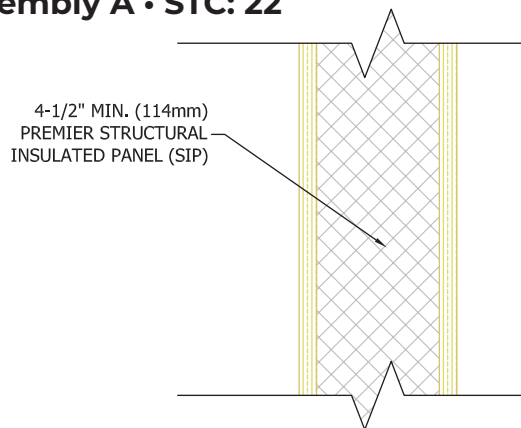


### SUBJECT: SOUND TRANSMISSION OF PREMIER SIPS

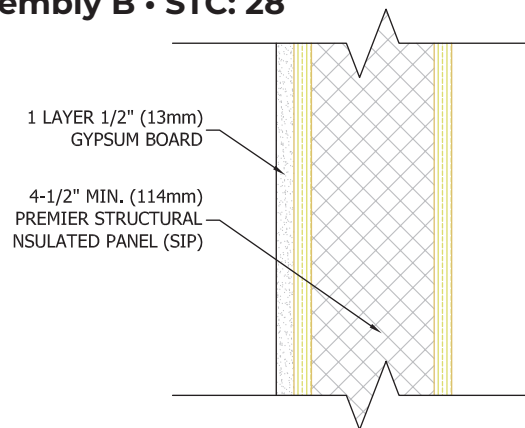
Premier SIPS have been erected in numerous residential and commercial applications where the occupants have expressed great satisfaction with the reduced noise level within their structure due to the SIP construction. While these stories are anecdotal they indicate that structures built with Premier SIPS do provide a measure of sound attenuation.

Within the building industry, specific tests are used to determine the Sound Transmission Class (STC) of an assembly or component. ASTM E90 "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements," subjects a wall assembly to random noises in a frequency range of 125 to 4000 Hz. The following are STC values for several Premier SIPS assemblies with a minimum 4 1/2" thickness, used in standard construction, which were determined through testing at an accredited independent laboratory. These assemblies are for typical **residential** applications:

