XP Gypsum Board  
 UL Design: U347 - 2 hour

Figure 150

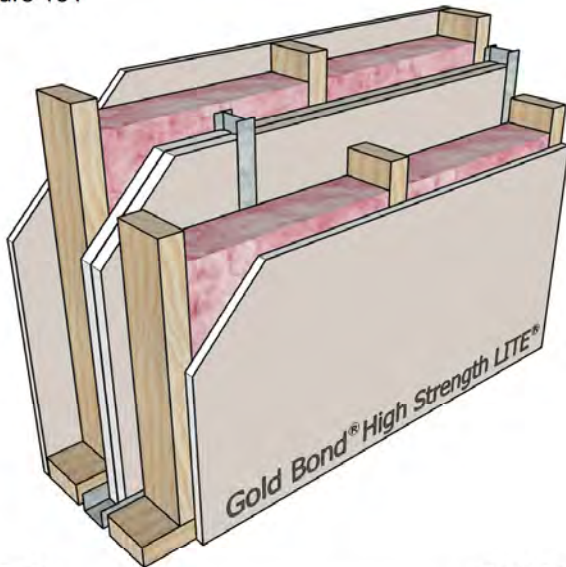


**STC-54**

**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 151

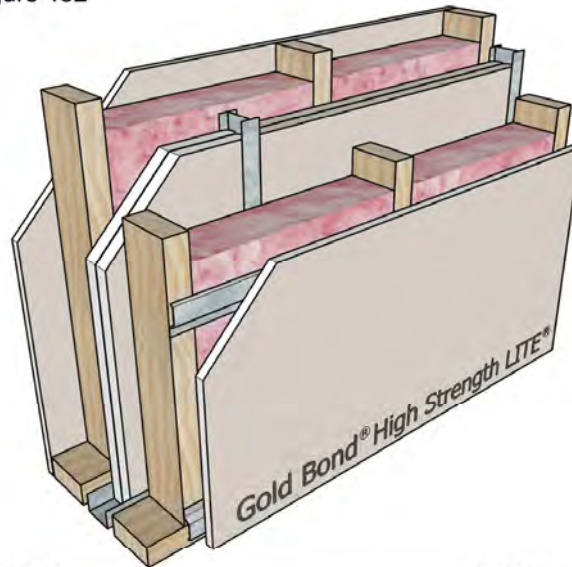


**STC-59**

**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 152



**STC-62**

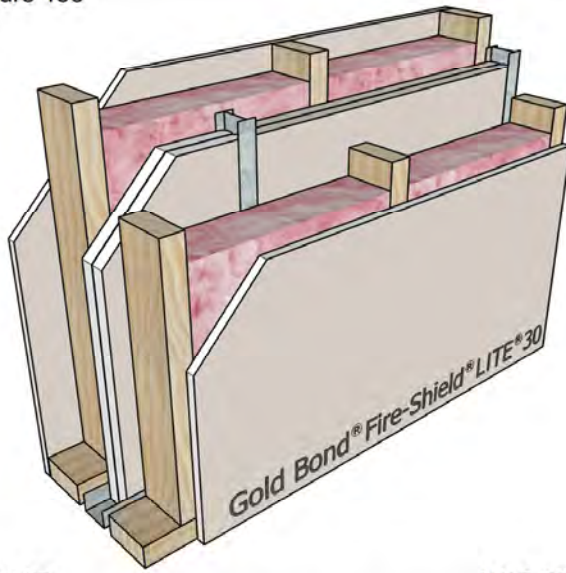
**NGC 2012079**

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: None  
 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 153

