SoundSmart
SOUNDPROOFING PANEL

INSTALLATION, STORAGE, AND HANDLING GUIDE

STC 55 INTERIOR WALL ASSEMBLY

BUILDING PRODUCTS OF CANADA CORP.
SINCE 1905

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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 55, as validated by the National Research Council of Canada (NRC - CNRC).

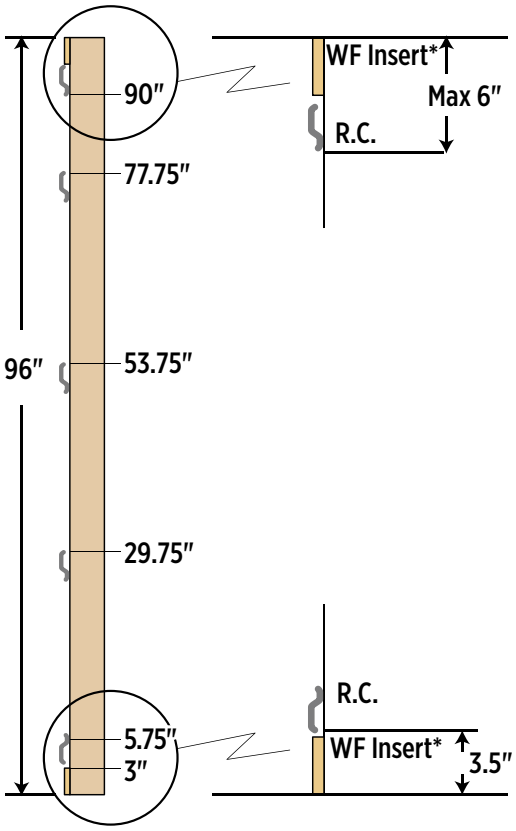
1. Wall framing

Build a wall partition using 38 mm x 89 mm (2 in x 4 in) wood 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 to the wood 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 152 mm (6 in) from the top of the wall. Using 32 mm (1 ¼ in) Type-W or 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

