



Technical Bulletin #25c

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SOUND TRANSMISSION

Extreme Panels 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 Extreme Panels 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 Hz – 4000 Hz. The following are STC values for several Extreme Panel assemblies used in standard construction, which were determined through testing at an accredited independent laboratory. These assemblies are for typical residential applications:

Extreme Panel (no finish either face)	STC- 22
½” gyp, Extreme Panel, no finish on other face	STC- 28
5/8” gyp, Extreme Panel, no finish on other face	STC- 29
5/8” gyp, Extreme Panel, 5/8” gyp	STC- 33
2-layers 5/8” gyp, Extreme Panel, 2-layers 5/8” gyp	STC- 41

Extreme Panels are also used in town homes and condominiums. Hence, Extreme Panel Technologies has also conducted ASTM E90 tests on wall assemblies that produce higher sound attenuation while meeting fire and clearance requirements for these types of structures. These include:

Double Wall Assembly-A	STC-45
5/8” gyp, Extreme Panel, 5/8” gyp, 1” air space, 5/8”gyp, Extreme Panel, 5/8”gyp	
Double Wall Assembly-B	STC-47
2 layers 5/8” gyp, Extreme Panel, 5/8” gyp, 1” air space, 5/8”gyp, Extreme panel, 5/8”gyp	
Double Wall Assembly-C	STC-52
2 layers 5/8” gyp, Extreme Panel, 5/8” gyp, 1” air space, 5/8”gyp, Extreme panel, 2 layers 5/8”gyp	
Double Wall Assembly-D	STC-54
2 layers 5/8” gyp, Extreme Panel, 2 layers 5/8” gyp, 1” air space, 5/8”gyp, Extreme panel, 2 layers 5/8”gyp	

In all of the above described cases, gypsum wallboard was attached using standard screws directly into the face of the panel. In multiple layer applications the joints were offset a minimum of six inches from the joints in the previous layer.

The following four assemblies use Extreme Panels in conjunction with a proprietary patented clip assembly to yield higher STC values that may be beneficial in certain conditions. The assemblies are as follows:

Assembly-1	STC-48
5/8” gyp, Extreme Panel, proprietary clip assembly, fiberglass, 5/8”gyp	
Assembly-2	STC-58



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2 layers 5/8" gyp, Extreme Panel, proprietary clip assembly, fiberglass, 2 layers 5/8" gyp	
Assembly-3	STC-52
5/8" gyp, Extreme Panel, proprietary clip assembly, fiberglass, 5/8" gyp	
Assembly-4	STC-59
2 layers 5/8" gyp, Extreme Panel, proprietary clip assembly, fiberglass, 2 layers 5/8" gyp	

Assemblies 1 through 4 used standard drywall screws to fasten the gypsum to either the SIP panel or the proprietary 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 fenestration can affect the sound transmission performance of a wall. Design consideration should be given to any penetrations through a wall requiring a STC value.