SoundSmart
SOUNDPROOFING PANEL

INSTALLATION, STORAGE, AND HANDLING GUIDE

STC 59 INTERIOR WALL ASSEMBLY

BUILDING PRODUCTS OF CANADA CORP.
SINCE 1905

Building Products of Canada Corp. | 9510 St-Patrick St., Lasalle, QC. H8R 1R9 | bpcan.com

FIELD STORAGE AND HANDLING

SoundSmart panels should be stored inside, on a flat surface, under suitable conditions to ensure that they are not damaged. If left outside, ensure panels are laid on a flat surface, at a minimum of 100 mm (4 in) off the ground and are covered and well protected from the elements.

> ***NEVER LEAVE SOUNDSMART PANELS OUTSIDE, UNPROTECTED.***

Panels with broken edges or punctures should not be installed. Carefully trim them to remove the damaged parts and reuse them in areas requiring smaller panels.

FASTENING - BEST PRACTICE

Use screws to fasten **SoundSmart** panels. ***Nails and staples are not recommended for this wall assembly***.

- Install **SoundSmart** panels vertically starting at a corner or at the end of a wall band, with aluminum membrane facing the noise source.
- Fasten panels to framing members starting from the center of the sheet toward edges.
- Drive screw head flush with surface, do not countersink.
- To benefit from the decoupling effect of a resilient metal channel, make sure that the screws used to fasten the panels to the resilient channel do not make contact with the wall studs or wall framing.

INSTALLATION

The following installation instructions can provide an STC rating of 59, as validated by the National Research Council of Canada (NRC - CNRC).

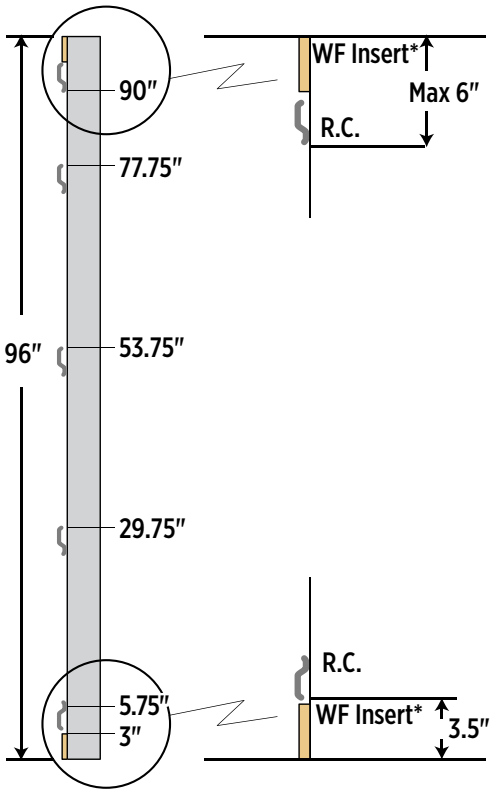
1. Wall framing

Build a wall partition using 38 mm x 152 mm (2 in x 6 in) 25 ga. steel studs, spaced 610 mm (24 in) on-center.

2. Resilient channels

Starting from the side of the partition where the noise originates, horizontally attach 25 ga. lightweight resilient channels onto the steel frame. Set channels 610 mm (24 in) apart starting 89 mm (3 ½ in) from the bottom of the wall up to no more than 150 mm (6 in) from the top of the wall. Using 32 mm (1 ¼ in) Type-S screws, secure resilient channel with fixation holes downward and large flange up (except for the bottom one which should be inverted).

