QuietRock® 530RF Installation Instructions

Instructions for installing QuietRF® System in the construction of high security environments such as Sensitive Compartmented Information Facilities (SCIF) and government offices for both radio frequency (RF) and acoustic frequency (AF) transmission mitigation.

Required Materials and Recommended Tools

QuietRock® Materials
QuietRock® 530RF Constrained-Layer Damped Gypsum Panel
QuietSeam® RF Conductive Compound (custom ordered due to short shelf life of approx. 5 days)
3/4" and 1-3/4" QuietRF® Shielding Tape, Electrically Conductive Tape
QuietPutty®
QuietSeal® Pro

Other Materials
RF Conductive Foil
Black phosphate fine thread drywall screws (min. 1-1/4" or per fire-resistance requirements)
Setting-type joint compound (hot mud, first layer on seams only)
Regular joint compound (for screw heads and additional finishing layers only)
Drywall tape

Circular Saw
7-1/4" Steel Cutting Carbide Tipped Blade

Jig Saw
Variable Speed Jigsaw
24 tpi Carbide Blades 3-1/8"or 2-3/8"

Cutout Tool
Drywall Router
1/4" Solid Carbide Bit

Vacuum System
Wet/Dry Vacuum suitable for project size used for collecting dust
Vacuum attachments for tools

Doors, Windows, Outlets and Ductwork
Follow manufacturer's and sponsoring agency's directions to maintain RF shielding.

Installation Procedures
Walls and Joints

1. **Apply QuietPutty® to outside of flush mounted boxes.** (Fig. 1)
2. **Apply a 1/4" bead of QuietSeal® Pro along perimeter of wall frame, prior to application of foil per ASTM C919 where STC is a requirement.**
3. **Apply RF foil (as specified by sponsoring agency) to studs prior to installing QuietRock® 530RF.** (Fig. 2)
   a. At or above ground level Wall to Floor Connections: RF foil must be applied at the studs and rolled out onto the floor 39" (approx. 1m).
   b. Above ground level Wall to Ceiling connections: RF foil must be applied at the studs and rolled out onto the ceiling 18" (0.5m).
4. **Install QuietRock® 530RF**
   - Orient the panels so that the conductive metal trim is installed on the finished side of the board.
   - The edges of the panel at the perimeter must have conductive metal trim exposed.
   - If the panels need to be trimmed, see directions below.
   - For proper installation at the corners (Figs. 4-7).
   - For trimming and rebuilding factory edge see page 5.
5. **Attach panels** (Fig. 3)
   - The panels must be screwed into the metal studs.
   - Install screws every 8 inches at the edge of the panel along the studs and every 12 inches in the field (center of the panel) along the studs or per fire-resistance requirements.

