

A man with a beard, wearing a white t-shirt and a black baseball cap, is shown in profile from the chest up, looking towards a blurred house in the background. The house has a white gable roof and a window with blue shutters. The sky is blue with light clouds.

Home Quiet® Home

Residential Sound Control

QuietRock®

sound reducing drywall

by  PABCO® Gypsum



ACOUSTICS AT HOME

Is your home now your office too? Is there a home theater or exercise room in your house? Homes are increasingly becoming multi-functional spaces and that leads to a greater need for sound control.

WHY SOUND CONTROL?

When working from home, noise from other parts of the house can be disruptive and decrease your productivity. Likewise, when you're watching a movie in your state-of-the-art home theater, you may want to isolate the sound from transferring to other areas of your house. Sound isolation is simply reducing the amount of sound transmitting from one room to another—from a family room to an adjacent home office or bedroom for example.

IMPROVING SOUND ISOLATION IN HOMES

There are several ways to improve sound isolation in homes. These can be grouped into four categories: absorption, mass, decoupling, and damping. The chart below describes each method, its sound control performance and other considerations. As you can see, damping performs the best from a sound control perspective and has several benefits compared to the other sound isolation alternatives. Sound isolation results were derived from testing conducted at a third-party accredited laboratory in May 2020. See test results on page 6.

Method	Performance	Considerations
 <p>Absorption Adding insulation to wall cavity, such as fiberglass or mineral wool insulation</p>	Minimal improvement in sound isolation for both fiberglass and mineral wool insulation	<ul style="list-style-type: none"> Absorption primarily affects sound within a room rather than the transfer of sound into another room Demolition required for remodels
 <p>Mass Adding more gypsum panels to increase overall mass of wall system</p>	Minimal improvement in sound isolation	<ul style="list-style-type: none"> Increased project time More products to purchase, haul, and install Thicker walls means less floor space Requires build out of doors, windows, and trim
 <p>Decoupling Acoustically isolating drywall from wall framing by adding fiberboard as a base layer—a common decoupling treatment for homes</p>	Higher sound isolation performance than mass and absorption but not as good as damping	<ul style="list-style-type: none"> Increased project time More products to purchase, haul, and install Thicker walls mean less floor space Difficult to install, prone to installation errors High rate of short circuiting (failure) Demolition required for remodels
 <p>Damping Minimizing sound vibration through walls using multi-layer composite panels made of gypsum wallboard and viscoelastic polymers</p>	Highest sound isolation performance	<ul style="list-style-type: none"> Easy installation—installs and finishes like regular drywall Lower installed cost than other methods Saves floor space with one panel of drywall Ideal for remodels—installs over existing walls with no demolition

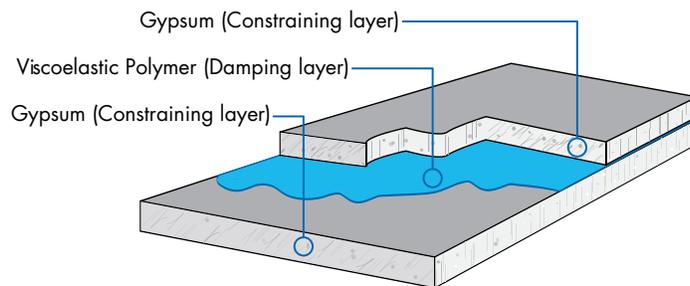
QUIETROCK® BY PABCO® GYPSUM

QuietRock is the first and most technically advanced sound reducing drywall in the industry. It uses constrained layer damped (CLD) technology to reduce the noise transmitting from room to room. It is a multi-layer composite panel made up of gypsum wallboard laminated with a viscoelastic polymer.

QuietRock sound reducing drywall can be used for new construction as well as remodels for single and multifamily homes. Ideal for retrofit projects, QuietRock can be installed directly to the existing drywall—no demolition required. Installation is easy as it installs and finishes just like regular drywall.