RESILIENT CHANNEL SPACING

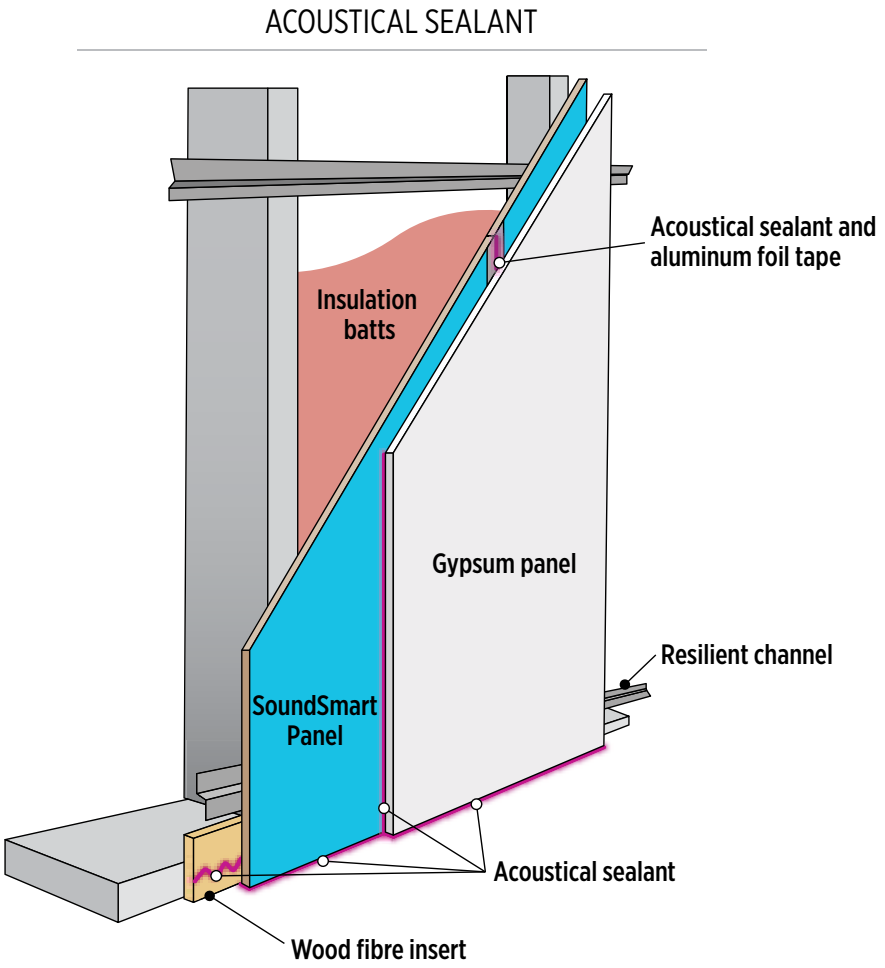


* For best results use a 7/16 in wood fibre panel cut into 3 in wide strips for this purpose.

3. Wood fibre inserts *(see page 6 for fastening patterns)*

To reduce sound flanking to a minimum, fasten a 76 mm (3 in) wide wood fibre strip* at the bottom and top of the wall partition using 32 mm (1 1/4 in) Type-S screw, spaced 610 mm (24 in) on-center. Apply a bead line of acoustical sealant to the front of the strip for adherence to the **SoundSmart** panels.

N.B. Do not mechanically fasten SoundSmart or Gypsum panels into wood fibre strip.

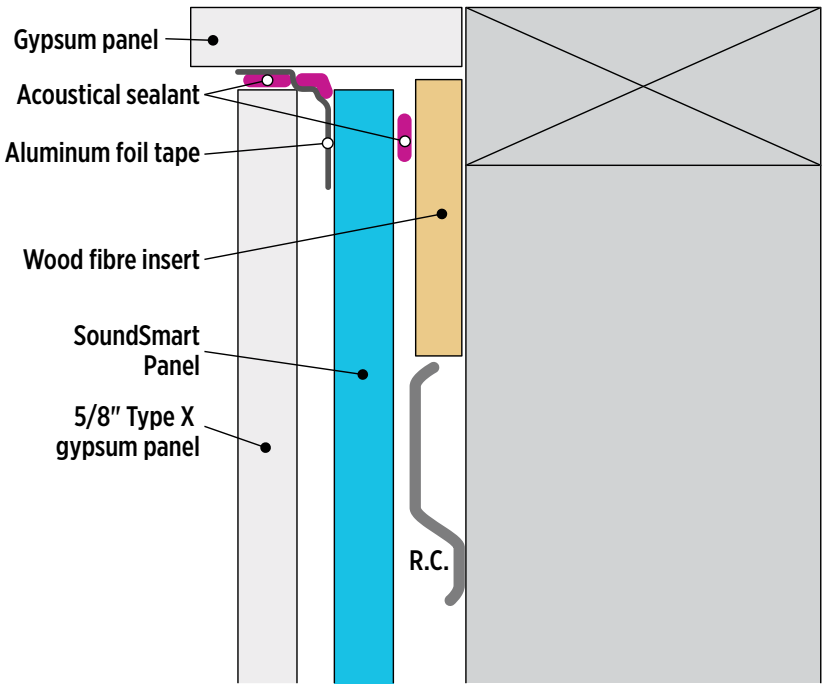


* For best results use a 7/16 in wood fibre panel cut into 3 in wide strips for this purpose.