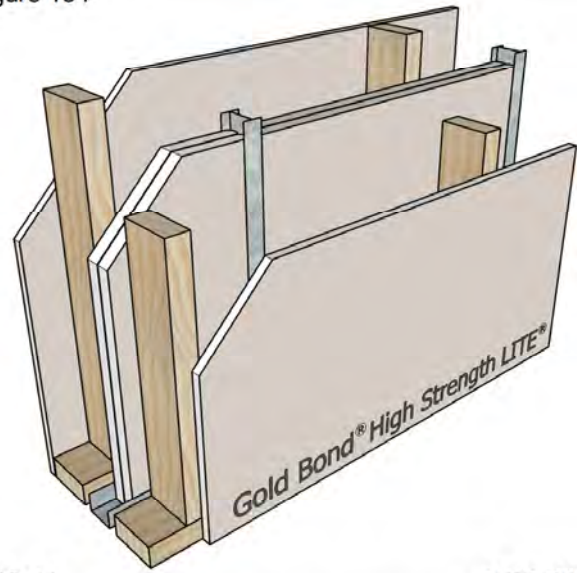


### STC-57

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" Fire-Shield LITE 30 Gypsum Board  
 Side 2: 5/8" Fire-Shield LITE 30 Gypsum Board  
 UL Design: U347 - 2 hour

Figure 154



### 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

Figure 150











## Floor-Ceiling Assemblies

Figure 155



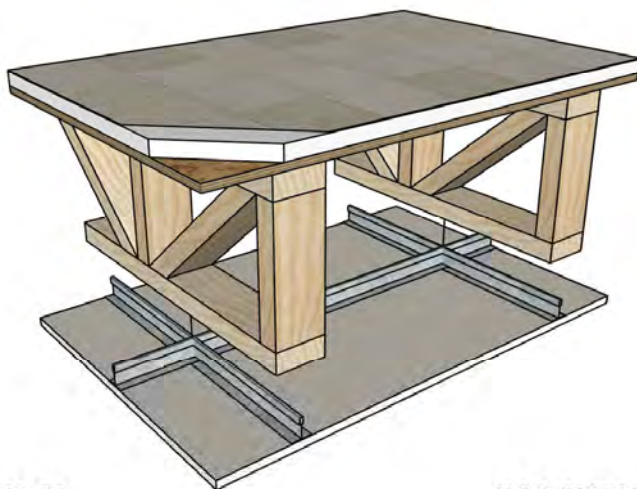
### STC-37

NGC 4024

Framing: 2x10 wood joists, 16" o.c.  
 Insulation: None  
 Floor: 19/32" wood structural panels on  
 15/32" plywood or 7/16" OSB  
 Ceiling: 1/2" Fire-Shield C Gypsum Board  
 UL Design: L522 - 1 hour

IIC - 32	Unfinished	NGC 5032
IIC - 66	With Carpet and Pad	NGC 5033

Figure 157



### STC-52

NGC 5007061

Framing: 18" wood trusses, 24" o.c.  
 Insulation: None  
 Floor: 1" gypsum underlayment on 3/4" OSB  
 Ceiling: 5/8" Fire-Shield C Gypsum Board on  
 suspended ceiling grid system  
 UL Design: L558 - 1 hour

IIC-51	With sheet vinyl flooring	NGC 7007119
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Figure 156



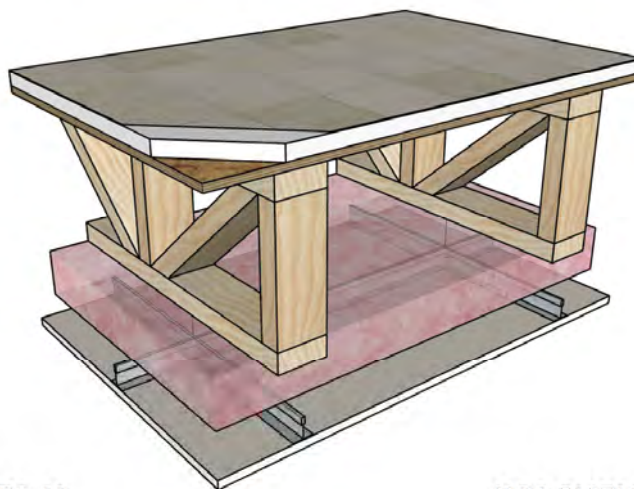
### STC-45

NGC 4107

Framing: 2x10 wood joists, 16" o.c.  
 Insulation: None  
 Floor: 19/32" wood structural panels on  
 15/32" plywood or 7/16" OSB  
 Ceiling: 1/2" Fire-Shield C Gypsum Board on RC-1  
 UL Design: L502 - 1 hour

