



Mfpa Leipzig GmbH

Leipzig Institute for Materials
Research and Testing

Testing, Inspection and
Certification Authority for
Construction Products and
Constructions Types

Business Division II: Load-Bearing Structures and Sound Insulation

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GmbH according to DIN EN ISO/IEC
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Recognized Testing Laboratory by the VMPA

Acoustic Testing VMPA-SPG-129-
97-SN

Test Report No. PB 2.3/22-082-2

27 April 2022
No. Copy 1

Subject: Measurement of Dynamic Stiffness in
accordance with DIN EN 29052-1 of an impact
sound insulating material named
Acoustic Silence 825

Client: Scan Underlay ApS
Ursusvej 16
8464 Galten – Denmark

Date of order: 10-03-2022

Date of test: 27-04-2022

**Responsible for
Preparation:** D. Erler, B. Sc.
Dipl.-Phys. D. Sprinz

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1. Task specification

The Dynamic Stiffness of an impact sound insulating material named *Acoustic Silence 825* shall be measured in accordance with DIN EN 29052-1 by order of the client

Scan Underlay ApS
 Ursusvej 16
 8464 Galten – Denmark

Dynamic Stiffness s' according to DIN EN 29052-1 is to quote as result.

2. Test procedure

Measurement of Dynamic Stiffness was carried out according to:

- DIN EN 29052-1: Acoustics; determination of dynamic stiffness; part 1: materials used under floating floors in dwellings; german version EN 29052-1, Ausgabe August 1992

Test setup was arranged according to figure 1 a) and test procedure was met point 7.3 of DIN EN 29052-1. Excitation was realized with an impuls, acceleration was measured for determination of resonant frequency.

Preparation:

Three test specimen of the material were used, according to DIN EN 29052-1. Each of the three test specimen was covered with a water-resistant foil of 0.02 mm thickness. Upon the foil a gypsum layer with 5 mm thickness was applied and a steel plate embedded.

3. Test results

- *impact sound insulating material Acoustic Silence 825*

Dynamic Stiffness s' according to EN 29052-1							
Size of test specimen: 200 mm x 200 mm							
Test specimen No.	Mass [g]	Thickness under static load [mm]	Weight per unit area [kg/m ²]	Frequency [Hz]	s'_1 ¹⁾ [MN/m ³]	s'_a [MN/m ³]	s' [MN/m ³]
1	33	5	0,83	43	15,3	22,2	37,5
2	33	5	0,83	43	15,2	22,2	37,4
3	33	5	0,83	43	15,2	22,2	37,4
Average	33	5	0,83	43	15	22	37

tested on: 27-04-2022

Conditions in the testing laboratory:

temperature: 20 °C Air humidity: 40 %

¹⁾ Apparent dynamic Stiffness

The dynamic Stiffness s' was determined acc. to point 8.2 b) of DIN EN 29052-1:

$$s' = s'_t + s'_a$$

The value s'_a was calculated according to DIN EN 29052-1 using the following equation:

$$s'_a = 111 / d$$

The result for the dynamic Stiffness s' according to DIN EN 29052-1 is:

$$s' = 37 \text{ MN/m}^3$$

There were used metrological determined values of the air flow resistivity from the testing institute for the determination of the dynamic Stiffness s'_a of the enclosed air. The value s'_a was determined acc. to point 8.2 b) of DIN EN 29052-1.

4. Note

The sound insulation material was delivered to MFPA Leipzig GmbH on 11-03-2022. 3 test specimen were cut out randomly from this material for the measurement by craftsmen of MFPA Leipzig GmbH. The 3 specimens were consecutively numbered. The mass of the load-bearing plate with the embedded, hardened gypsum layer was determined on the test date for each specimen.

In Germany for insulation materials that do not comply with DIN 4108-10, application abbreviation DES, the value of the dynamic stiffness s' must not be used to determine the impact sound reduction according to DIN 4109-34: 2016-7, Equation 3 and Figure 1, Equation 5 and Figure 2.

The results of the tests exclusively relate to the items tested. This document does not replace a certificate of conformity or suitability according to national and European building codes.

Leipzig, 27 April 2022

Dipl.-Phys. D. Sprinz
Head of Work Group

D. Erler, B. Sc.
Testing Engineer