

Installation Guide

# Rockfon® Plenum Barrier Board™

## Partition Extension Application (Vertical Orientation)



## System Overview

Rockfon Plenum Barrier Board is a semi-rigid, stone wool, board with a fiber-reinforced, aluminum foil facing adhered to one side. It is only available in a 24" x 48" x 1.5" thick size (actual). When Rockfon Plenum Barrier Board is installed above Rockfon suspended, stone wool, acoustical ceilings and over interior partitions that terminate at the underside of the suspended ceiling, or extend slightly above the ceiling, it increases the sound isolation and speech privacy between rooms. The ideal applications are when the suspended ceiling grid runs continuously over the tops of interior partitions or when premanufactured, demountable wall systems that only extend to the underside of the ceiling are used. Rockfon Plenum Barrier Board can also be used above site-built, gypsum board walls whether they stop at the underside of the ceiling or extend just above the ceiling. This installation guide covers only the application of Rockfon Plenum Barrier Board as a partition extension in a vertical orientation. If Rockfon Plenum Barrier Board is used as a ceiling panel backer in a horizontal orientation, refer to a separate installation guide.

## Storage and Handling

Rockfon Plenum Barrier Board should be stored on its original pallet and inside its original plastic stretch wrap in a dry, interior location. Protect the corners, edges and foil facing of the boards from damage as this can negatively affect acoustic performance after installation.

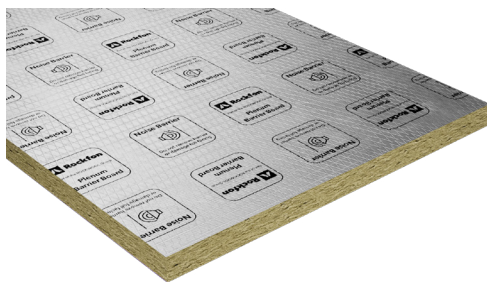
## Site Conditions

Rockfon Plenum Barrier Board does not require acclimatization. Stone wool is dimensionally stable and can be installed in hot or cold temperatures and humid conditions. Boards should not be unwrapped, depalletized or installed in areas where wet-work is still being performed.

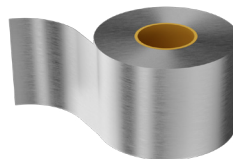
## Tools Required

- Sharp Knife with Minimum 2" Long Blade
- Metal Ruler (48" inch or longer preferred)
- Tape Measure
- Marker
- Drill Driver with Phillips Tip Bit
- Work Lights
- Table Saw (faster installation with better fit)
- Personal Protective Equipment