IIC - 39	Unfinished	NGC 5161
IIC - 63	With Carpet and Pad	NGC 5165

Figure 158



### STC-60

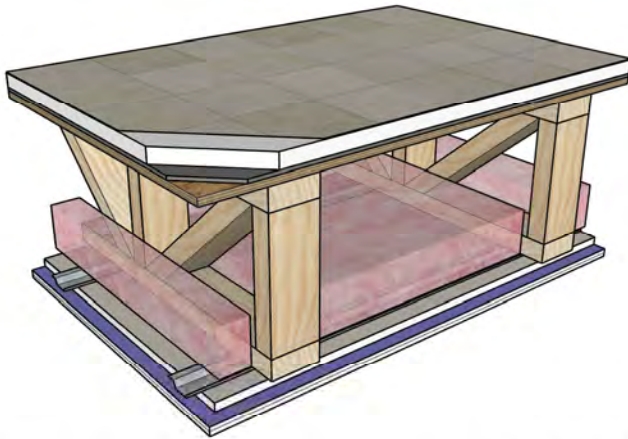
NGC 5007060

Framing: 18" wood trusses, 24" o.c.  
 Insulation: 3-1/2" glass fiber  
 Floor: 1" gypsum underlayment on 3/4" OSB  
 Ceiling: 5/8" Fire-Shield C Gypsum Board on  
 suspended ceiling grid system  
 UL Design: L558 - 1 hour

IIC-60	With sheet vinyl flooring	NGC 5007118
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## Floor-Ceiling Assemblies

Figure 159



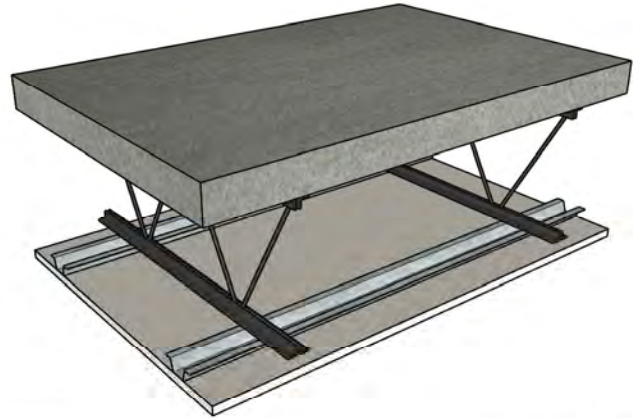
### STC-58

NGC 5007054

Framing: 18" wood trusses, 24" o.c.  
 Insulation: 3-1/2" glass fiber  
 Floor: 3/4" gypsum underlayment on 0.18" rubber underlayment on 3/4" OSB  
 Ceiling: 5/8" SoundBreak XP Gypsum Board on 5/8" Fire-Shield C Gypsum Board on RC-1  
 UL Design: L558 - 1 hour

