Understanding Acoustics

What acoustic ratings mean, how they're measured, and how Panel-Tex Shapes panels perform.

What the numbers mean

Hard surfaces like drywall, glass and concrete bounce sound back into a room. In a busy office, classroom or restaurant, those reflections pile up into the echo and background clatter that make it hard to hear the person across the table. Soft, porous materials soak up part of that sound instead of reflecting it.

The industry measures this with the **Noise Reduction Coefficient (NRC)**, a single number from 0 to 1. A surface rated 0 reflects nearly everything. A surface rated 1 absorbs nearly all the mid-range sound that hits it. Higher is quieter.

0.48*

NRC, fabric-wrapped panel

0.40

NRC, panel core mounted flat on the wall, independently lab tested

0.80

Panel core absorption at 2,000 Hz, the range of voices and clatter

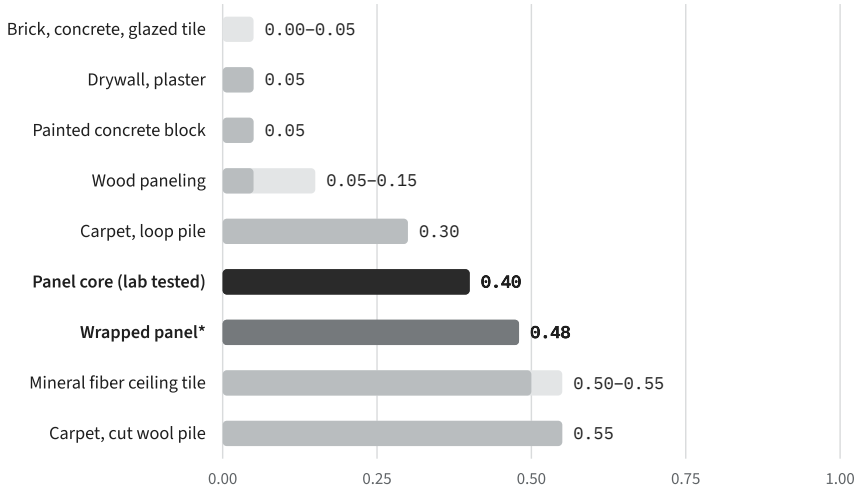
*Projected rating for the finished, fabric-wrapped panel, derived from the independently tested panel core and the added absorption of the acoustic fabric. Laboratory testing of the complete panel is in progress, and results will be published once final. The 0.40 panel core rating is from an independent ASTM C423 laboratory test.

The air space: a built-in boost

Panel-Tex Shapes panels ship with self-adhesive tabs for mounting. Besides holding the panel in place, the tabs hold it slightly off the wall, leaving a thin pocket of air behind it. Sound that passes through the panel gets another chance to be absorbed before and after it bounces off the wall, so panels mounted with an air space absorb more than the same panels pressed flat. How much more depends on the room: the wall material, the size of the space and what else is in it all play a part.

How Panel-Tex Shapes compares with common room surfaces

NRC, 0 to 1. Lighter bar ends show a published range.

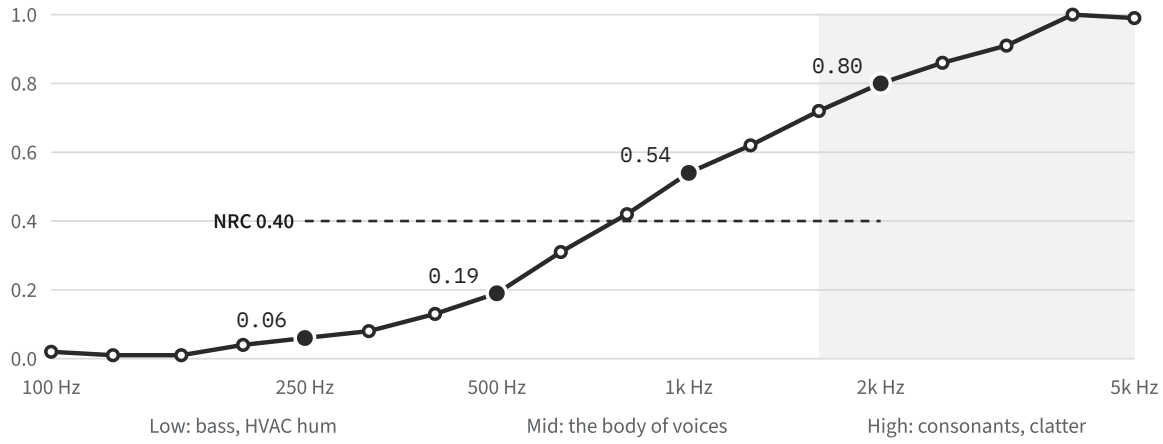


Where Panel-Tex Shapes panels work hardest

NRC is an average across four frequencies: 250, 500, 1,000 and 2,000 Hz. The full panel core test shows more. The panels absorb most at the higher frequencies where speech consonants, clinking dishes and keyboard clatter sit. They do less with deep, low sounds like bass or mechanical hum, which takes much thicker material to absorb.

Sound absorbed by the panel core, by frequency

Absorption coefficient, ASTM C423, mounted flat on the wall (Type A). Large dots mark the four frequencies averaged into NRC. Panel core without fabric.



NRC is not soundproofing

NRC measures echo inside a room. Blocking sound from passing through a wall to the next room is a different rating, STC (Sound Transmission Class). Wall panels improve how a room sounds; they don't stop noise from leaking in or out.

Mounting changes the number

Labs test panels in standard mountings. "Type A" means flat against a hard surface, which is how our panel core was tested. Products tested with an air gap behind them score higher, so when comparing ratings, check that the mounting matches.

Coverage matters most

A rating describes each square foot of panel. The more wall area you cover, the more sound the room absorbs. Spreading panels across the walls where people talk works better than one cluster.

How it's tested

Panels are placed in a reverberation room, and the lab measures how much faster sound dies away across frequencies from 100 to 5,000 Hz. NRC averages four of them and rounds to the nearest 0.05. Some specs also list SAA (Sound Absorption Average), which uses twelve bands. Our panel core tested at 0.40 for both.

Planning a large commercial project?

Contact us directly for project pricing, specifications and acoustic test reports: info@ptshapes.com or 718-475-4509.

Test data: Panel core, 12 mm (1/2") polyester (PET), 2400 gsm, independently lab tested to ASTM C423, Type A mounting, March 2025. NRC 0.40, SAA 0.40. Full report available on request. Fabric-wrapped panel NRC 0.48 is a projected rating; laboratory testing of the complete panel is in progress.

Comparison values: Typical published NRC values from Sustainable Materials, "What is NRC and why does it matter" (sustainablematerials.com). Actual values vary by product and installation.