



Evaluation Report CCMC 12419-R

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Sonopan

1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that “Sonopan” when used as a sound insulating fibreboard in walls or floor separation assemblies requiring sound control in accordance with the conditions and limitations stated in Section 3 of this Report, complies with the National Building Code 2005:

- Clause 1.2.1.1.(1)(a), Division A, using the following acceptable solutions from Division B:
 - Sentence 9.11.2.1.(1) Minimum Sound Transmission Class Ratings

This opinion is based on CCMC's evaluation of the technical evidence in Section 4.1 provided by the Report Holder.

2. Description

The product is a sound insulating fibreboard made of wood fibres and recycled paper. It is manufactured in 19-mm-thick boards that are 1 220 mm wide and 1 220 mm, 2 440 mm or 2 740 mm long with an average density of 290 kg/m³. The product is green and has distinctive dimples in a grid layout on one face of the board. The product is part of a wall or floor assembly that will provide sound attenuation in accordance with the NBC 2005.

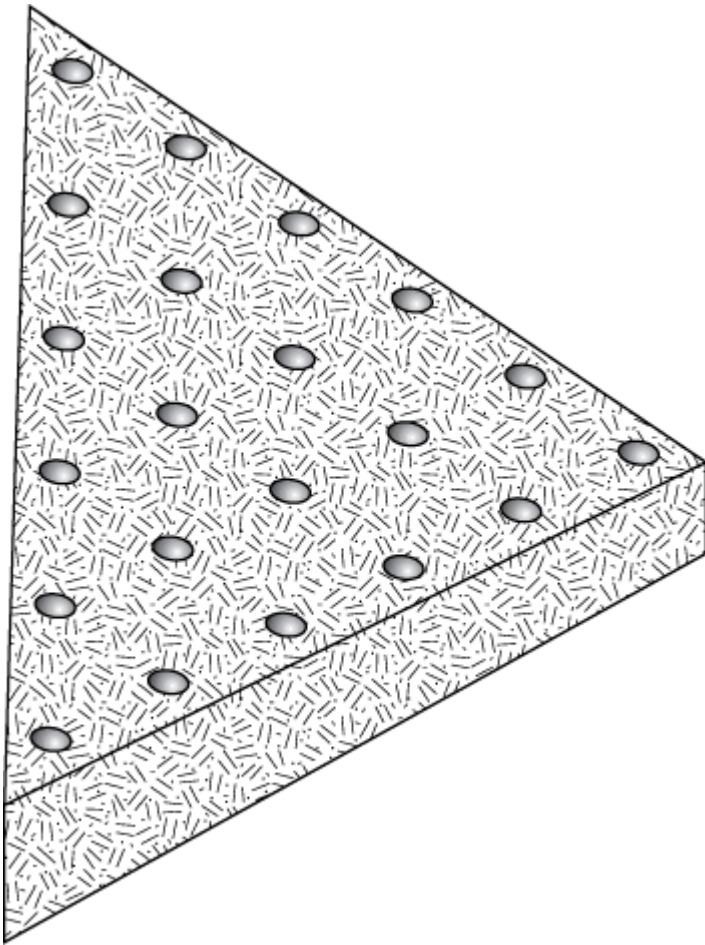


Figure 1. “Sonopan”

3. Conditions and Limitations

CCMC's compliance opinion in Section 1 is bound by the “Sonopan” being used in accordance with the conditions and limitations set out below.

- As per Sentence 9.11.2.1.(1) of Division B of the NBC 2005, wall and floor/ceiling assemblies, which separate dwelling units from every other space in a building, must have a sound transmission class rating (STC) of at least 50 when incorporating “Sonopan” sound insulating fibreboard.
- Wall and floor/ceiling assemblies with an STC of less than 50 may only be used within a dwelling unit (see Section 4 of this Report for STC ratings).
- When used for wall construction the product's dimpled board face must be oriented towards the air space within the wall cavity. The board must be fastened in the same fashion as gypsum board, with perimeter screws 450 mm o.c. and centre screws 150 to 200 mm o.c.
- When used in floor/ceiling assemblies the product's dimpled board face must be oriented up towards the air space within the floor/ceiling assembly.
- The product must not be used as a finish and must always be covered with a gypsum board.
- The installation must be in accordance with the manufacturer’s instructions.
- The packaging of each bundle of the product must be identified with:
 - Name and logo of the manufacturer; and
 - CCMC No. 12419-R.