4. SoundSmart panel *(see page 6 for fastening patterns)*

Install **SoundSmart** panel with aluminum foil facing away from channels. Using 32 mm (1 ¼ in) Type-S drywall screws spaced 610 mm (24 in) on-center, ensuring that the screws do not make contact with the studs, fasten **SoundSmart** panels to the resilient channels. To reduce flanking noise to a minimum, seal all gaps at joints and along perimeter using an acoustical sealant and cover with an adhesive aluminum foil tape. For proper installation of sealant*, a minimum gap of 3 mm (1/8 in) up to 6 mm (1/4 in) is recommended between panel joints and with all surrounding structural elements.

WALL AND CEILING ASSEMBLY DETAILS



5. Gypsum panels *(See page 7 for fastening pattern)*

Cover **SoundSmart** panels with one layer of 15.9 mm (5/8 in) Type X gypsum panel. Stagger gypsum panel joints and **SoundSmart** panel joints by the distance equivalent to the spacing between two studs. Ensuring that the screws do not make contact with the studs, fasten the gypsum panels using 41 mm (1 ⅝ in) Type-S drywall screws, spaced 305 mm (12 in) on-center for the top and bottom resilient channels and spaced 610 mm (24 in) on-center for resilient channels in the field.

* Follow manufacturers installation guidelines for acoustical sealant application.

6. Filling wall cavity with insulation

Fill wall cavity with 152 mm (6 in) thick sound attenuation or regular R-19 fiberglass insulation batts.

7. Closing wall assembly using gypsum panel

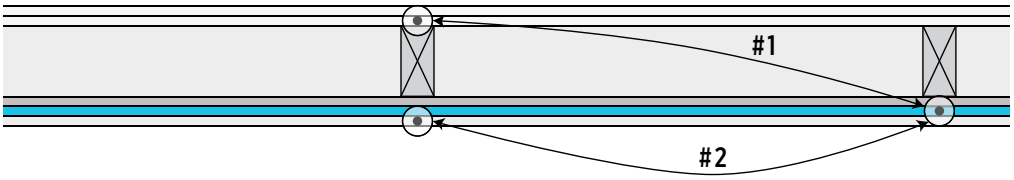
Close the partition with two layers of 15.9 mm (5/8 in) Type X gypsum panels. Stagger the joints of the base layer gypsum panels from the joints of the **SoundSmart** panel located on the other side of the cavity and repeat with the top layer of gypsum panels.

a. Fasten the base layer to the steel studs using 32 mm (1-1/4 in) Type-S drywall screws spaced 305 mm (12 in) on-center for the top and bottom of the wall and spaced 610 mm (24 in) on-center in the field.

b. Fasten the top layer using 41 mm (1-5/8 in) Type-S drywall screws, spaced 305 mm (12 in) on-center.

c. Repeat the application of sealant* at panel joints and in gaps surrounding base and top layers of gypsum panels*.

STAGGERING OF THE JOINTS



#1 Stagger panel joints from one side of the wall assembly from the other.

#2 Stagger all subsequent panel joints.

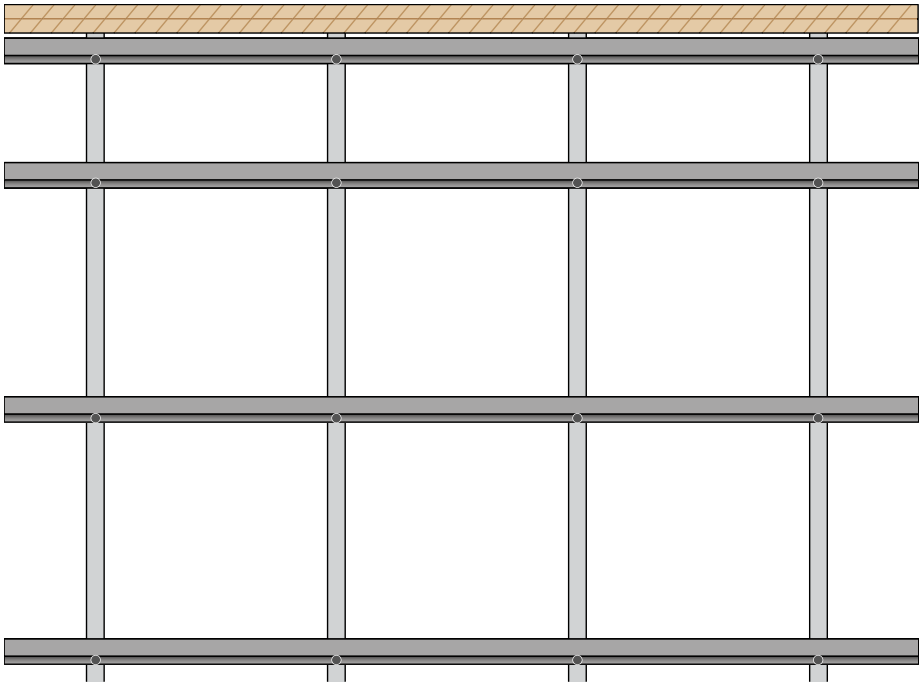
N.B. *It is recommended to stagger panel joints by one stud spacing (24"), however a minimum of 12" is acceptable.*