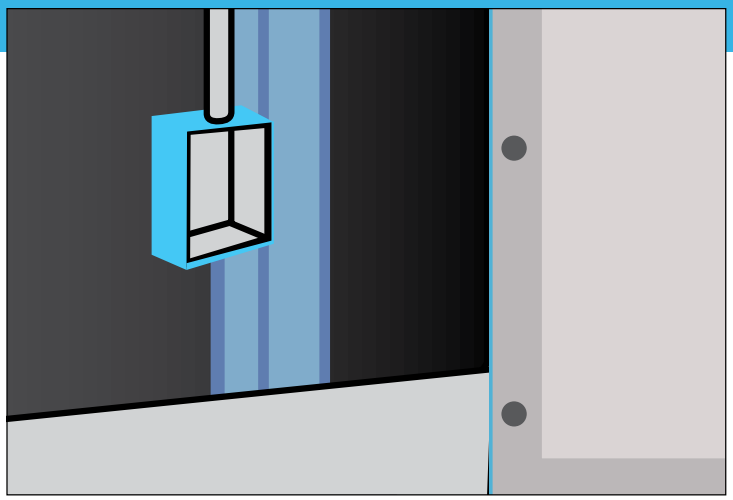


Fig. 1: QuietPutty® wrapped around electrical box

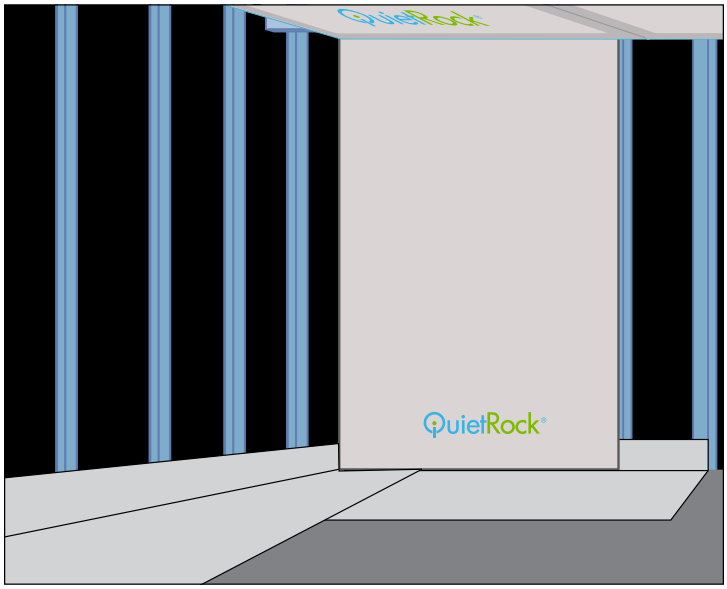


Fig. 2: Application of foil to framing

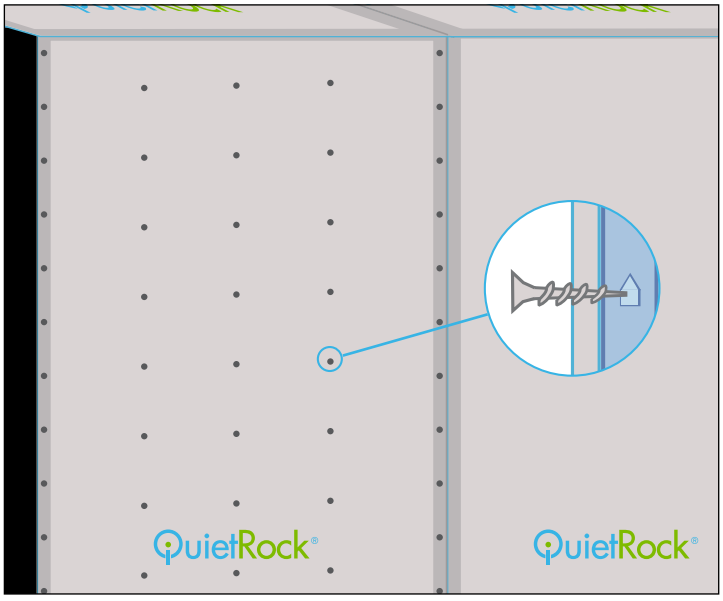


Fig. 3: Screw pattern on wall partition

Proper Installation at Corners

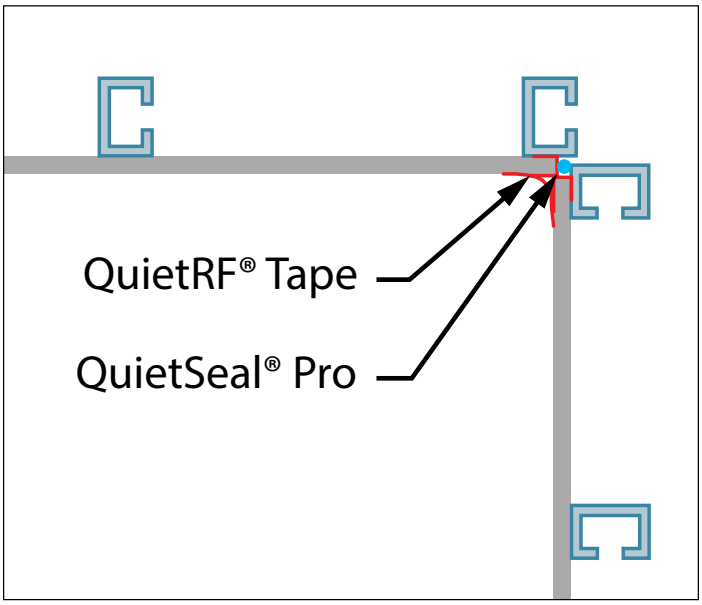


Fig. 4: Inside corner QuietRF® Shielding Tape application

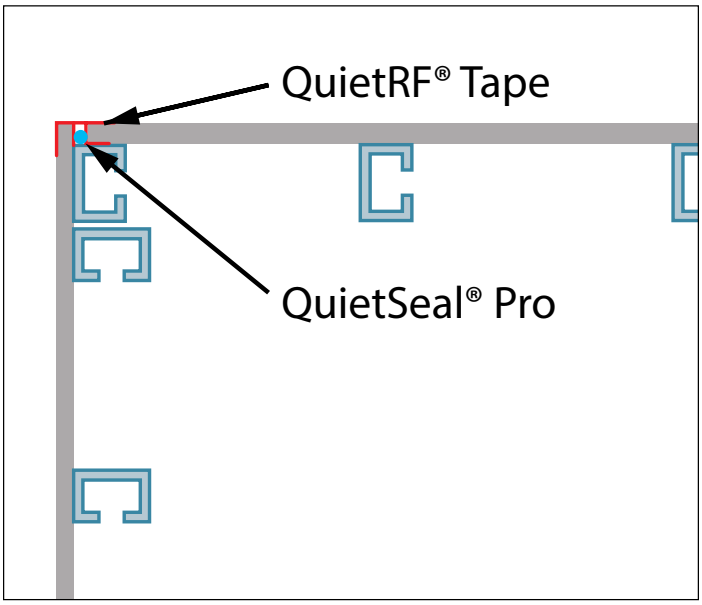


Fig. 5: Outside corner QuietRF® Shielding Tape application

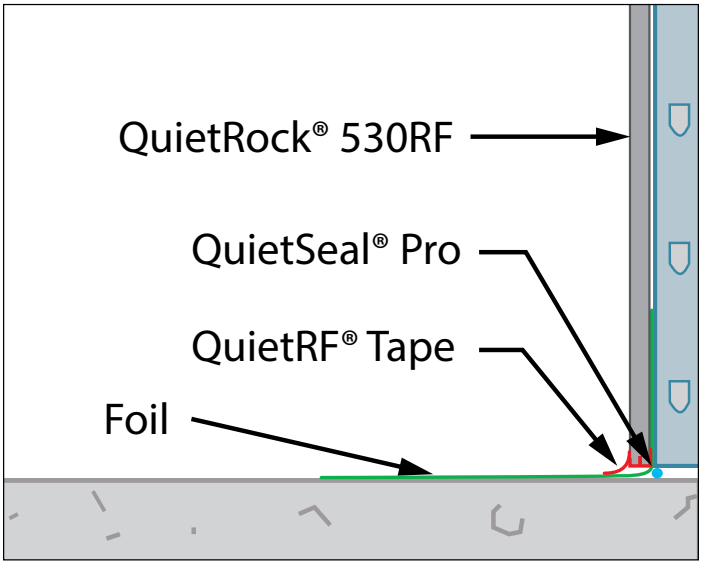


Fig. 6: Inside Corner QuietRF® Shielding Tape application at floor

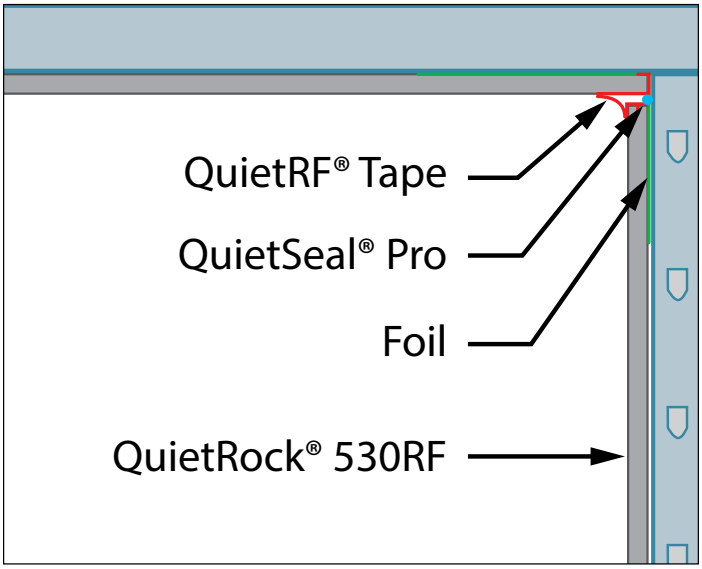