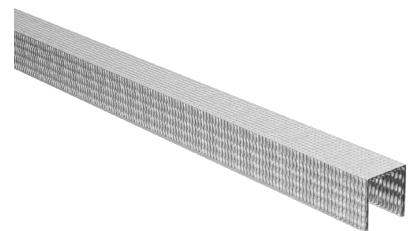
## System Components



Rockfon Plenum Barrier Board



2" wide metal tape



1-5/8" metal top track



Insulation Washers



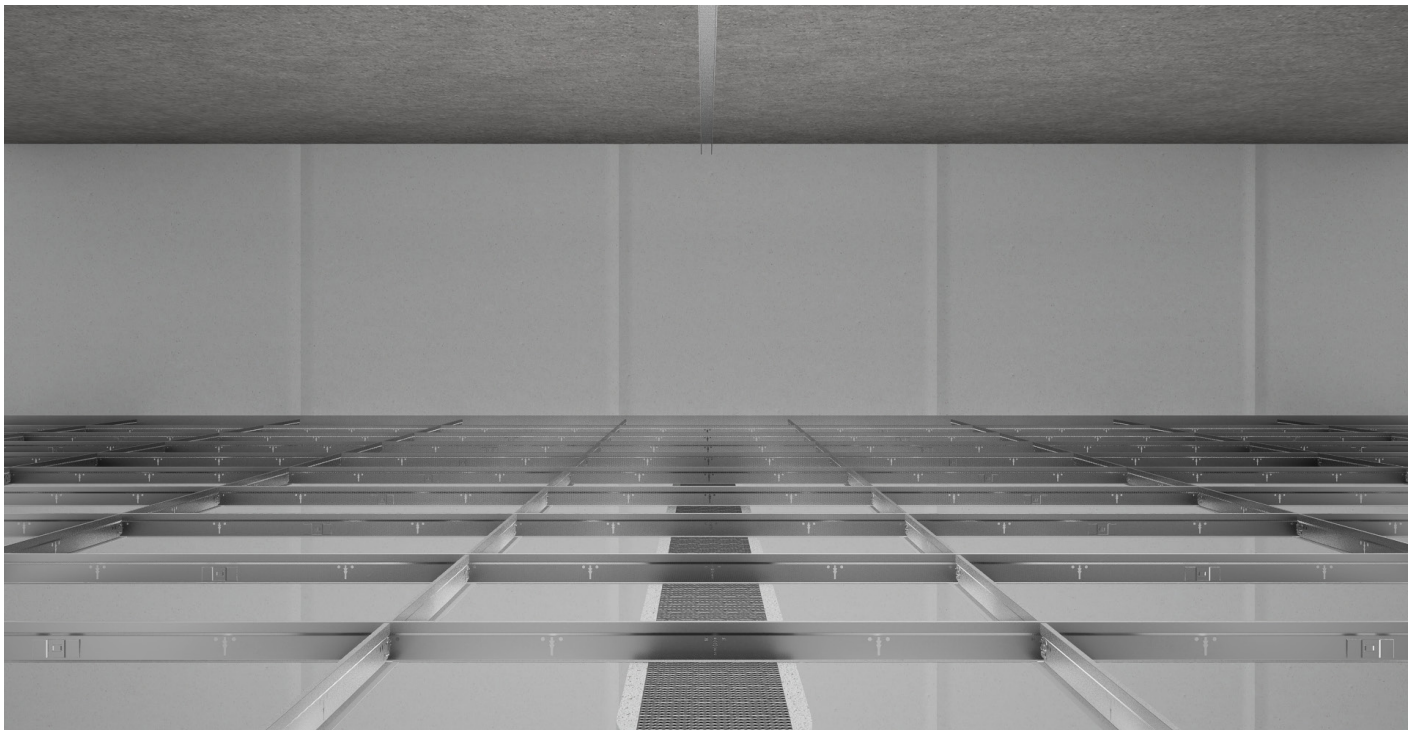
Self-tapping metal screws

## Pre-Installation Inspection

After removing the original stretch-wrap, inspect each board for damage before use. If any of the following conditions exist, either discard the board or set aside to cut smaller pieces from the undamaged portion.

- Foil facing has delaminated fully or partially
- Foil facing is punctured or torn
- Edges or corners are crushed, torn or otherwise damaged
- Stone wool surface is torn, gouged, crushed or otherwise damaged

Inspect the partitions above which the Plenum Barrier Board shall be located. With the associated contractor, ensure that the partitions are sufficiently complete and correct and no future work will damage or otherwise compromise the position and performance of the Plenum Barrier Board. Coordinate with the associated contractor that any wall bracing has been installed so that it does not interfere with the installation of the Plenum Barrier Board. Do not install plenum barriers until all conditions are met.



Partition and ceiling suspension grid ready for Rockfon Plenum Barrier Board installation. Ceiling panels not yet installed.

## Board Preparation

### Layout and Measuring

Determine the orientation of each Rockfon Plenum Barrier Board based on the plenum height and any structural or mechanical elements in the plenum so as to minimize waste and seams. Measure the height and width of the space to be fitted with a board. When marking the board to cut, oversize the board slightly in height and width (if applicable) by approximately 1/8". During installation, the board will be compressed slightly to prevent gaps. Mark each board where it needs to be cut.

### Cutting

Use a sharp knife with a 2" long (minimum) blade to cut the boards. Several passes with a gentle sawing motion and followed by a final, straight pass of the knife will result in the best edge. Ensure that the knife is held perpendicular to the board surface so that the edge is not angled in one direction or the other. **Use of a table saw whenever possible is strongly recommended to speed up board preparation and to ensure ninety-degree cuts.** Avoid any cutting technique that tears the foil along the cut line or tears the stone wool core of the boards.

## Support

Rockfon Plenum Barrier Board can be held in place with a combination of techniques including mechanical fastening to minimal metal, framing, friction-fitting against surfaces and taping to adjacent boards. Installation without some type of mechanical fastening through the Rockfon Plenum Barrier Board and into the supporting metal, framing behind is not recommended.

### Refer to the architectural drawings and specifications for the intended support method.

If the support method is not indicated in the architectural documents, consider any of the options below. How the Plenum Barrier Board is supported in place does not affect the acoustic performance. Options beyond those listed in this guide may also be used.

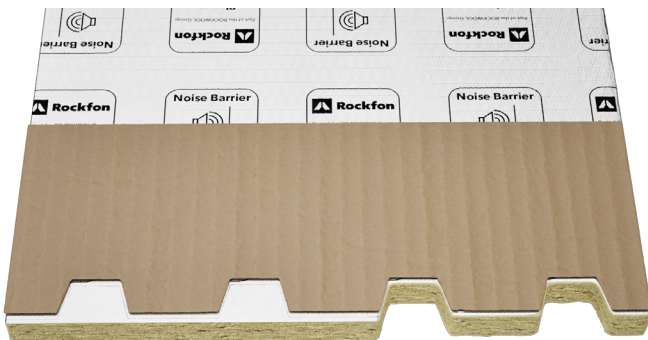
### Top Support

In most cases, the top edge of the Rockfon Plenum Barrier Board is screwed into either a standard 1-5/8" wide metal wall track (single-layer plenum barrier or double-layer plenum barrier) or a 2" wide metal angle (single-layer plenum barrier only) that has been centered and mechanically fastened to the underside of the floor or roof deck above the partition.



Top of single-layer (left) and double-layer (right) Rockfon Plenum Barrier Board screwed into metal framing behind.

When the floor or roof deck overhead is a corrugated metal roof deck instead of flat, the Plenum Barrier Board shall be castle-cut along the top edge to fill the flutes of the metal deck. Use 1/8" thick medium density fiberboard (MDF), cardboard or similar to create a template of the metal deck profile. Use that template to mark the deck profile along the top of the Rockfon Plenum Barrier Board before cutting to shape.