8. Gypsum panel joint and gap treatment

Finish all joints and gaps with tape and joint compound, according to manufacturer's instructions.

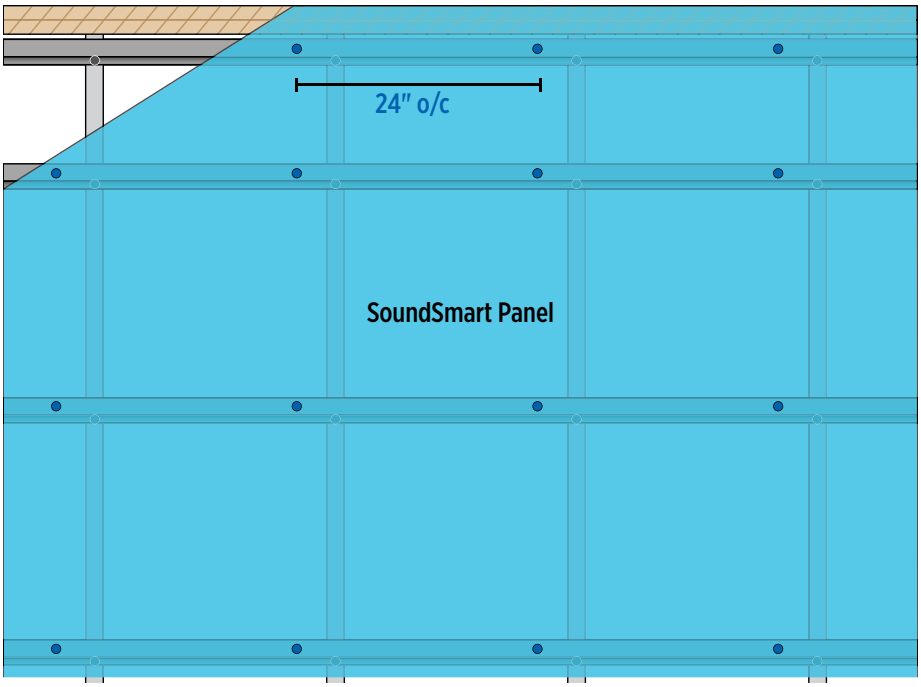
*Follow local building codes in terms of fire resistance requirements for sealant for top layer of gypsum.

STC 59 WALL ASSEMBLY | Wood fibre inserts fastening



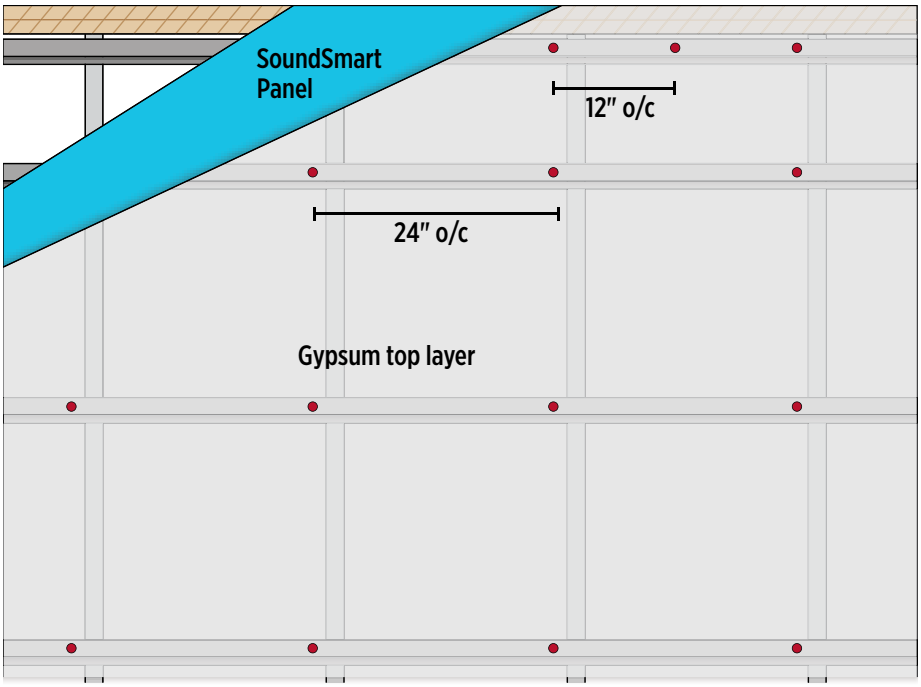
- **Using 32 mm (1 ¼") Type-S screws, fasten wood fiber strip @ 24" o/c.**