IIC-49	Unfinished	NGC 7007109
IIC-51	With sheet vinyl flooring	NGC 7007110

Figure 160



### STC-53

NGC 4075

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

IIC - 21	Unfinished	NGC 5121
IIC - 67	With Carpet and Pad	NGC 5122





# Ceiling Attenuation Class of Gridstone Ceiling Assemblies

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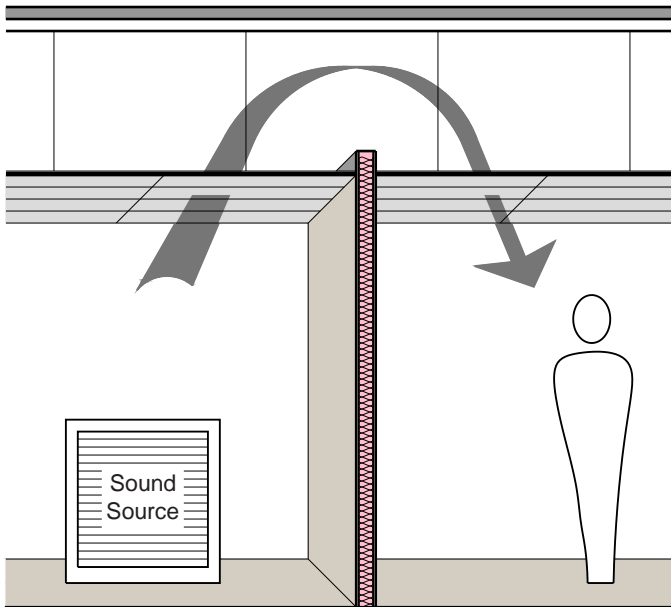






## Ceiling Attenuation Class for Gridstone Ceiling Assemblies

Figure 72



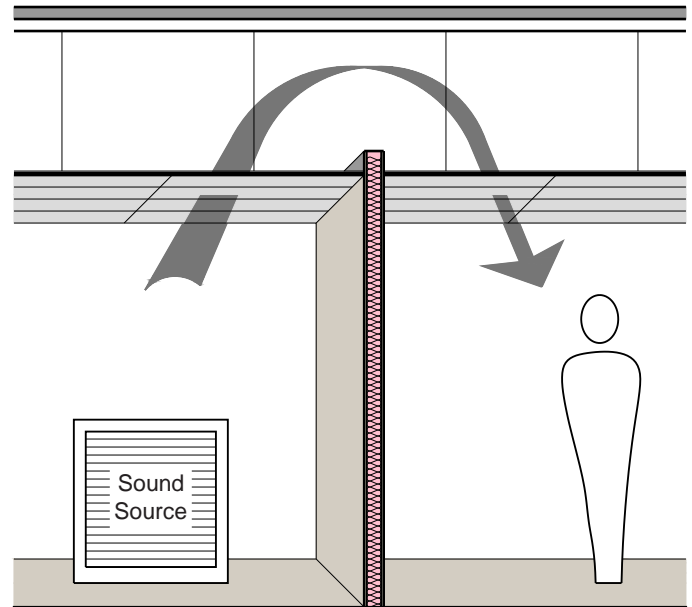
**CAC-41**

**NGC 6000001**

Ceiling: Suspended Grid with 2' x 4' x 5/16" Gridstone  
Hi-Strength Ceiling Panels