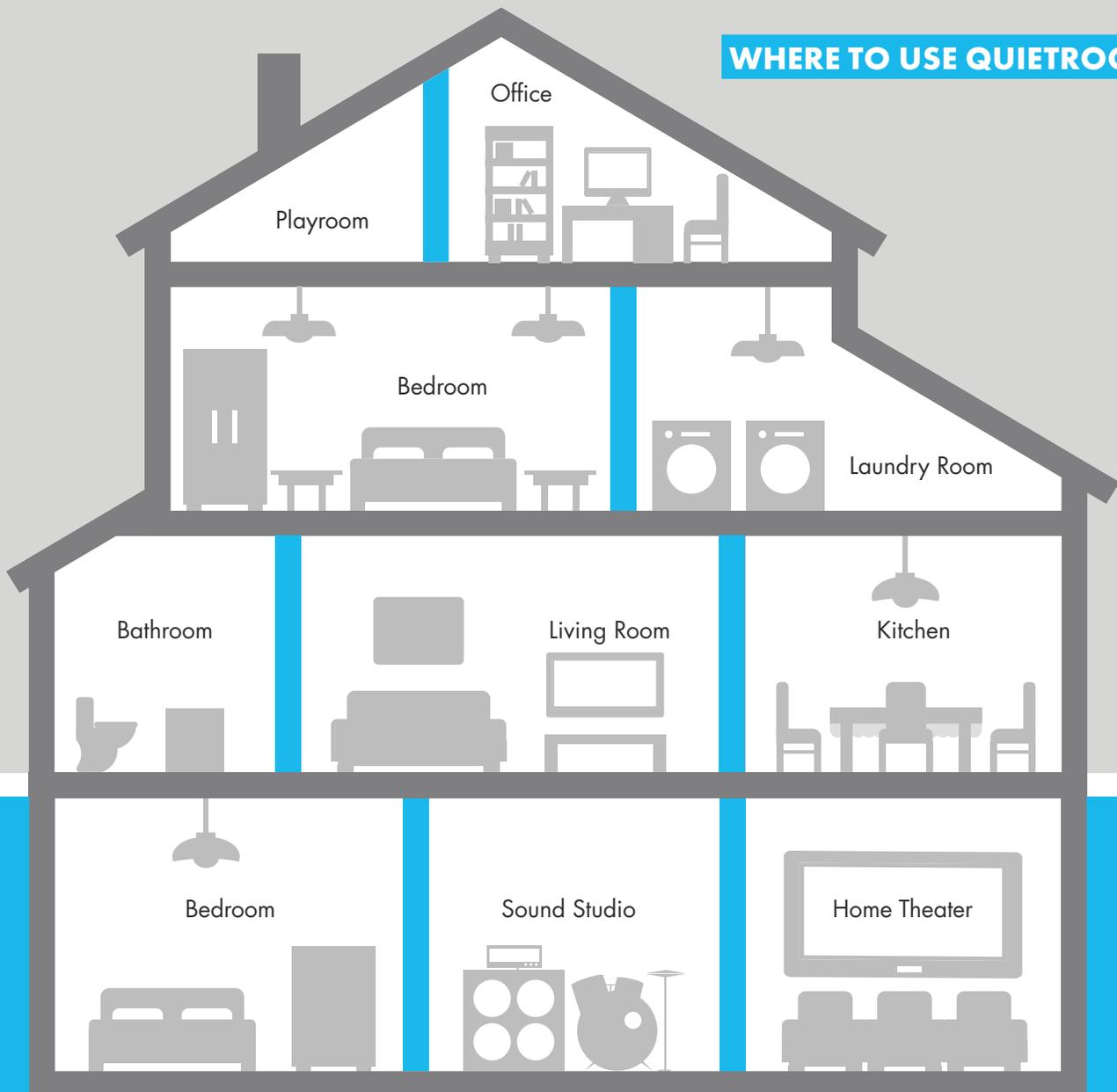
HOW QUIETROCK WORKS

Standard drywall by itself is rigid, allowing more sound to pass through the wall. Adding a viscoelastic polymer layer allows the drywall layers to flex resulting in less sound being transferred to the next room.



Cross section of a QuietRock CLD panel.

WHERE TO USE QUIETROCK



Laundry Room

Washing machines and dryers can be disruptive. If your baby is taking a nap or you're working in your home office, sound reducing drywall can help minimize the noise distraction.



Bedrooms

Your bedroom is your sanctuary—a place to enjoy a restful night's sleep. Noise from the laundry room or home theater can be disturbing. Sound reducing drywall will help minimize noise coming from other areas of your home.



Bathrooms

Typical bathroom noises can be a disruption. QuietRock will reduce bathroom sounds from the rest of the house.



Home Theater/ Sound Studio

Enjoying the total media experience in your home theater? Or practicing and recording music in your home sound studio? Crank up the volume without disturbing the rest of the house. Sound reducing drywall comes in handy here.