Use of a template to mark and cut the top edge of Rockfon Plenum Barrier Board.

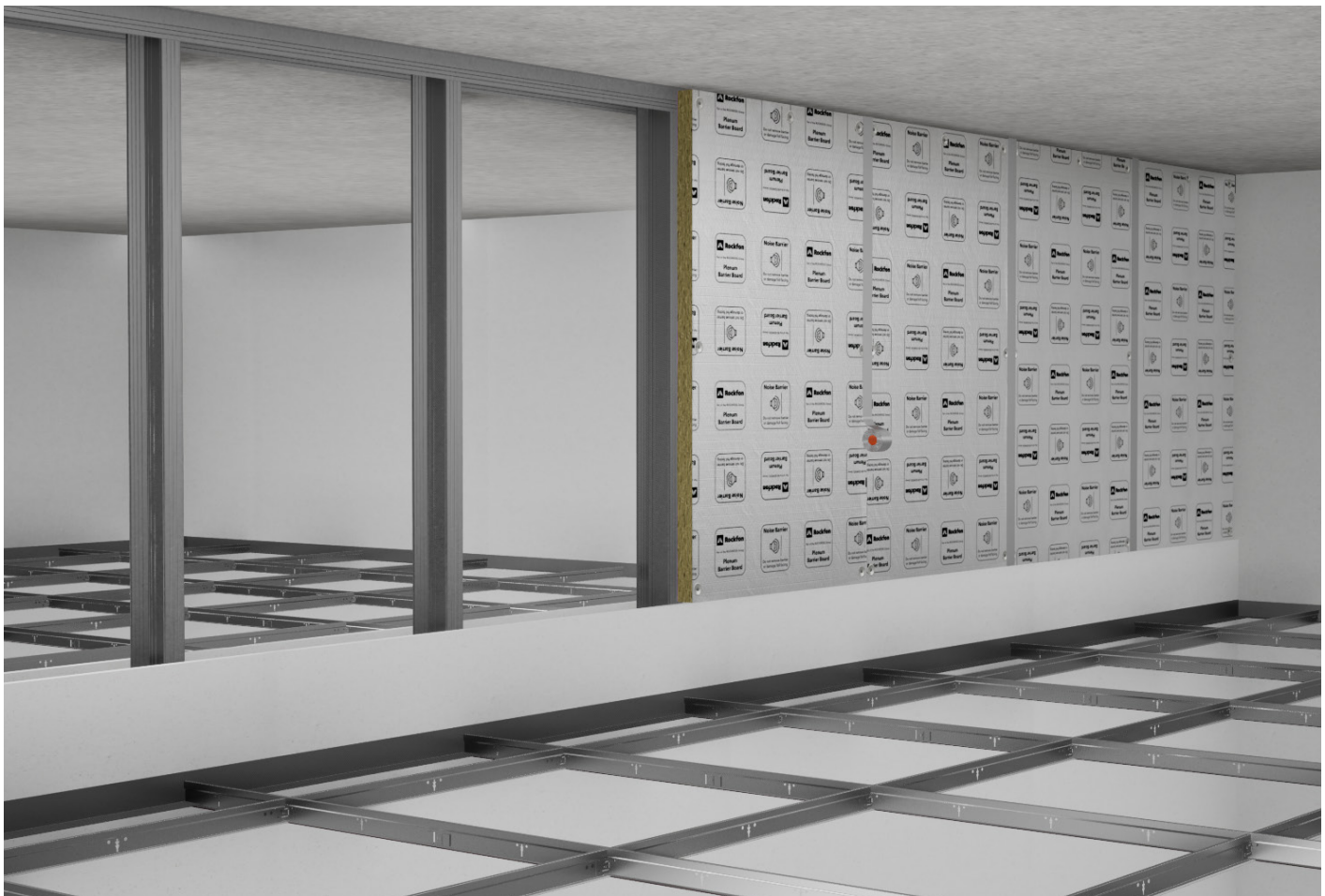


Top of Rockfon Plenum Barrier Board castle-cut to fill the flutes of the metal deck.

## Full Height Studs

### Plenum Height < 48"

If the metal studs of the partition extend full height and the gypsum board and cavity insulation do not, additional metal framing to support the Rockfon Plenum Barrier Board is not needed. Rockfon Plenum Barrier Board can be screwed into the top track, regardless of the stud spacing. If the stud spacing is 24" on-center, the Rockfon Plenum Barrier Board can be oriented so the 24" long edges are either the top/bottom or left/right sides. If the stud spacing is 16" on-center, the Rockfon Plenum Barrier Board should be oriented so the 48" long edges are the top/bottom and the 24" long edges are the left/right sides. Stud spacing and plenum height should be considered to ensure proper support with screws along the edges and to minimize waste. Additional screws should be placed every 20"-24" along the left and right sides into the metal studs behind.



Rockfon Plenum Barrier Board screwed directly to metal studs of partition when they extend full height to deck overhead - single-layer system.