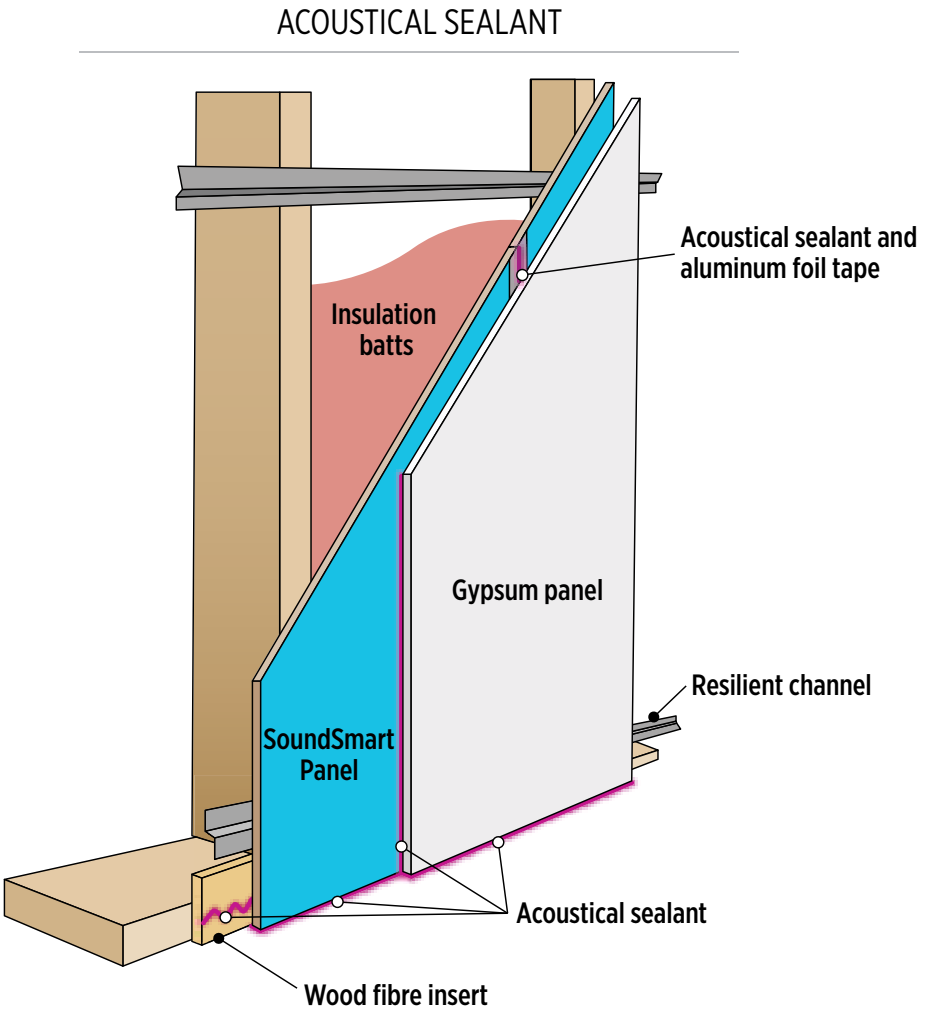


* For best results use a 7/16 in wood fibre panel cut into 3 in wide strips for this purpose.

3. Wood fibre inserts *(See page 6 for fastening pattern)*

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 ¼ in) Type-W or Type-S screws, 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 fiber strip.

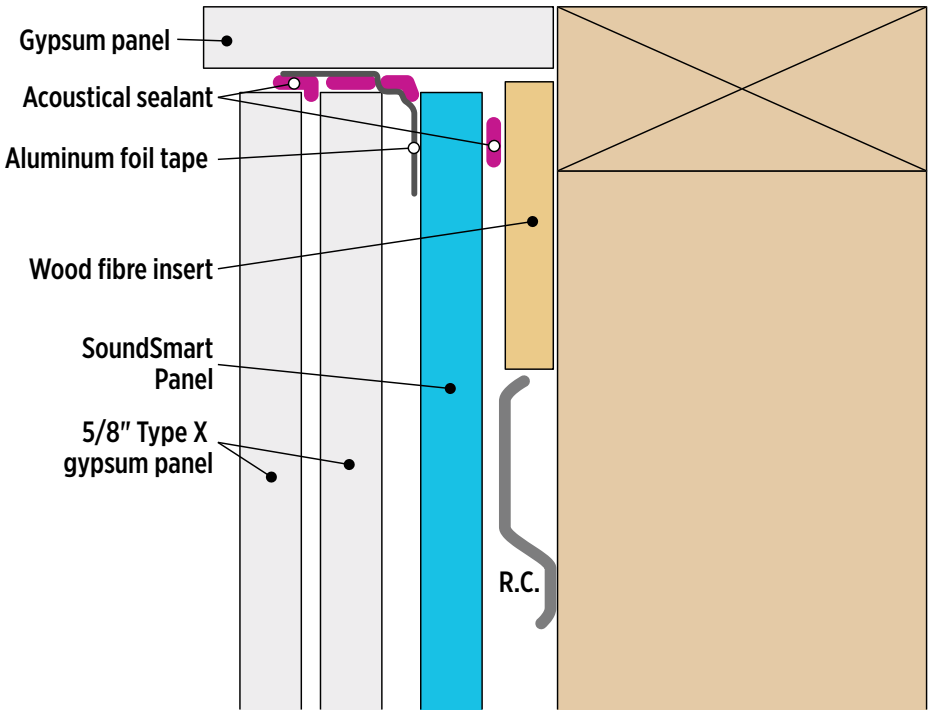


* For best results use a 7/16 in wood fibre panel cut into 3 in wide strips for this purpose.

4. SoundSmart panel *(See page 6 for fastening pattern)*

Install **SoundSmart** panel with aluminum membrane facing away from channels. Using 32 mm (1 ¼ in) Type-S drywall screws spaced 406 mm (16 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, 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



* Follow manufacturers installation guidelines for acoustical sealant application.

