

Client Nordic Engineered Wood
1100 Ave des Canadiens-de-Montreal
Montreal QC H3B 2S2

Specimen Small patch of Fermacell 2E31 on 70 mm precast concrete slab on 25 mm SonusWave placed on top of a CLT 5 ply (131 mm)

Specimen ID A1-008253-21SF

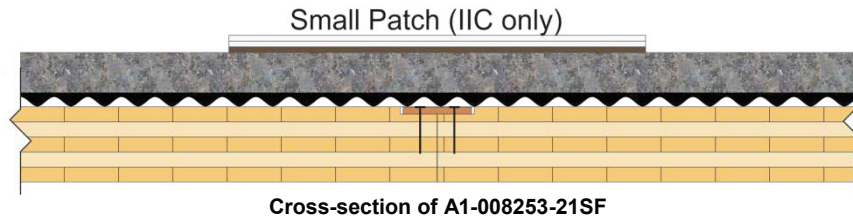
Construction Date April 13, 2016

Specimen Description

Covering (small patch): Fermacell panels type 2E31 (EE20+WF10) measuring 500 mm wide x 1500 mm long x 30 mm thick were installed on top of OSB subfloor. The rabbeted edges of the Fermacell panels were not glued or screwed. The patch covered an approximate area of 4 m² in the middle of the floor.

Topping: A 70 mm (2-3/4") precast concrete slab was placed on 25 mm Regupol® SonusWave™ which was placed on the CLT floor. The edge of the precast concrete slab was filled with insulation and taped.

CLT Floor: The specimen was composed of two cross-laminated timber (CLT) 5 ply panels (131 mm thick x 1989 mm wide x 4872 mm long) with a butt joint in the middle of the floor. The combined panels filled the entire floor opening of the test frame. The two CLT panels were joined using a 120 mm wide x 12 mm thick plywood strip spanning the full joint (4.9 m). The plywood strip was nailed with common nails 75 mm (3") long spaced 305 mm (12") on centre along the joint with beads of PL premium adhesive between the plywood strip and the CLT panels. The CLT floor was resting on the lip of the test frame and was not fastened to the test frame. The air gaps between the edges of the CLT floor and the test frame were filled with glass fiber insulation and covered with cloth tape. Duct putty was installed around the lower perimeter of the test frame and the CLT.



Specimen Properties

Element	Actual thickness (mm)	Mass (kg)	Mass/length, area or volume
30 mm Fermacell 2E31 (EE20+WF10)	30	*	26.6 kg/m ²
70 mm Precast Concrete Slab	70	3 202	165.8 kg/m ²
25 mm Regupol® SonusWave™	25	261	13.5 kg/m ²
131 mm CLT 5 ply	131	1 343	69.5 kg/m ²
Total	256	*	272.0 kg/m²

* Mass of small patch not added to total floor mass.

Test Results – Normalized Impact Sound Pressure Levels (Non-Standard)