*Plenum Barrier Board screwed directly to metal studs of partition when they extend full height to deck overhead - double-layer system.*

### **Plenum Height > 48"**

If the plenum is taller than 48", multiple pieces of Rockfon Plenum Barrier Board will need to be used to cover the entire height from top of partition to underside of deck above.



*Tall plenums require multiple pieces of Plenum Barrier Board stacked vertically - single-layer system.*



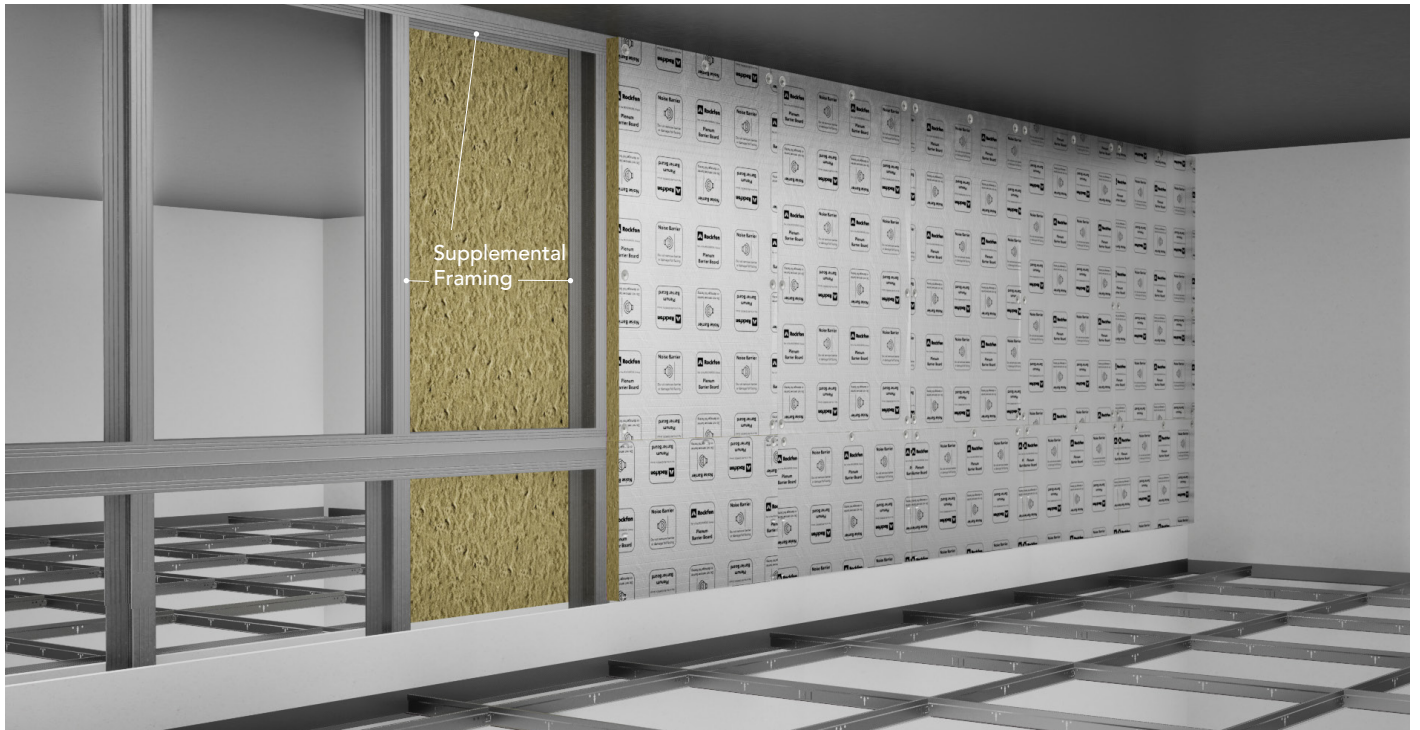
Tall plenums require multiple pieces of Plenum Barrier Board stacked vertically - double-layer system.

### Supplemental Framing (Plenums > 48")

When the plenum height is taller than 48" and the metal studs of the partitions do not extend full height to the deck overhead, supplemental framing must be installed to support the Rockfon Plenum Barrier Board. The vertical members of the supplemental framing can be spaced 24" or 48" apart on-center depending on plenum height and desired orientation of the Rockfon Plenum Barrier Board to minimize waste.



Tall plenums (>48") require that additional metal framing be installed to support the Plenum Barrier Board – single-layer system.