Fig. 7: Inside Corner QuietRF® Shielding Tape application at ceiling

Walls and Joints (continued)

5. **Tape the seams** (Fig. 8)
   - Apply 3/4" QuietRF® Shielding Tape connecting adjacent QuietRock® 530RF panels.
   - Make sure that the applied tape overlaps the conductive metal trim on both the adjacent panels.

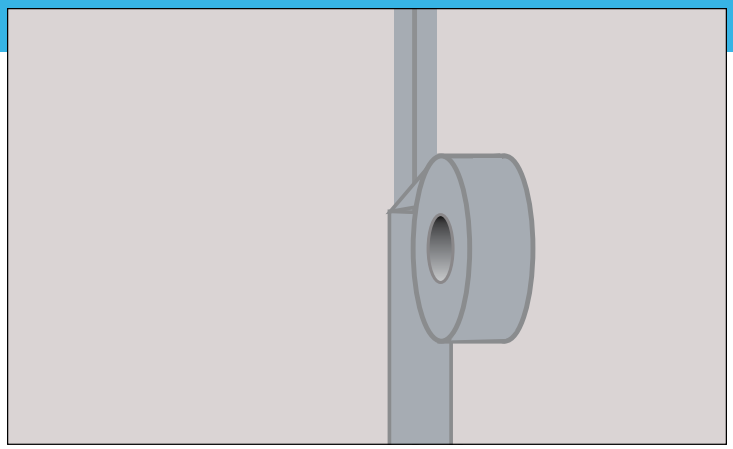


Fig. 8: 3/4" QuietRF® Shielding Tape application to seams

6. **Seal all penetrations (plumbing, electrical and mechanical)** (Figs. 9 -10)
   - Outlet boxes must be metal. Surface mounting is preferred.
   - If flush mounting, use 1-3/4" QuietRF® Shielding Tape and QuietSeam® RF to rebuild the factory edge, ensuring metal-to metal contact, and eliminating all pin holes and voids. It is important to have 100% metal-to-metal contact. After cutting the access hole in the QuietRock® 530RF panel, apply QuietSeam® RF with putty knife around the cut edge of the panel edge using the minimum amount required to ensure connectivity.
   - 1-3/4" QuietRF® Shielding Tape should be used to attach to the metal inside the box, extended over the width of the rebuilt edge QuietRock® 530RF and adhered to the face of the drywall panel. Overlap onto the face of the board should be minimal—only enough to adhere the tape so it remains secure over the cut edge of the panel. Excessive overlap could result in wall finish issues.