4. Technical Evidence

CCMC's Technical Guide for "Sonopan" sets out the nature of the technical evidence required by CCMC to enable it to evaluate a product as an acceptable or alternative solution in compliance with the NBC 2005. The Report Holder has submitted test results for CCMC's evaluation. Testing was conducted at independent laboratories recognized by CCMC. The corresponding test results for "Sonopan" are summarized below.

4.1 NBC 2005 Compliance Data for "Sonopan" on which CCMC Based its Opinion in Section 1

4.1.1 Material Requirements

Table 4.1.1.1 Dimensional Tolerances

Property	Requirement	Result*
Length	+ 0 to 5 mm/m	-0.028
Width	+ 0 to 5 mm/m	-0.164
Squareness	2 mm/m	0.076
Thickness	± 8%	-3

Table 4.1.1.2 Physical Tolerances

Property	Requirement	Result*
Transverse load at rupture	35 N minimum	56
Tensile strength parallel to surface	0.7 MPa	0.894
Water absorption	10.0% maximum	2.58
Linear expansion @ 50% to 90% RH	0.5% maximum	0.099
Density	Report value** kg/m ³	272

Notes to Table 4.1.1.1 & 4.1.1.2:

* Average of five specimens.

** The density value reported must be part of the manufacturing quality assurance program.

4.1.2 Performance Requirements

Acoustical Performance

For acoustical tests, the product was installed in wall and floor/ceiling assemblies. The STC rating was established in accordance with ASTM E 413-87(1994), "Classification for Rating Sound Insulation," based on testing in accordance with ASTM E 90-04, "Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements."

In addition, the manufacturer submitted floor/ceiling assemblies for optional testing to establish the impact insulation class (IIC). The IIC was established in accordance with ASTM E 989, "Standard Classification for Determination of Impact Insulation Class," based on testing in accordance with ASTM E 492-90, "Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using The Tapping Machine."

Table 4.1.2.1 Assemblies between dwelling units (STC > 50) that conform to Article 9.11.2.1. of Division B of the NBC 2005

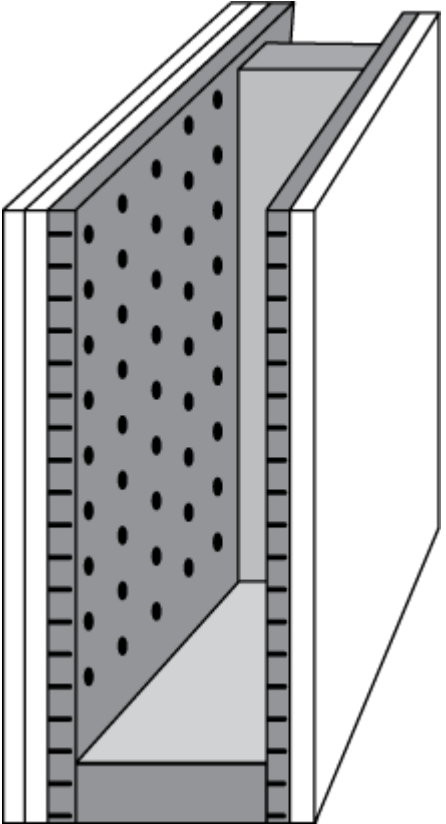
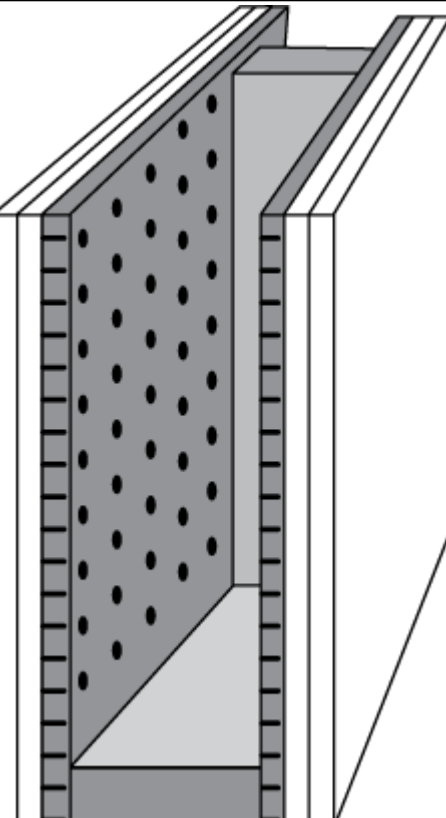
Elements in wall assembly	STC	Profile
<ul style="list-style-type: none"> • 15.9 mm gypsum board (vertical, screwed 406 mm o.c.) • 15.9 mm gypsum board (horiz., screwed 610 mm o.c.) • 19 mm “Sonopan” panel • 38 x 140 mm wood studs (610 mm o.c.) • 19 mm “Sonopan” panel • 15.9 mm gypsum board (horiz., screwed 406 mm o.c.) 	51	
<ul style="list-style-type: none"> • 16 mm gypsum board (vertical, screwed 406 mm o.c.) • 16 mm gypsum board (horiz., screwed 610 mm o.c.) • 19 mm “Sonopan” panel • 38 x 140 mm wood studs (610 mm o.c.) • 19 mm “Sonopan” panel • 16 mm gypsum board (horiz., screwed 406 mm o.c.) • 16 mm gypsum board (vertical, screwed 406 mm o.c.) 	53	