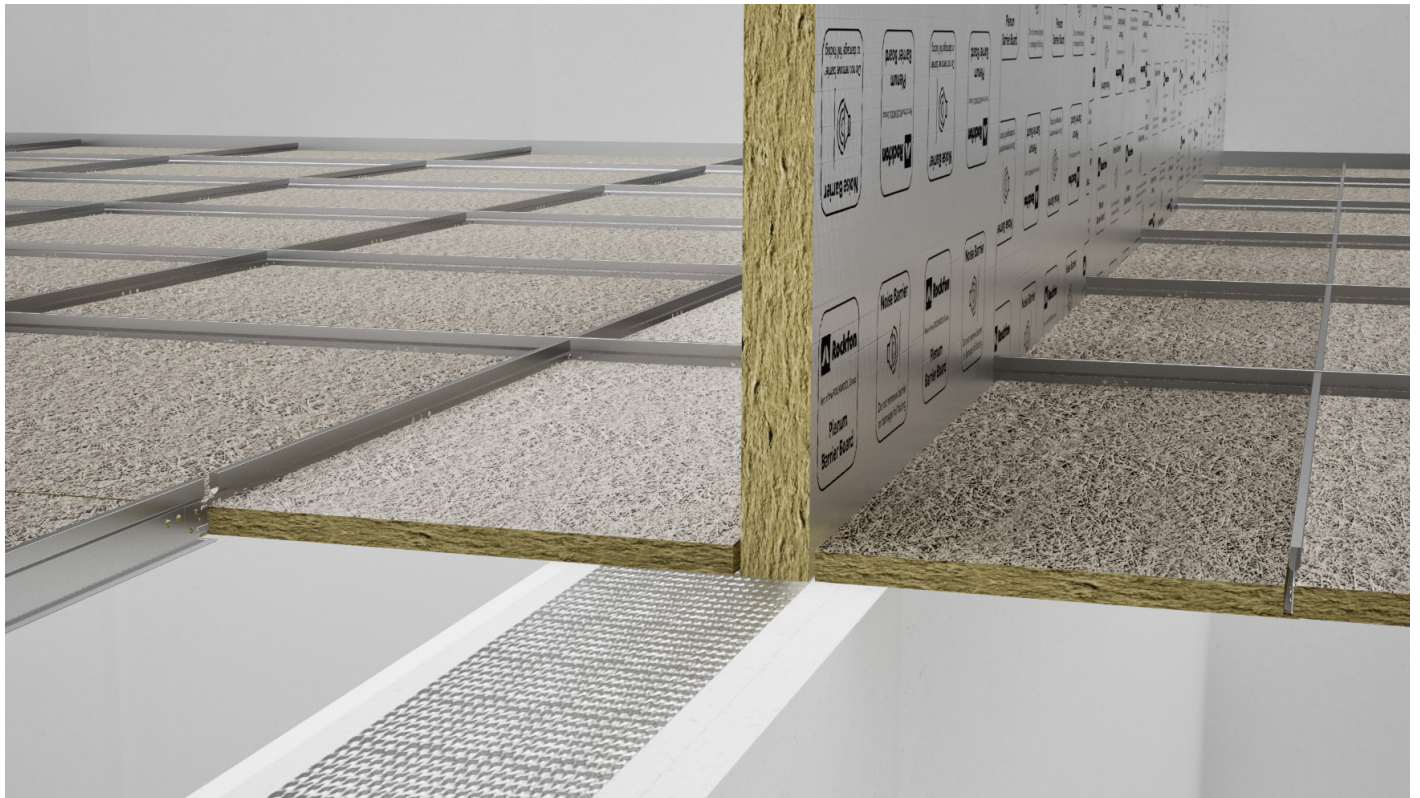


Tall plenums (>48") require that additional metal framing be installed to support the Plenum Barrier Board – single-layer system double-layer system.