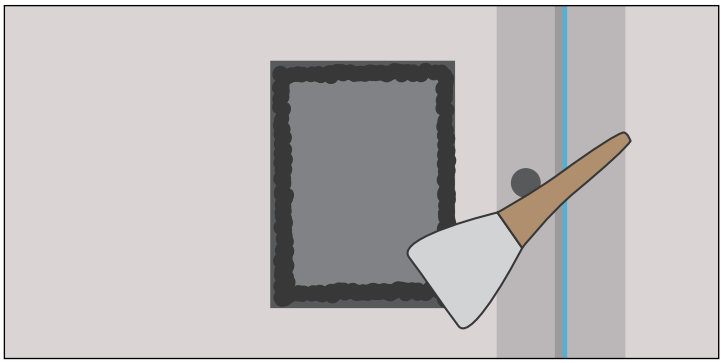


Fig. 9: QuietSeam® RF application to cut edge of panel

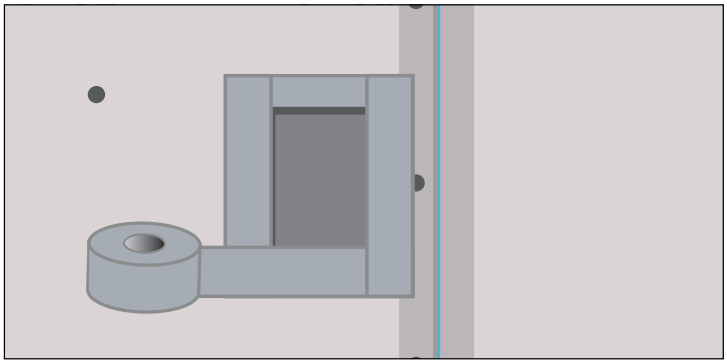


Fig. 10: Application of QuietRF® Shielding Tape to cutouts

Trim Panels and Rebuild Factory Edge

When installing less than a full panel, follow the process outlined below to recreate the factory edge to maintain assembly connectivity.

1. **Trim the panel to size** (Fig. 11)
   - Use a saw to trim the panel to proper size.
   - Refer to the Materials and Recommended Tools section at the beginning of this guide for suggested blades and saws.

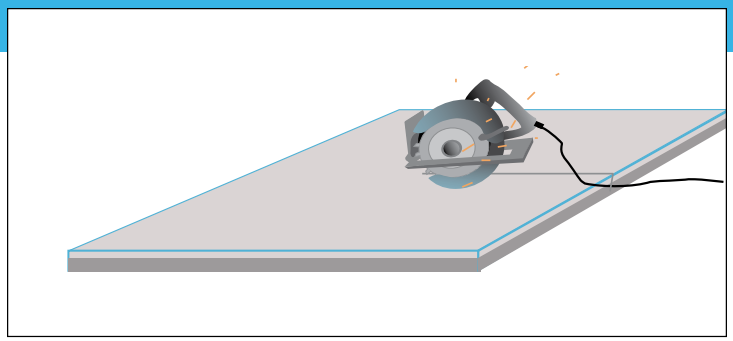


Fig. 11: Cutting QuietRock® 530RF panel with circular saw

2. **Orient the panel** (Fig. 12)
   - Place the panel down with conductive metal trim facing up.

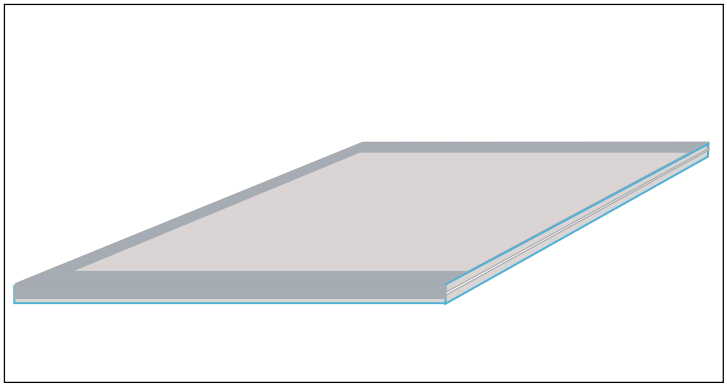


Fig. 12: Trimmed QuietRock® 530RF facing up

3. **Apply conductive shielding tape to cut edge** (Fig. 13)
   - Apply 1-3/4" QuietRF® Shielding Tape 1/2"-3/4" from cut edge on panel face and allow extra tape material to hang off the side.

