

STC Acoustic Sleeper™: Frequently-Asked Questions (FAQ's)

Q: What is the Acoustic Sleeper made of?

A: Neoprene, a dense and resilient rubber selected for its ability to isolate vibrations. Color is black.

Q: Why does the Acoustic Sleeper have that particular profile?

A: A critical goal of isolating impact noise is to minimize contact between the finish floor surface and the supporting structure. More than 99.8% of the floor area is isolated from the structure with Acoustic Sleeper installations; continuous mat systems don't do that.

Q: How well does the Acoustic Sleeper perform for Impact Insulation Classification (IIC)?

A: Independent tests per ASTM E 2179 of sleeper pads demonstrate ΔIIC-23, much higher than gypsum cement and acoustical mat systems, rubber mats, and cork.

Q: What configurations are available?

A: Acoustic Sleepers are 1-½" wide, ¼" high, and are available as pads (1-½" square) and strips (44" long). Strips can be easily cut to any length.

Q: Does the Acoustic Sleeper System self-level like gypsum cement?

A: No, it acts like a typical panel on structural members, deflecting for comfort underfoot. It is flat as required by finish floors; levelness is not required. Also, with self-levelling underlayment the variable thickness of the cement brings behavior under fire conditions into question; it causes cracking at thin areas; and it stresses structure from additional dead load at thick areas.

Q: How thick is the system?

A: For wood framing the system is typically 1-½" above structural members – ½" sheathing, ¼" pads, and ¾" subfloor. For concrete deck the system the pads and subfloor total 1" thick.

Q: How many pads are needed?

A: Quantity depends on structural member spacing (along panel length) and desired spacing of pads for deflection based on loads and panel thickness. Refer to the attached chart.

Area per 100 Pads			
Spacing along Panel Length	Spacing across Panel		
	12"	16"	24"
16"	133	177	266
19.2"	160	213	320
24"	200	266	400



Q: Is the Acoustic Sleeper fire rated for use in combustible construction?

A: Yes. The Acoustic Sleeper is part of UL-listed 1-hour and 2-hour fire-rated assemblies in Construction Types III-A and V-A:

- Wood Joists: 1-hour L502, L506, L514; 2-hour L505
- I-Joists: 1-hour L589
- Wood Truss: 1-hour L528, L563, L574; 2-hour L577
- Metal Joists: 1-hour L524
- Light Gauge Metal Truss: 1-hour L560, L565

Q: What is the construction sequence for the Acoustic Sleeper system in wood construction?

A: Installation of the system is continuous over the entire floor plate by the framing contractor after the sheathing layer and before partitions are installed. This eliminates cutting of the sheets and speeds the process. With a continuous bearing strip of ¼" plywood or OSB under load-bearing walls, shear walls, and fire-resistance-rated walls, all studs are precut to the same length. This is the preferred detail.

Q: Why are there two wood layers in frame construction?

A: Typical wood floor construction has a single subfloor/sheathing layer. The Acoustic Sleeper system separates the functions with two layers to provide acoustic isolation and fire resistance without gypsum cement. The sheathing (base) layer is fastened to the structural members to provide diaphragmatic shear resistance, glued and nailed to also provide composite action and reduce deflection. The subfloor (upper) layer is supported on top of the sheathing layer by the Acoustic Sleeper pads or strips, and in line with the structural members. This isolates the transmission of impact vibration while transferring the vertical loads to the structure. In event of fire, the lower sheathing layer chars and protects the upper subfloor layer so it can continue to carry the structural loads for the required fire resistance.

Q: What about moisture between the two layers?

A: If moisture enters between the two wood panels it wicks to the square-edge joint in the lower sheathing panel by vapor pressure differential and evaporates. This is accelerated since the two panels do not touch, which would cause adhesion and condensation of the vapor. We recommend an open joint of about 1/8" at the sheathing panels between structural members.

Q: Is ½" OSB really enough for the sheathing layer?

A: OSB ½" thick can be designed for high-load diaphragms in accordance with American Wood Council (AWC) Special Design Provisions for Wind and Seismic (SDPWS). Where higher diaphragm capacities are required, or where spans are designed assuming composite action with sheathing, thicker panels may be used for the sheathing layer.

Q: Can the Acoustic Sleeper system be used in non-combustible construction with wood panels?

A: Yes. Wood panels are permitted as a "floor covering material" over noncombustible floor/ceiling assemblies per IBC 603.1.5 and IBC 804.1. Refer to installation instructions on concrete for information regarding panel orientation and fastening.

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