Table 4.1.2.1 Assemblies between dwelling units (STC > 50) that conform to Article 9.11.2.1. of Division B of the NBC 2005 (cont.)

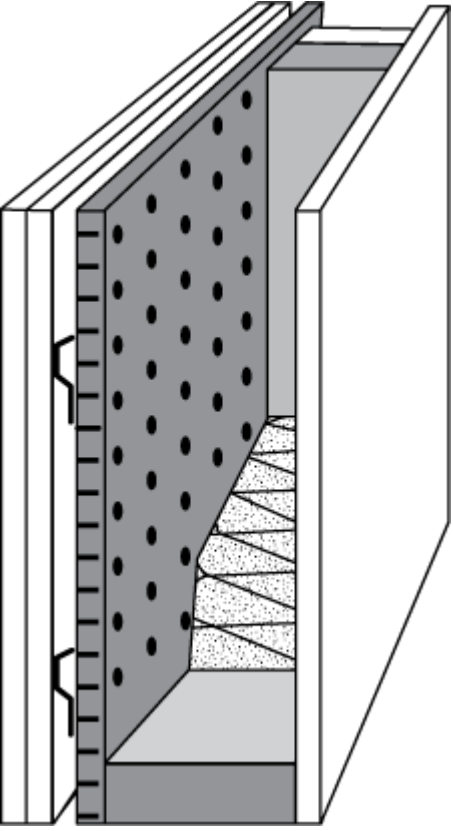
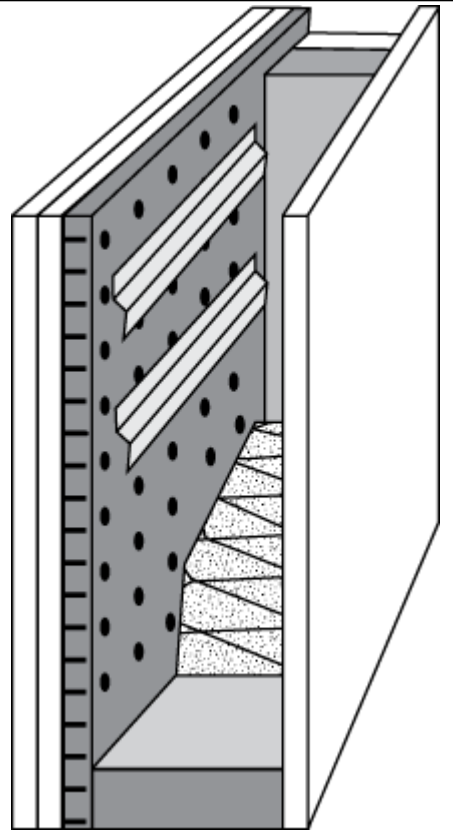
Elements in wall assembly	STC	Profile
<ul style="list-style-type: none"> • 15.9 mm Type X gypsum board (screwed 305 mm o.c.) • 15.9 mm Type X gypsum board (screwed 305 mm o.c. along the edges and 610 mm o.c. in the field) • 13 mm resilient channels (406 mm o.c.) • 19 mm “Sonopan” panel (screwed 610 mm o.c.) • 38 x 89 mm wood studs (610 mm o.c.) • 89 mm R12 glass fibre batts • 15.9 mm Type X gypsum board (screwed 305 mm o.c.) 	56	
<ul style="list-style-type: none"> • 15.9 mm Type X gypsum board (screwed 305 mm o.c.) • 15.9 mm Type X gypsum board (screwed 305 mm o.c. along the edges and 610 mm o.c. in the field) • 19 mm “Sonopan” panel (screwed 610 mm o.c.) • 13 mm resilient channels (406 mm o.c.) • 38 x 89 mm wood studs (610 mm o.c.) • 89 mm R12 glass fibre batts • 15.9 mm Type X gypsum board (screwed 305 mm o.c.) 	58	