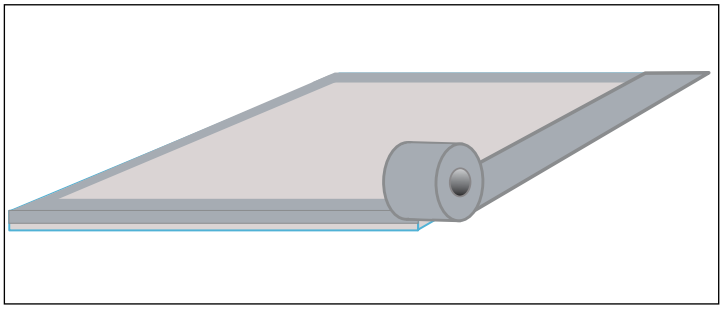


Fig. 13: Apply 1-3/4" QuietRF® tape to cut edge of panel

4. **Turn panel over** (Fig. 14)
   - Flip panel over so that the metal tape is now sticky side up.

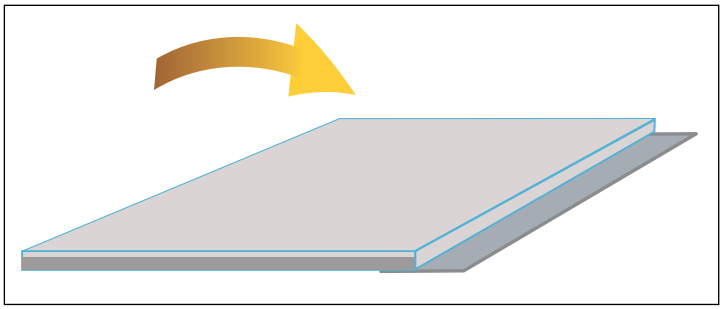


Fig. 14: Flip taped QuietRock® 530 panel over

Trim Panels and Rebuild Factory Edge (Continued)

5. Apply QuietSeam® RF to panel edge (Fig. 15)
   - Spread QuietSeam® RF with a putty knife to the cut panel edge.
   - Make sure to use enough material to coat the exposed metal edge in the panel's core.

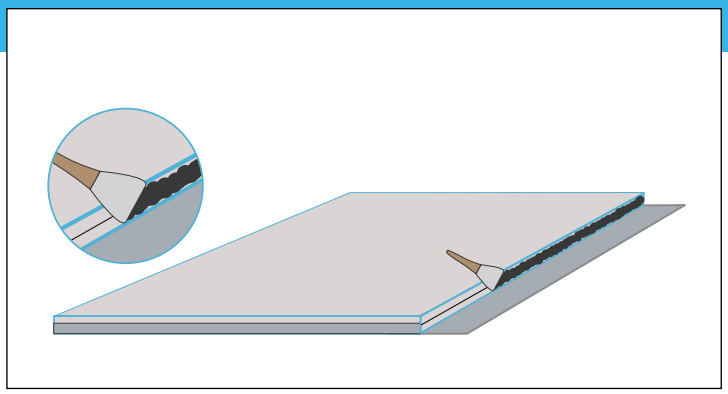


Fig. 15: Application of QuietSeam® RF to cut edge of panel

6. Fold The tape over to rebuild factory edge (Fig. 16)
   - Fold the remaining QuietRF® Shielding Tape over the coated edge, ensuring maximum contact between the metal core, QuietSeam® RF compound and tape.