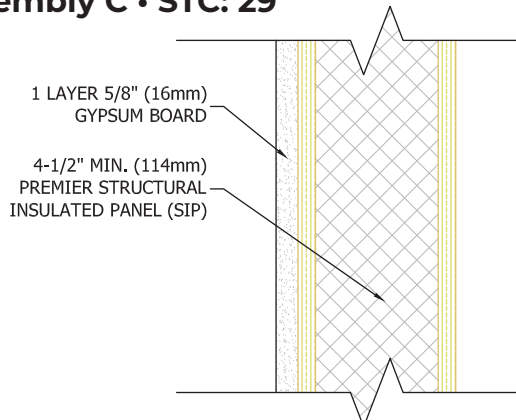
#### Assembly A • STC: 22



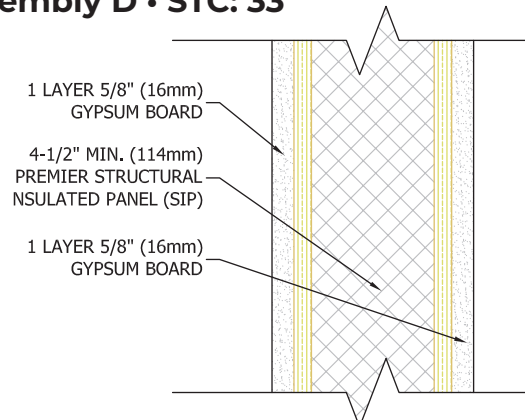
#### Assembly B • STC: 28



#### Assembly C • STC: 29



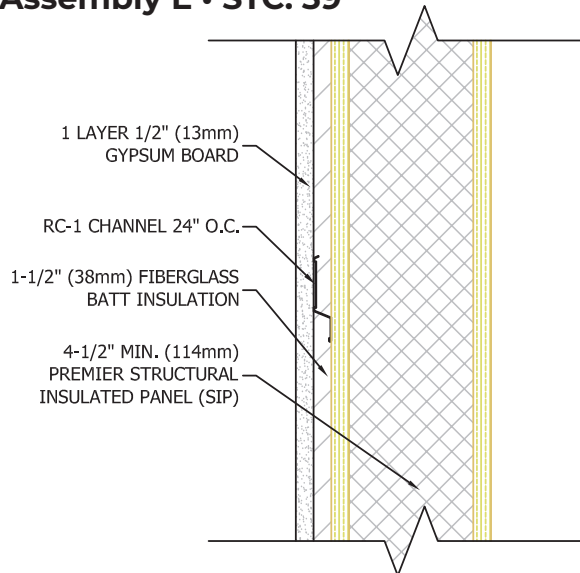
#### Assembly D • STC: 33



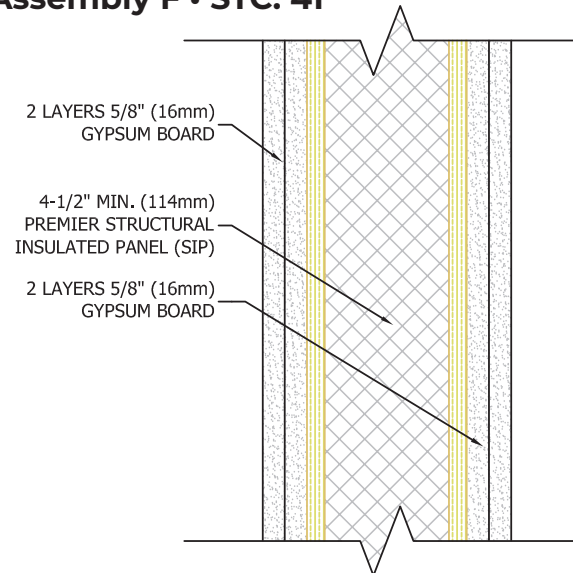
# TECHNICAL BULLETIN

## NO. D-8

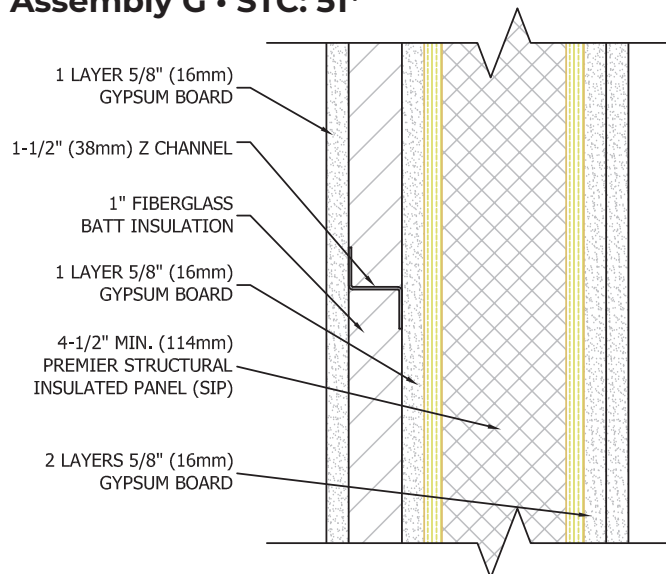
### Assembly E • STC: 39



### Assembly F • STC: 41\*



### Assembly G • STC: 51\*



In all of the previous described assemblies, gypsum wallboard was attached using standard screws directly into the face of the SIP or metal channels. In multiple layer assemblies, the joints were offset a minimum of six inches from the joints of the previous layer.