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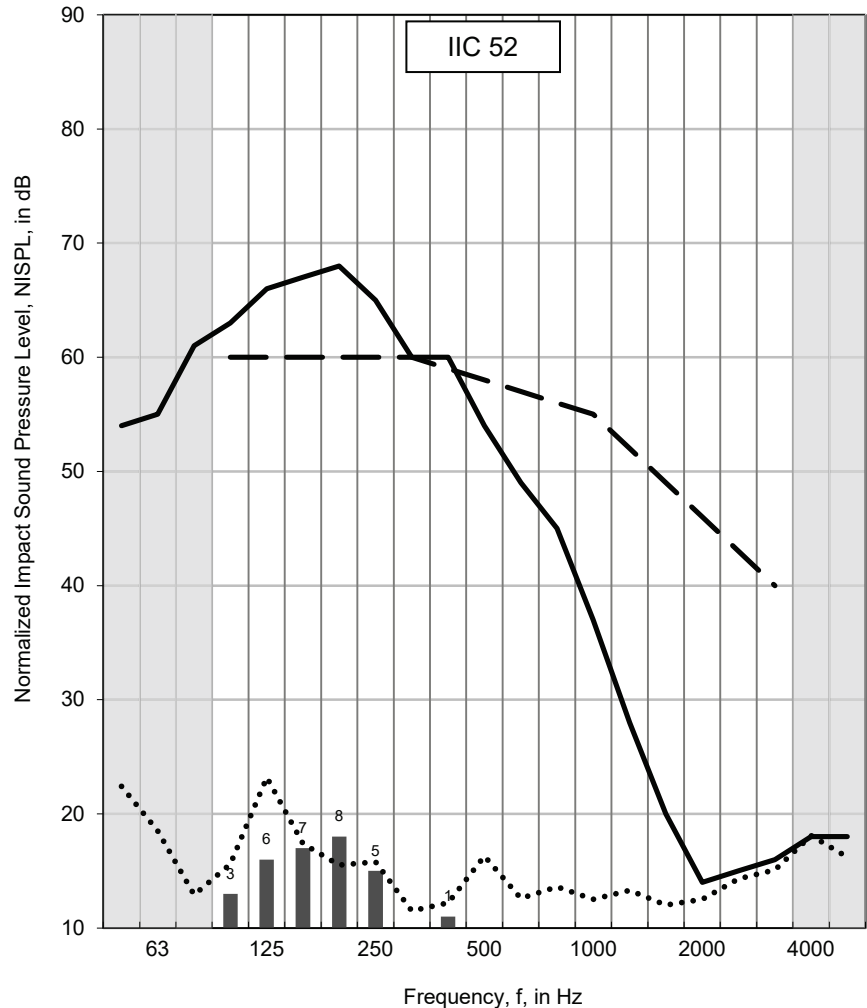
Test ID: IIF-16-016
Date of Test: March 10, 2016

Room	Volume (m³)	Air Temperature (°C)	Humidity (%)
Upper	175.3	21.9 to 22.1	33.3 to 33.8
Lower	176.9	21.0 to 21.1	36.9 to 37.7

Area S of test specimen:	17.85 m ²
Mass per unit area:	272.0 kg/m ²

f (Hz)	NISPL (dB)
50	54
63	55
80	61
100	63
125	66
160	67
200	68
250	65
315	60
400	60
500	54
630	49
800	45
1000	37
1250	28 c
1600	20 c
2000	14 *
2500	15 *
3150	16 *
4000	18 *
5000	18 *
Impact Insulation Class (IIC)	52

Sum of Positive Differences (dB)	30
Max. Positive Difference (dB)	8 dB at 200 Hz



For a description of the test specimen and mounting conditions see text pages before. The results in this report apply only to the specific sample submitted for measurement. No responsibility is assumed for performance of any other specimen. **Measurements of normalized impact sound pressure level (NISPL) were conducted following ASTM E492-09, “Standard Laboratory Measurement of Impact Sound Transmission through Floor-Ceiling Assemblies Using the Tapping Machine” but had a small patch of covering material instead of full surface coverage.**

In the graph:

The solid line is the measured normalized impact sound pressure level (NISPL) for this specimen. The dashed line is the IIC contour fitted to the measured values according to ASTM E989-06. The dotted line is the background sound level measured in the receiving room during this test (may be below the displayed range). For any frequency where the measured NISPL is less than 10 dB above the dotted line, the reported values were adjusted as noted below. Bars at the bottom of the graph show positive differences; where the measured data are greater than the reference contour as defined in ASTM E989-06. Shaded cells in the table and areas in the graph are outside the IIC contour range.

In the table:

Values marked “c” indicate that the measured background level was between 5 dB and 10 dB below the combined receiving room level and background level. Values marked “*” indicate that the measured background level was less than 5 dB below the combined receiving room level and background level and the reported values of NISPL provide an estimate of the upper limit of normalized impact sound pressure level, according to the procedure outlined in ASTM E492-09. The reported values of NISPL have been corrected according to the procedure outlined in ASTM E492-09.