Insulation: None

Figure 72



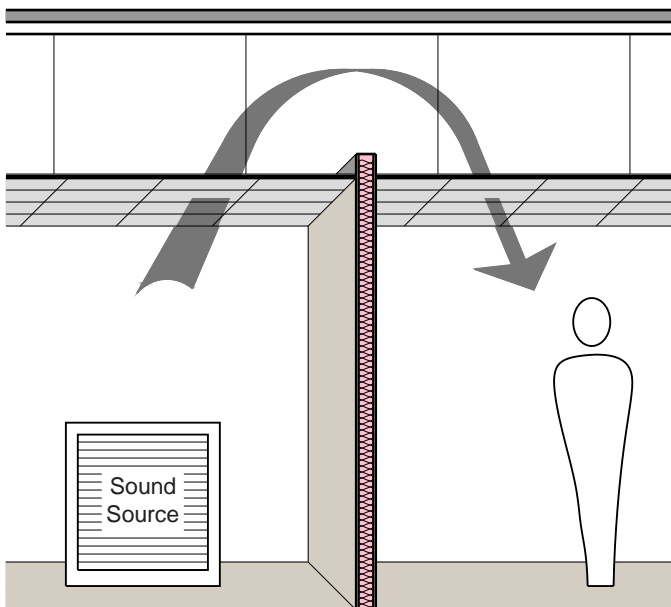
**CAC-46**

**NGC 6098001**

Ceiling: Suspended Grid with 2' x 4' x 1/2" Gridstone  
Ceiling Panels

Insulation: None

Figure 72



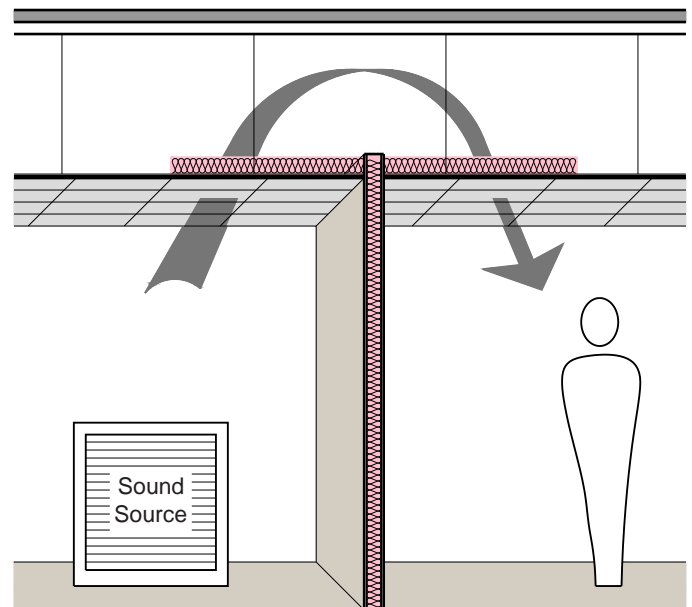
**CAC-44**

**NGC 6013012**

Ceiling: Suspended Grid with 2' x 2' x 1/2" Gridstone  
Ceiling Panels

Insulation: None

Figure 72



**CAC-51**

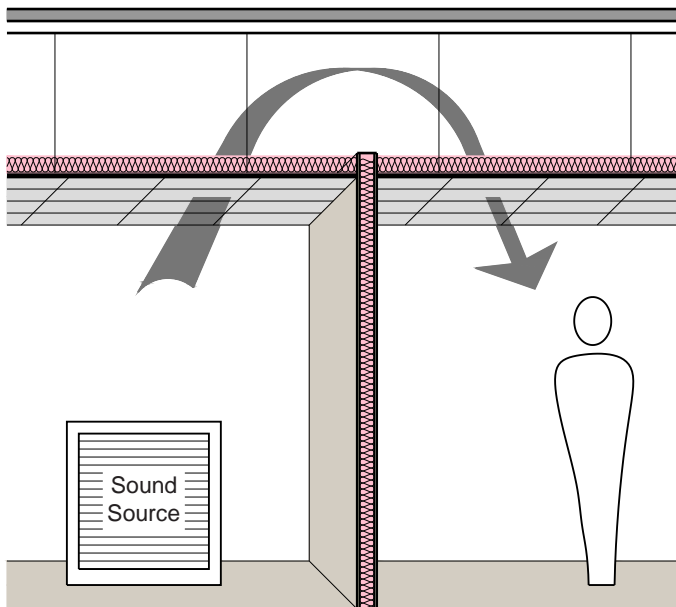
**NGC 6013013**

Ceiling: Suspended 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 for Gridstone Ceiling Assemblies

Figure 72



**CAC-53**

**NGC 6013014**

Ceiling: Suspended Grid with 2' x 2' x 1/2" Gridstone Ceiling Panels

Insulation: 3-1/2" glass fiber full coverage over ceiling





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

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