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

Finish by installing two layers of 15.9 mm (5/8 in) Type X gypsum panels. Stagger the (base layer) gypsum and **SoundSmart** panel joints by one stud spacing and repeat with the (top layer) gypsum panel.

a. Ensuring that the screws do not contact the studs, use 41 mm (1-5/8 in) Type-S drywall screws for the (base layer) gypsum panel, 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.

b. Ensuring that the screws do not make contact with the studs, use 57 mm (2 ¼ in) Type-S drywall screws for the (top layer) gypsum panel, spaced 305 mm (12 in) for all resilient channels.

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

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.

6. Filling wall cavity with insulation

Fill wall cavity with 89 mm (3-1/2 in) thick sound attenuation or regular R-12 fiberglass insulation batts.

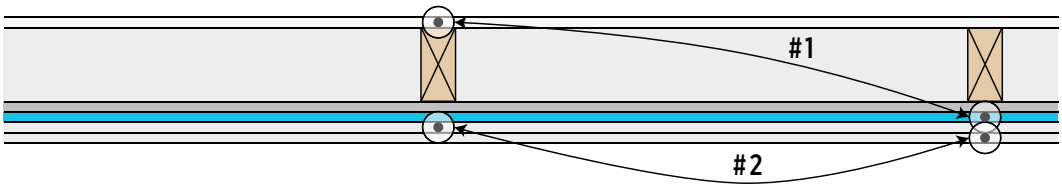
7. Closing wall assembly using gypsum panel

Close the partition with one layer of 15.9 mm (5/8 in) Type X gypsum panel using 32 mm (1 ¼ in) Type-W or Type-S drywall screws spaced 406 mm (16 in) on-center. Ensure that Gypsum panel joints are staggered by one stud spacing from **SoundSmart** panel joints on other side of the cavity.

8. Gypsum panel joint and gap treatment

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

STAGGERING OF THE JOINTS



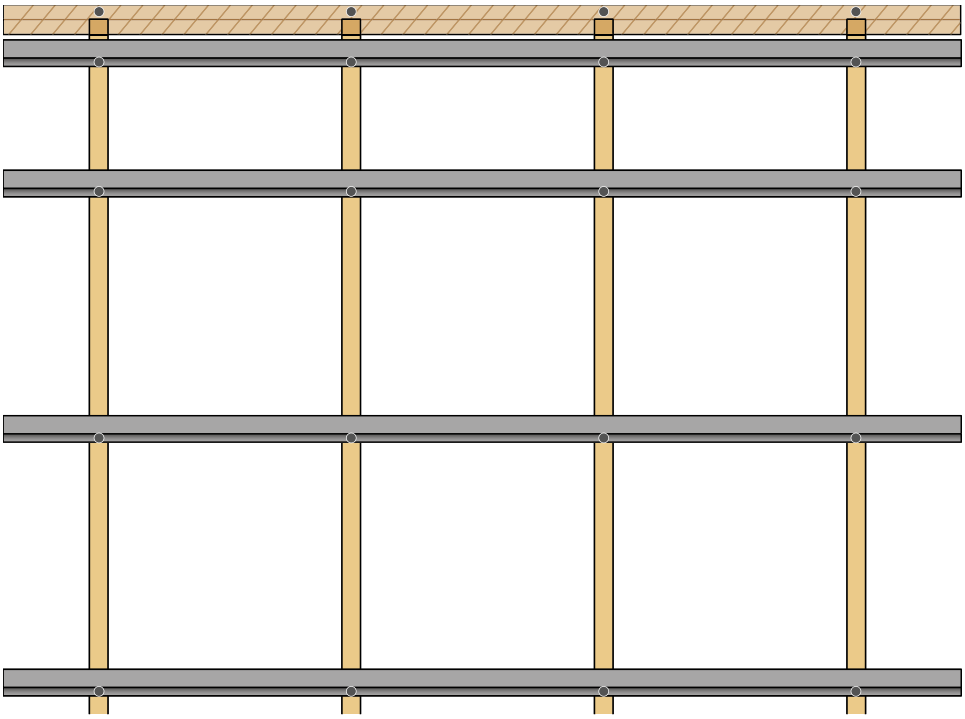
#1 Stagger panel joints from one side of the wall assembly from the other.