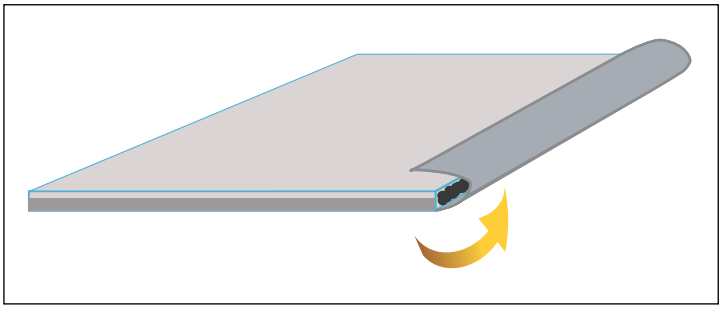


Fig. 16: Folding tape over to rebuild factory edge

7. Inspect rebuilt edge (Fig. 17)
   - The final trimmed panel should have QuietSeam® RF held in place with the metal tape.
   - Clean up excess QuietSeam® RF material as necessary.

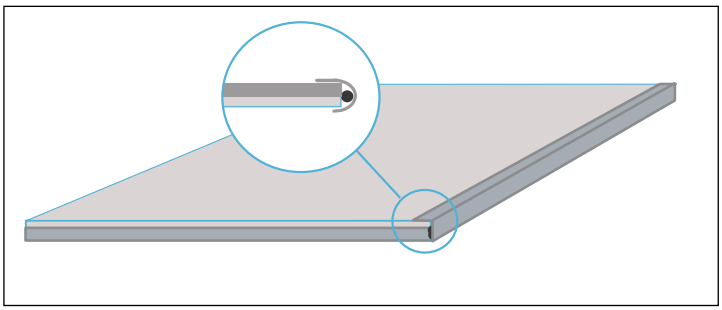
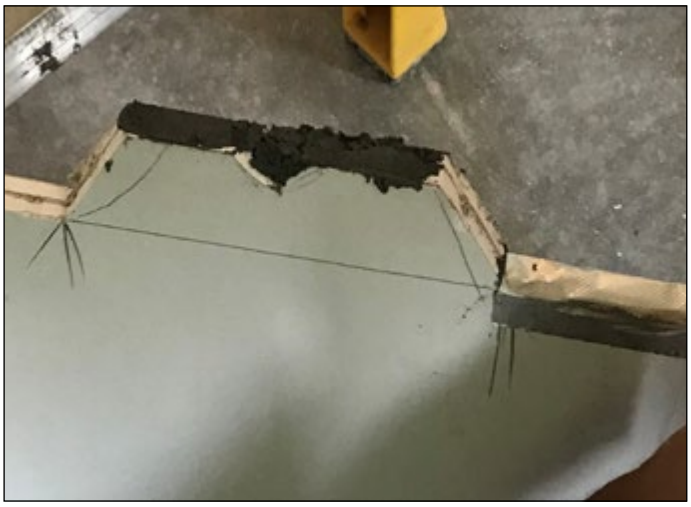


Fig. 17: Inspecting rebuilt edge of cut panel



QuietSeam® RF applied to cut edge



QuietRF® Shielding Tape application over QuietSeam® RF

Finishing The Board

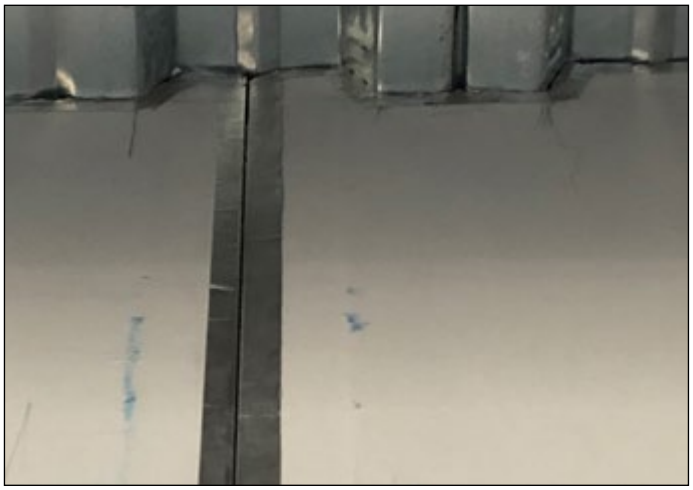
- The taping coat on this board requires a setting-type joint compound. After the taping coat, finish the board with joint compound as you would any other drywall product. See GA 214 Application for Finishing Gypsum Board Products for additional details.