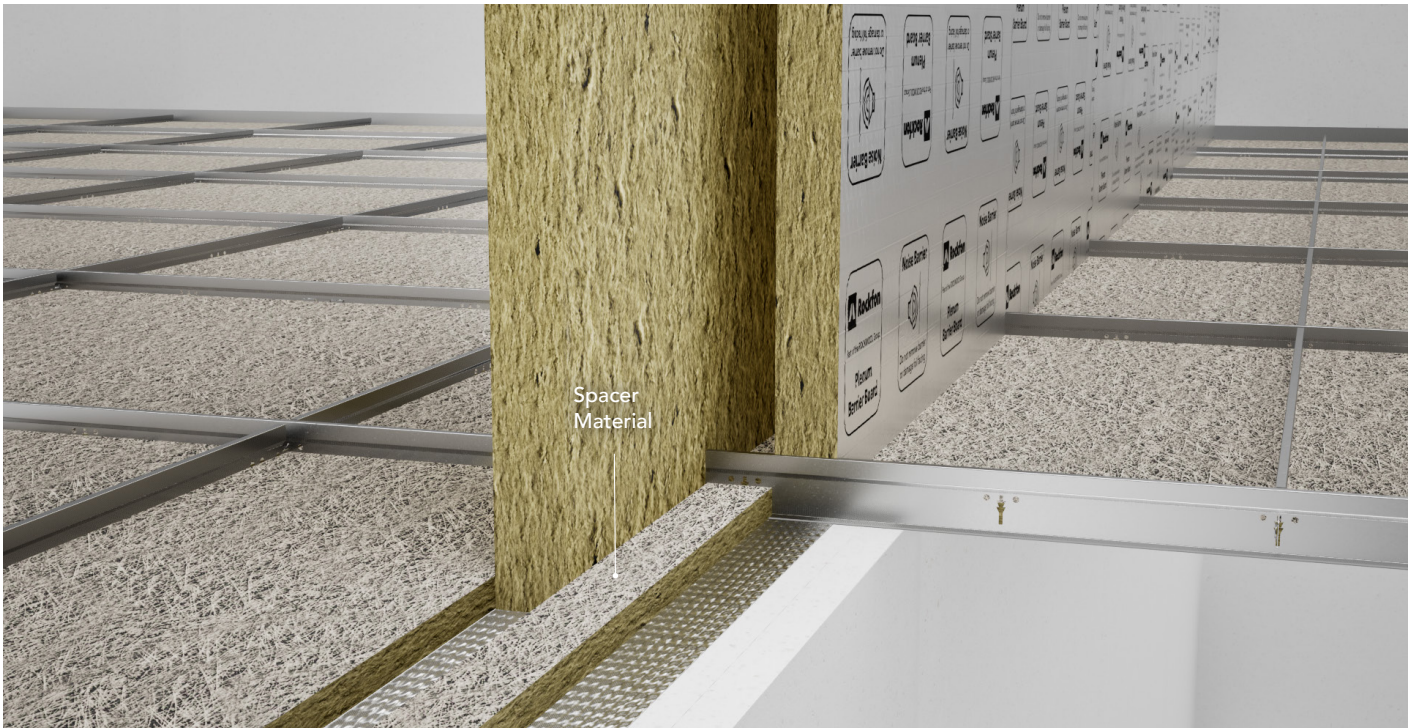
### Bottom Support

#### When the Ceiling Grid Extends Over the Top of the Interior Partition

The bottom edge of the Rockfon Plenum Barrier Board is only held in place with a friction fit along the top track of the partition and around or in between the bulb of the grid members. No metal framing or mechanical fastening is required.



Bottom of Plenum Barrier Board installed with a ceiling grid extending contiguously over the tops of the partitions – single-layer system.



Bottom of Rockfon Plenum Barrier Board installed with a ceiling grid extending contiguously over the tops of the partitions – double-layer.

Ideally, the 24" wide Rockfon Plenum Barrier Board is aligned with the 24" wide grid spacing so the boards simply push down between the grid bulbs without needing any cutting. However, when a Rockfon Plenum Barrier Board is not aligned with the grid module, cut a 1.5" tall slice in the bottom edge to allow the Rockfon Plenum Barrier Board to slide down over the grid bulb.



Plenum Barrier Board aligned with grid modules.



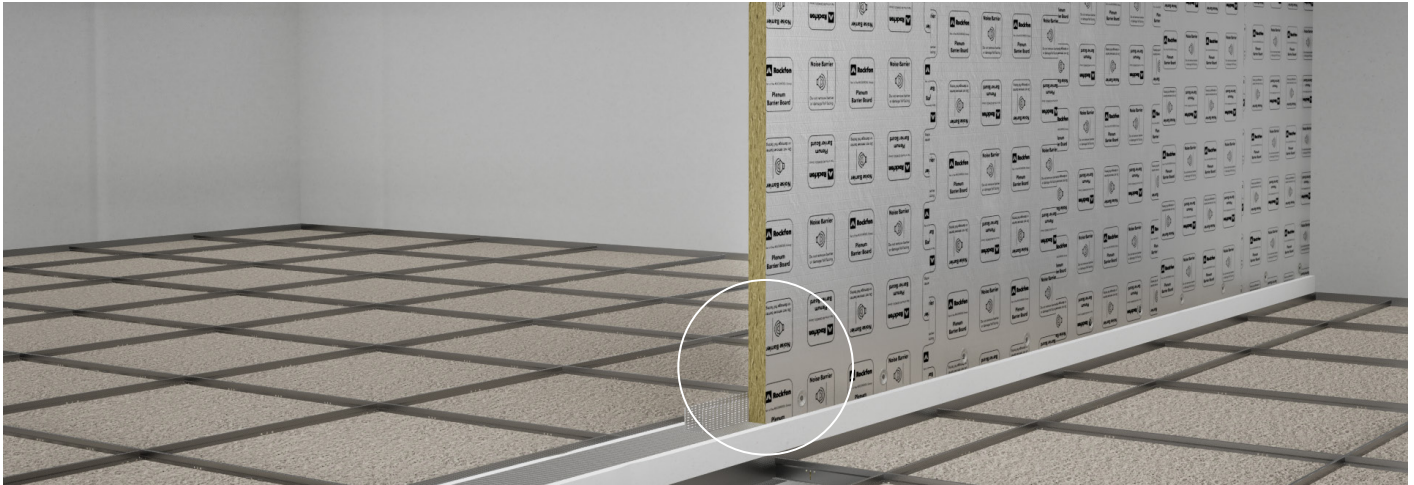
Rockfon Plenum Barrier Board misaligned with 1.5" slice in bottom edge to accommodate the grid bulb (see below).



1.5" tall slice in bottom edge of the Rockfon Plenum Barrier Board to accommodate the grid bulb.

### When the Interior Partition Interrupts the Ceiling Grid and Extends Slightly Above the Height of the Ceiling

A standard 1-5/8" wide metal wall track (double-layer plenum barrier or single-layer plenum barrier) or a 2" wide metal angle (single-layer plenum barrier only) can be screwed to the top track of the interior partition. The Rockfon Plenum Barrier Boards can be mechanically fastened along the bottom edge similar to the top edge.