#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.*

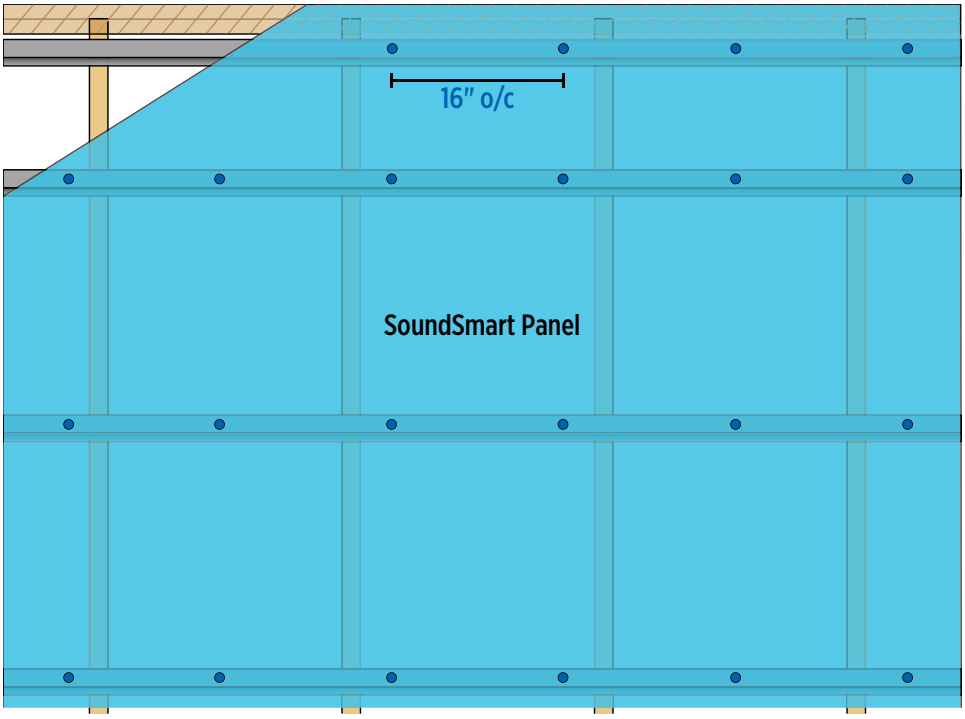
* Follow local building codes in terms of fire resistance requirements for sealant for base and top layer of gypsum.