STC 59 WALL ASSEMBLY | SoundSmart panel fastening



- **Using 32 mm (1 ¼") Type-S screws, fasten the SoundSmart panel into R.C. @ 24" o/c.**

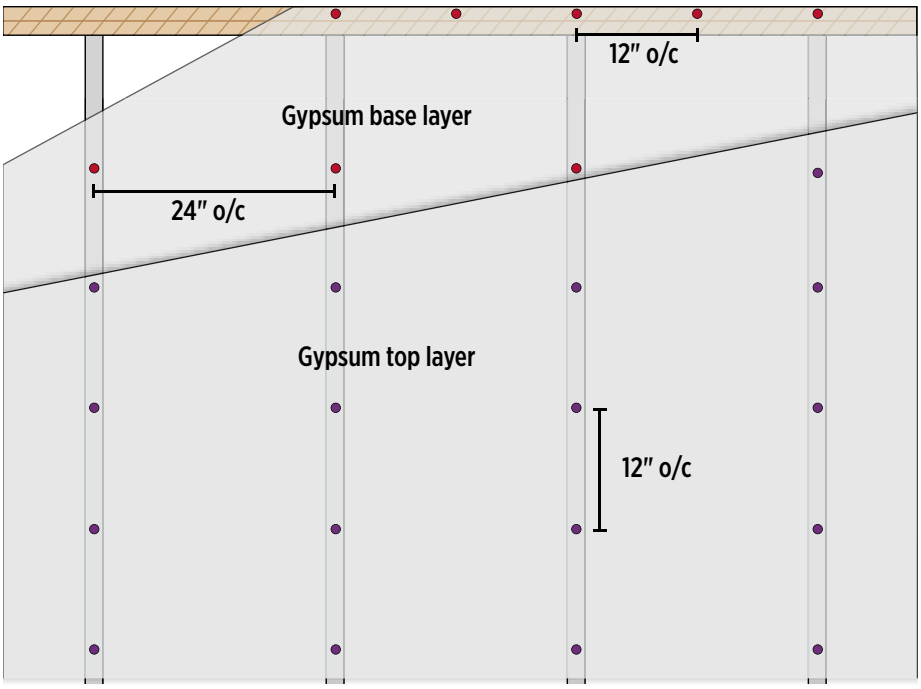
STC 59 WALL ASSEMBLY | Gypsum panel fastening



- Using 41 mm (1 ⅝") Type-S screws, fasten top layer gypsum panel into R.C. @ 12" o/c for top and bottom channels and @ 24" o/c for channels in the field.

N.B.: In order to ensure that the screws that line up with wall studs do not make contact with framing members, it is possible to slightly offset the anchor to the side in order to prevent contact with wall structure.

STC 59 WALL ASSEMBLY | Gypsum panel fastening *(Back wall assembly)*



- Using 32 mm (1 ¼") Type-S screws, fasten base layer gypsum panels into the top plate and bottom plate @ 12" o/c and @ 24" o/c for the vertical studs.
- Using 41 mm (1 5/8") Type-S screws, fasten top layer gypsum panels into top/bottom plates and vertical studs @ 12" o/c.

CODE COMPLIANCE

The National Building Code (NBC 2015, Div. B, Sentence 9.11.1.1) requires that separating assemblies between dwellings provide a sound transmission class (STC) rating of not less than 50. Flanking or indirect sound travelling through small openings and junctions between walls and floors is a determining factor in the overall acoustic performance of an acoustic assembly. Consult a professional acoustic specialist to optimize the acoustic performance of your wall or floor assembly and ensure the compliance to all standards mandated by national and local building codes.