Partitions extending above the ceiling system require mechanical fastening along the bottom edge - single-layer system.



Partitions extending above the ceiling system require mechanical fastening along the bottom edge - double-layer system.

## Board Installation

### Placement

For single-layer Rockfon Plenum Barrier Board applications, the orientation of the foil facing, one way or the other, does not typically matter. For double-layer applications, the foil facing of both layers should be oriented outwards into the open plenum, not inward inside the interstitial space between the layers. Typically, while holding the Rockfon Plenum Barrier Board at an angle, place the bottom edge in place along the top of the wall first. Then using pressure to compress the board both vertically and laterally, press the top of the board into place against the metal support. It should require effort to press the board into place. If the board simply tilts in with no effort and feels loose, then the board was cut too short. If the board folds or crushes or will not tilt into place, the board was cut too long. Adjust the measurement and recut another piece.

### Fastening

Use a drill driver with a Phillips tip bit to drive self-tapping metal screws through the top edge of the Rockfon Plenum Barrier Board and into the metal support (top track or angle) behind it. Depending on the board orientation, use two screws along the 24" edge if it is the top edge or four screws along the 48" edge if it is the top edge. Use wide insulation washers so that screws do not pull through the Rockfon Plenum Barrier Board. Exact size is not important.



Use insulation washer and self-tapping metal screw to fasten Plenum Barrier Board to metal framing.

### Penetrations

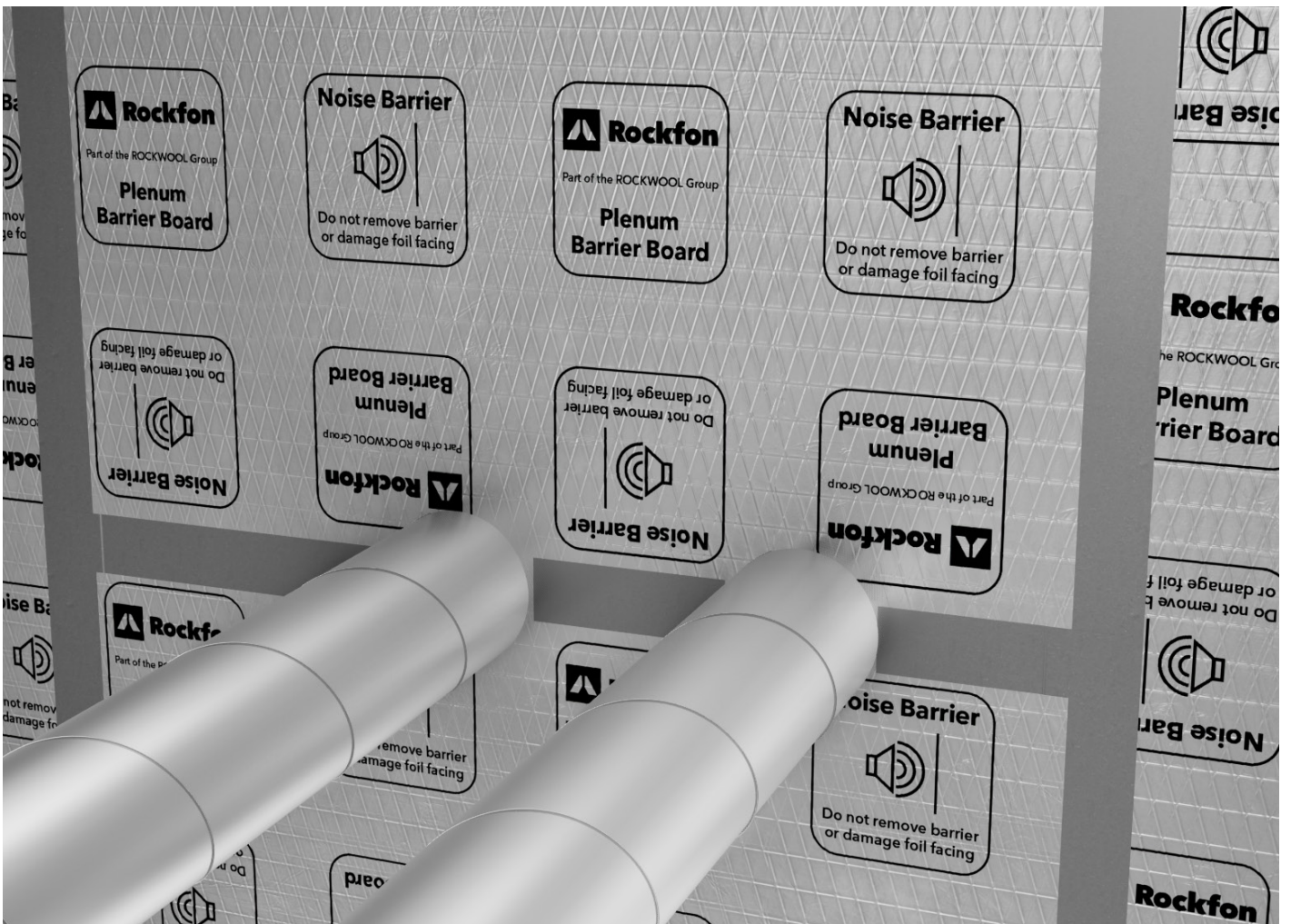
When ducts, pipes, conduits or other building or system elements must penetrate through the Rockfon Plenum Barrier Board, divide the Rockfon Plenum Barrier Board into two pieces along the centerline of the penetrating element. Install the top piece above the penetrating element and then the bottom piece below it (refer to taping instructions also).