STC 55 WALL ASSEMBLY | Wood fibre inserts fastening



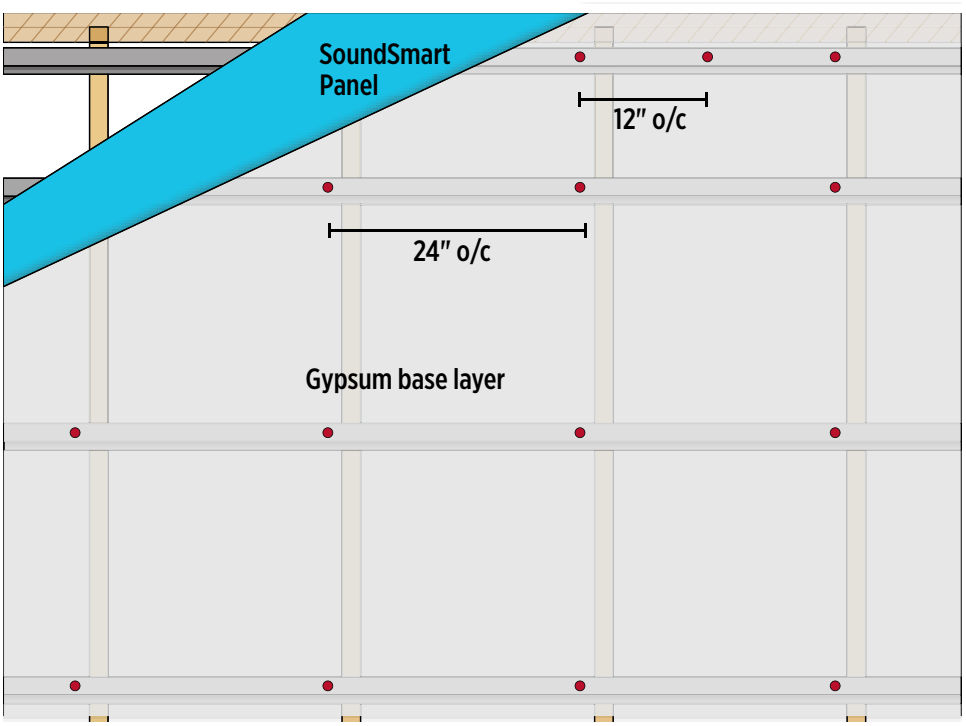
- **Using 32 mm (1 ¼") Type-S screws, fasten wood fibre strips at 24" o/c**

STC 55 WALL ASSEMBLY | SoundSmart panel fastening

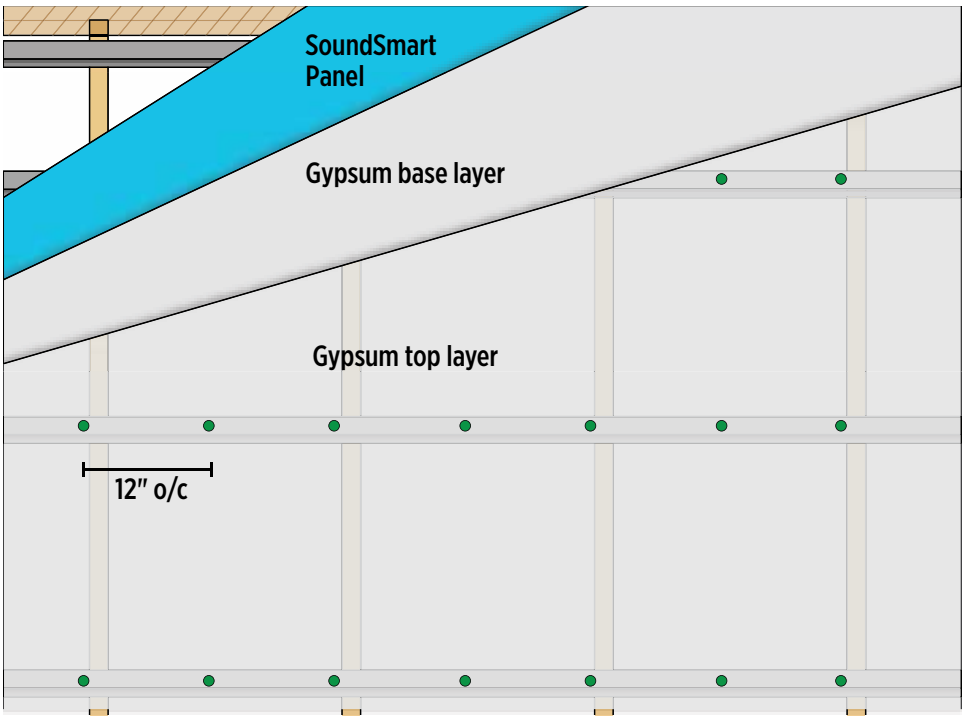


- **Using 32 mm (1 ¼") Type-S screws, fasten SoundSmart panels into R.C. @ 24" o/c**

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



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



- Using 57 mm (2 ¼") Type-S screws, fasten gypsum top layer into R.C. @ 12" o/c

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

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.