Notes

Use normal care and precaution when working with gypsum products. See GA 801 Handling and Storage of Gypsum Panels.

- Clean up with soap and water.
- Follow all OSHA guidelines when completing any construction project.
- When not actively using QuietSeam® RF, make sure to keep bucket sealed. The top of the compound may dry out over time in storage. Before using, dispose of any hardened material and mix the remaining material thoroughly.
- Dispose of excess products in the same responsible manner as you would any building material.
- Refer to Safety Data Sheets available from Memtech Acoustics at 248.289.1123.
- Refer to sponsoring agency's Certified TEMPEST Testing Authority (CTTA) for grounding requirements.
- All QuietRock® panels are manufactured under one or more of the following US Patents: 7,181,891, 7,798,287 and 7,883,763.

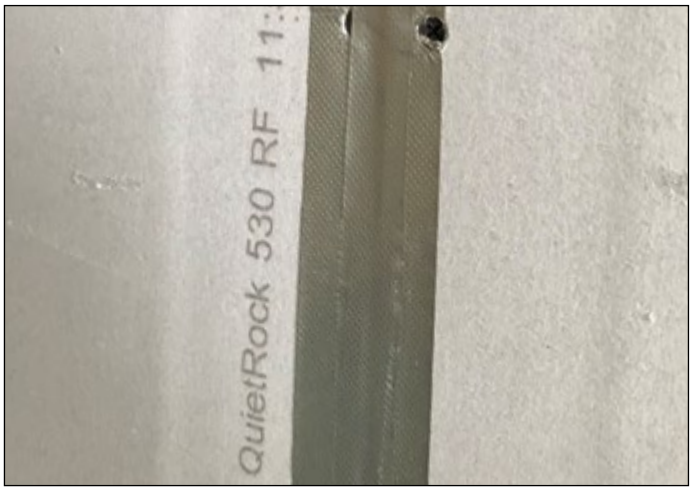
Installation Photo Gallery



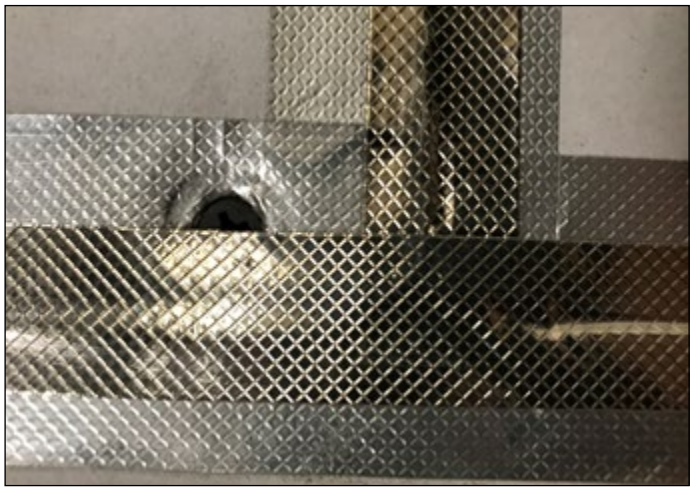
QuietRock® 530RF installed at fluted deck



Applying QuietRF® Shielding Tape to seam



QuietRF® Shielding Tape applied to seam



QuietRF® Shielding Tape at intersection



QuietRF® Shielding Tape around conduit



Finished QuietRock® 530RF at corner and floor