Rectangular duct penetration through the Rockfon Plenum Barrier Board.



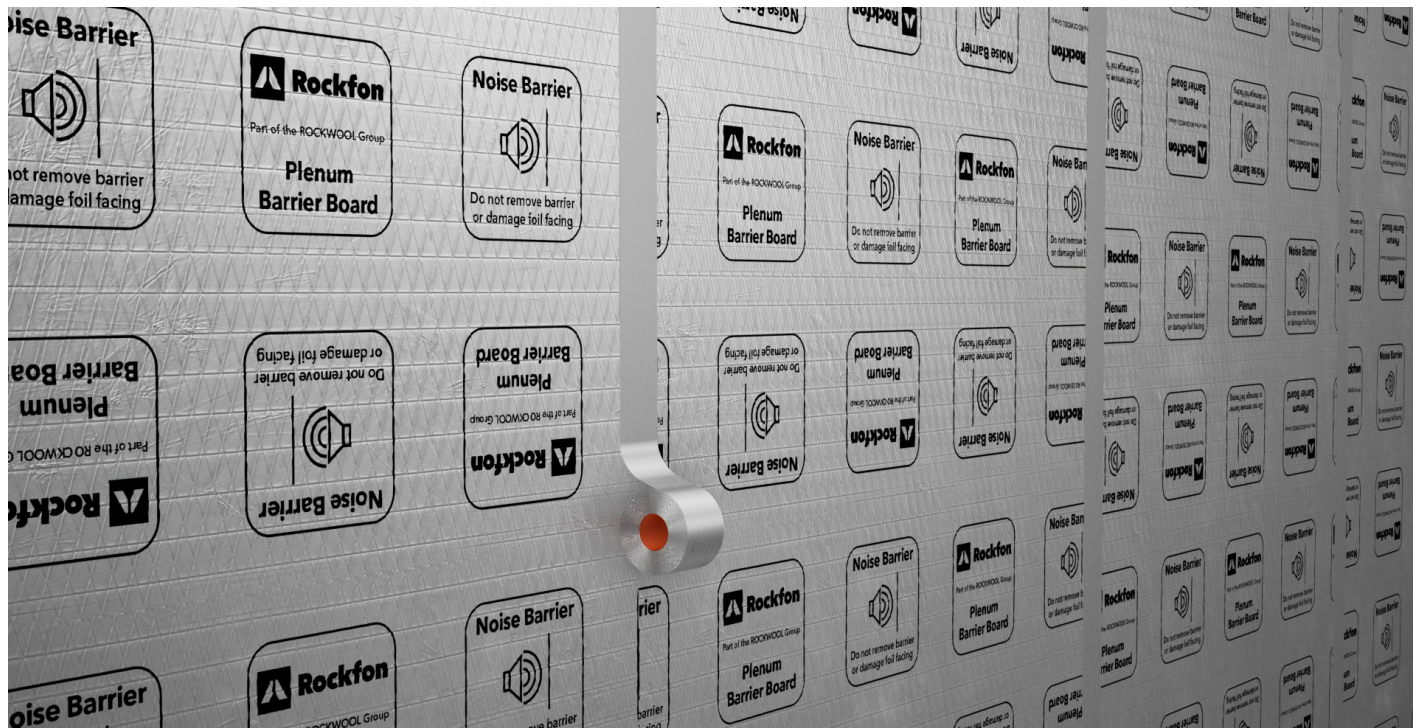
Multiple pipe or conduit penetrations through the Rockfon Plenum Barrier Board.



Multiple pipes or conduits penetrating through the Rockfon Plenum Barrier Board.

## Taping

Once the boards are installed, apply 2" wide, metal, tape along all butt joints (horizontal and vertical) between two adjacent pieces of Rockfon Plenum Barrier Board on the foil-faced side only. Taping the perimeter of the plenum barrier along the deck overhead and wall below is not required, but can be done if desired.



Tape should be applied anywhere two pieces of foil-faced Plenum Barrier Board abut one another.

## Offset Seams

When installing a double-layer plenum barrier, with one layer of Rockfon Plenum Barrier Board on each side of the 1-5/8" metal track, offset the vertical seams by minimum 12". This will require that a 1-1/2" cut be made in the bottom edge of the board so that it slides down over the bulb of the grid and rests on the top track of the partition (see 'Bottom Support' section).



## Post-Installation Inspection

After installation of the Rockfon Plenum Barrier Board, use bright work lights on one side of the plenum barrier and darken the room on the other side. On the dark side, inspect all seams and penetrations through the plenum barrier for light transmitting through the plenum barrier. If light is seen, either replace the board or use acoustical caulk to seal the gap or crack only where the light is shining through. Inspect again. Installation is not correct or complete if light can be seen shining through the plenum barrier in any location.