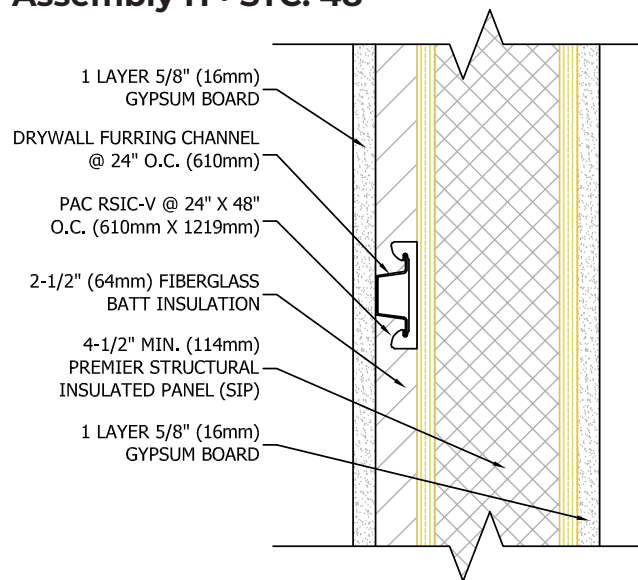
# TECHNICAL BULLETIN

## NO. D-8

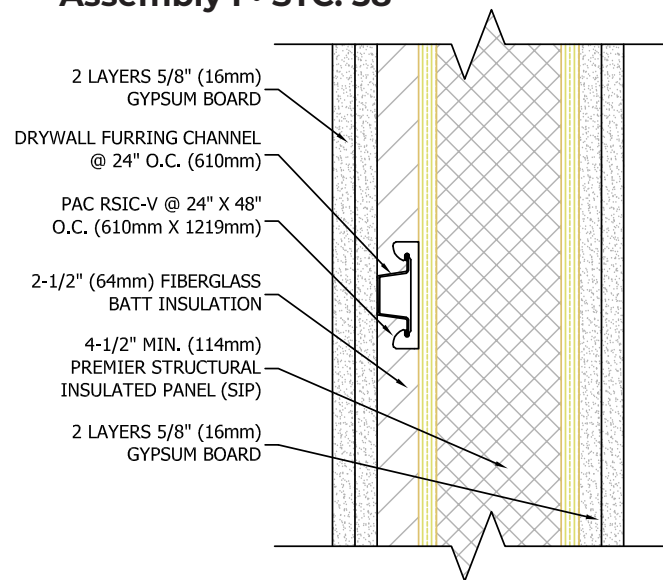


Premier SIPS are also used in attached **multifamily** applications such as condominiums and town homes. Hence, Premier SIPS has also conducted ASTM E90 test on wall assemblies that produce higher sound attenuation while meeting fire and clearance requirements for these types of structures. These include the following four assemblies using Premier SIPS in conjunction with two types of PAC International Isolation clips to yield higher STC values. The assemblies are as follows:

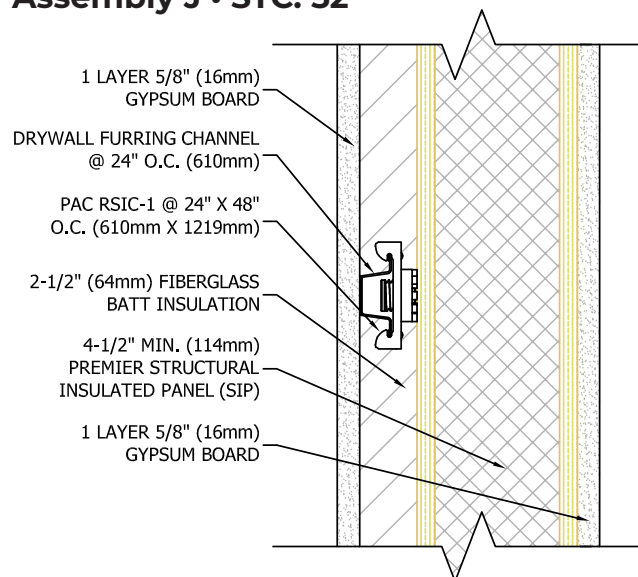
### Assembly H • STC: 48



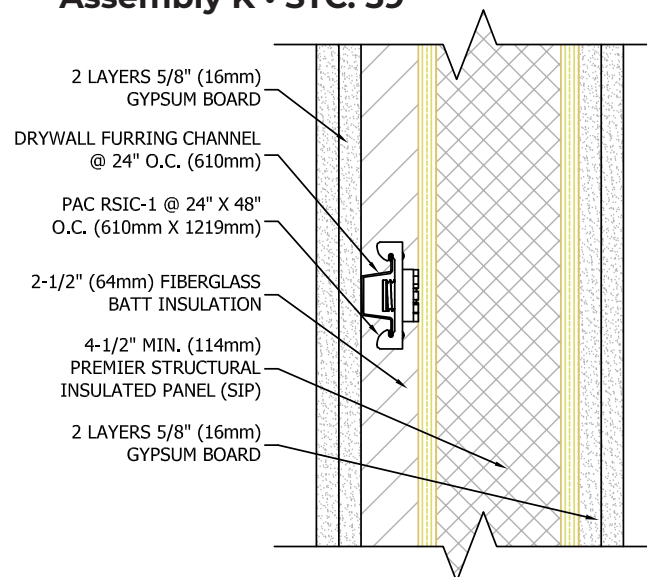
### Assembly I • STC: 58\*



### Assembly J • STC: 52



### Assembly K • STC: 59\*



Assemblies 1 through 4 used standard drywall screws to fasten the gypsum to drywall furring channels attached to the RSIC-V or RSIC-1 Isolation clip assembly. In the multi-layered assemblies the gypsum wall board joints were staggered between layers.

The above results will be affected by the use of additional or different finish materials and are supplied as a reference value. It should also be noted that sound attenuation is dependent on installation practices. Penetrations, through the wall assembly for electrical, plumbing and other fenestrations (such as windows and doors), can affect the sound transmission performance of a wall. Design consideration should be given to any penetrations through a wall requiring a STC value.

For more construction details on PAC International isolation clips visit <https://pacinternationalllc.com/pac-products/rsic-1-product/>.

\* These assemblies meet the requirements of UL U524 Bearing Wall Rating - 1 HR.