Table 4.1.2.2a Assemblies where no STC rating is required (e.g. between rooms within a dwelling unit) and that do not conform (STC < 50) to Article 9.11.2.1. of Division B of the NBC 2005

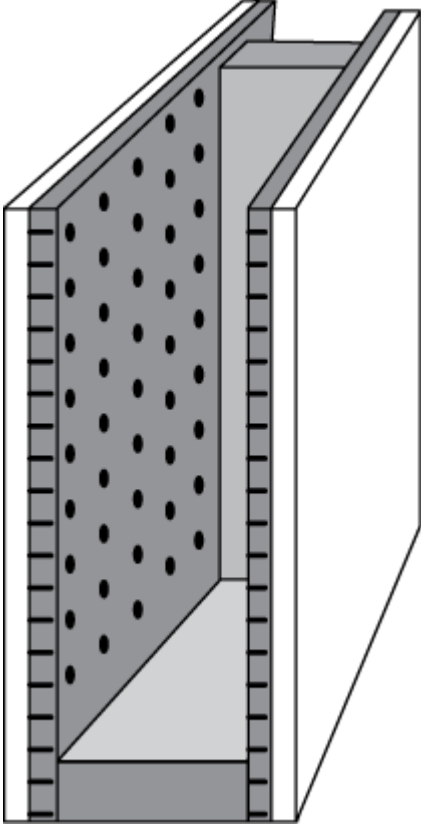
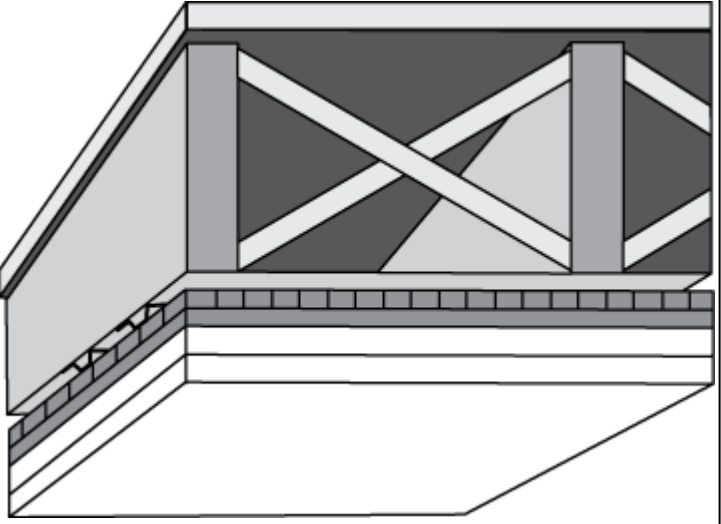
Elements in wall assembly	STC	Profile
<ul style="list-style-type: none"> • 15.9 mm gypsum board (horiz., screwed 406 mm o.c.) • 19 mm “Sonopan” panel • 38 x 140 wood studs (610 mm o.c.) • 19 mm “Sonopan” panel • 15.9 mm gypsum board (horiz., screwed 406 mm o.c.) 	48	

Table 4.1.2.2b

Elements in floor assembly	STC	IIC	Profile
<ul style="list-style-type: none"> • 15.9 mm subfloor, tongue and groove, screwed 152 mm o.c. • 38 x 233 mm joists, 400 mm o.c., bridging at midspan resilient metal channels, 13 mm, 406 mm o.c. • 19 mm “Sonopan” panel • 16 mm gypsum board screwed to resilient channels, 400 mm o.c. • 16 mm gypsum board, parallel to joists, screwed to resilient channel, 400 mm o.c. 	47	40	

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