

Client: Gerflor Australasia Pty. Ltd.
17 Cato Street, Hawthorn East Victoria 2123 Australia

Measurement Type: Impact Sound Insulation (Floor)

AS ISO 140.6-2006 "Laboratory measurement of impact sound insulation of floors"
AS ISO 717-2-2004 "Acoustics – Rating of sound insulation in buildings and of building elements. Part 2: Impact sound insulation"

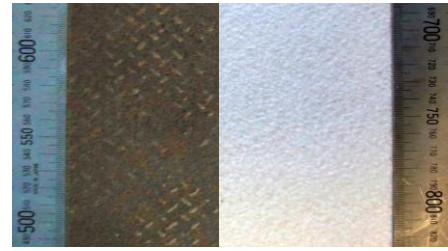
Test Specimen (Area of concrete test floor: 10.8 m² [3.6 x 3.0 m])

Description:
Gerflor Texline Pro vinyl floor roll, laid on a 200 mm thick concrete floor – no adhesive applied.

Materials:⁶
a) Gerflor Texline Pro vinyl floor roll; flooring roll with a vinyl core, nominal surface density: 2300 gsm, total thickness: 3.20 mm with 0.50 mm 'Pureclean' wear layer; Backing: 95 % recycled Polyethylene Terephthalate (PET); The product is available in a range of aesthetic designs/colours, all of identical construction except for the printing on the decorative film behind the clear wear layer on top. The test specimen provided for testing was designated 'Texline Pro Brooklyn Brown' with the product reference 13931789. The material was supplied as a roll 3.31 m in width and 3.60 m in length.
b) 200 mm thick concrete test floor of laboratory (approx. 480 kg/m²); no ceiling below.

Installation details:

- The 200 mm thick concrete sub floor was scraped, swept and vacuumed prior to testing.
- Texline Pro vinyl floor [Item a] was rolled onto the concrete test slab. No adhesives were used.
- Installation was carried out by the laboratory.
- Tapping machine locations were kept at least 0.5 m from the edges of the 200 mm thick concrete floor, and not in the immediate vicinity of the edges of the floor covering.



Detail view: L – Texline face; R – Texline backing.

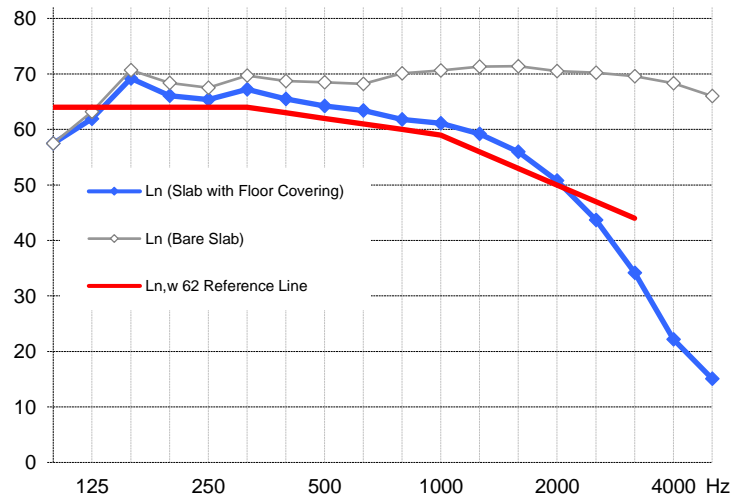


Test specimen installed in the laboratory for testing.

Measurement Details & Results^{1,2}

Freq (Hz)	Specimen Floor L _n (dB)	Bare Concrete Floor L _{n,0} (dB)
100	57.5	57.5
125	61.9	63.2
160	69.2	70.7
200	66.1	68.4
250	65.4	67.5
315	67.2	69.7
400	65.5	68.7
500	64.2	68.5
630	63.4	68.2
800	61.8	70.1
1000	61.1	70.6
1250	59.2	71.3
1600	56.0	71.4
2000	50.8	70.5
2500	43.7	70.2
3150	34.2	69.6
4000	22.2	68.3
5000	15.1	66.0

The concrete test floor, being 200 mm thick, is not suitable for testing in accordance with AS ISO 140.8; hence ΔL values are not reported. Impact noise figures for the bare concrete floor are included for information only.



Performance Index Numbers⁵ (laboratory method)

L_{n,w}(C₁) = 62 (-1) ie L_{n,w} = 62
IIC = 48

The tapping machine was placed diagonally in eight different locations across the test floor area; sound levels in the room below were measured over a whole microphone rotation (33 sec) at each location, and the results averaged.

Measurement Conditions	With Floor Covering	Bare Concrete Floor
Date of measurement:	18 May 2018	18 May 2018
On top of floor:	13 °C, 89 % R.H.	13 °C, 91 % R.H.
Chamber underneath floor:	14 °C, 72 % R.H.	14 °C, 73 % R.H.
Atmospheric pressure:	1011 mBar	1011 mBar

Notes, Deviations etc

- ≤ signifies results, if any, where measurement was limited by proximity to background level.
- L_n = dB re 20 μPa.
- Bare floor indices: L_{n,w}(C₁) = 77 (-11), IIC = 30.
- For L_n results, lower = quieter; for IIC, higher = quieter.
- IIC is as per ASTM E989-89; laboratory requirements for which may differ from those of AS ISO 140.6.
- Physical characteristics given for materials may be as per supplier's advice; not necessarily verified by CSIRO.

7. The test specimen material suffered no visible damage during the course of the test.

Issuing Authority

Signed:
Date: 22 June 2018

Acoustic Instrumentation

- Real time analyser: • Brüel & Kjær PULSE LAN-XI type 3160-A-4/2
- Microphone/preamp: • GRAS 40AP microphone on Brüel & Kjær 2669 preamp, rotating continuously with 33 sec period about a 1.65 m radius.
- Noise source: • Norsonic Nor277 tapping machine (complies with ISO 140)
- Calibration: • Brüel & Kjær type 4231 Calibrator: Jun 2017 (NATA cal)
• Analyser: Feb 2016 (NATA cal)
• Sensitivity of measurement system was calibrated against the calibrator at the time of measurement.

Laboratory Construction

- Chambers: • 300 mm thick concrete • parallelepiped with dimensional proportions 1:1.3:1.6 for uniform distribution of room modes
• room volume approx 200 m³ • room surface area approx. 212 m².
- Diffusers: • 20 stationary diffusers, approx 40 m² (combined area of both sides).
- Test floor: • The roof area of the reverberation chamber was constructed with a 200 mm thick area (3.60 x 3.00 m) for use as a test floor area. The test floor and the surrounding concrete floor of the chamber form a single monolithic structure.