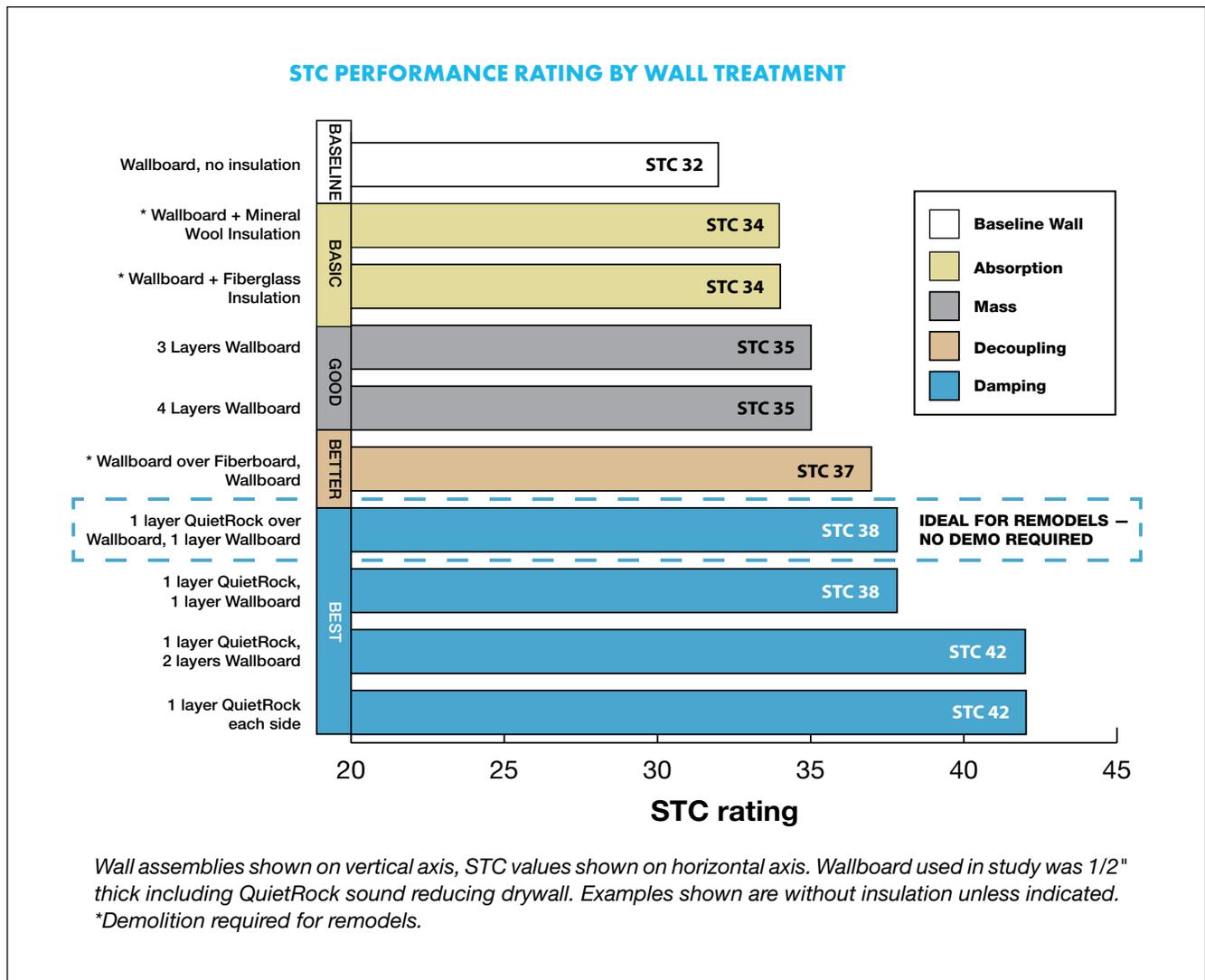
LABORATORY TESTS PERFORMED

PABCO Gypsum conducted a research study in May 2020 to evaluate the performance of common sound control methods used in homes. Sound Transmission Class (STC) is currently the most widely known metric for measuring sound isolation in buildings in North America. The STC rating was calculated from Sound Transmission Loss measurements that were conducted at a third-party accredited laboratory, North Orbit Acoustical Laboratory in Dyersville, Iowa. The higher the STC rating, the better, meaning less sound is transferring to the next room.

All laboratory tests were conducted on 2x4 single wood studs spaced 16" on-center, commonly used in the construction of homes. Nine different wall assembly configurations were tested in the laboratory. In addition, three types of insulation were used in each assembly: no insulation, R-13 fiberglass and 3" unfaced mineral wool.

TEST RESULTS

The STC results are shown below for the different wall treatments— absorption, mass, decoupling and damping. The greatest improvement in performance over the baseline wall occurred when damping was used—specifically the QuietRock panels added to the assembly. The addition of insulation (fiberglass or mineral wool) and more gypsum panels provided only minimal improvement in sound isolation with the decoupling treatment (fiberboard) providing slightly better performance than mass and absorption, but less than the damping treatments.





DEDICATION TO ACOUSTIC TESTING

PABCO Gypsum has conducted thousands of ASTM E90 Sound Transmission Loss (STL) tests with varying framing and panel configurations. This level of testing and analysis on building noise control is rare and reflects PABCO's commitment to supporting you and the building construction industry.

We're here to help you achieve a quieter home in the most efficient manner possible. With this focus on sound testing, we continually evaluate the various factors affecting sound transmission results and are sharing this information with you in this guide.

PABCO Gypsum produces a broad range of gypsum panels for residential and commercial applications including QuietRock, the first and most technically advanced sound reducing gypsum panel in the industry. QuietRock achieves high acoustic performance in one panel using less space, material and labor than conventional sound reduction alternatives. It installs and finishes just like any standard gypsum panel, requiring no special training to use.

For further assistance or technical support, contact QuietRock Technical Services.
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