

Client: Stone AGE BV
 attn Rutger Nieuwenhuis
 Butaanstraat 10a
 7463 PG Rijssen

Druuten, October 21, 2020 page 1 of 6, 200152rv2 EN.

Dear Mr Nieuwenhuis,

Enclosed you will find an overview of the tests carried out in October, together with the results obtained.

Flooring system: Basebeton BB Extreme (1010) Stone
 Stone AGE BV supplied the flooring system.
 The system was applied to 4 concrete tiles.

The following tests were carried out:

- Direct impact test. (ISO 6272)
- Practical impression test. (Chair test)
- Hardness of the floor.
- The gloss level of the floor.
- Scratch resistance.
- Determination of the surface texture.
- Determination of the adhesive strength.

System build-up specification Stone AGE: Basebeton BB Extreme (1010) Stone
 Total layer thickness of layers 1 through 5: 1.5 – 2 mm

substrate	Concrete tile	Layer thickness
layer 1	Epoxy scraping layer + filler	Approx. 0.5 – 1 mm
layer 2	BaseBeton Xtreme Basa	0.2 - 0.5 mm
layer 3	BaseBeton Xtreme Sence	0.1 - 0.5 mm
layers 4 and 5	SA Basic Coat 2k PU WB	0.1 mm



Direct impact test. (ISO 6272)

From a certain drop height, a metal ball of 10 N is dropped on the floor.

The floor's contact surface is evaluated as regards deformation.

A possible deformation is described, while the deformation's depth is measured and reported in micron. (1 micron = 0.001 mm)

The impact classification runs from low to high: 4 Nm - 10 Nm - 20 Nm.

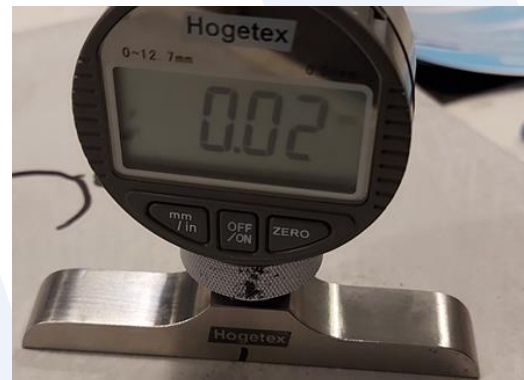
The standard for living room floors is 4 Nm.

An example for 4 Nm: If a 10 Nm ball drops from a height of 40 cm onto the casting floor/coating to be tested, this may not cause any visible crackle and/or delamination. A slight deformation is allowed though!

Results:

	Direct impact	ISO 6272 - 1 kg
Drop height in cm	Visible:	depth in micron
25	No crackle and/or delamination	30
40	No crackle and/or delamination	60
100	No crackle and/or delamination	20

Result: Classification impact 10 Nm



Depth gauge in mm.

Practical chair impression test.

IKEA chair: Ernfrid/Leifarne

The chair has 4 legs. These are placed on the test tiles. After a continuous load during 1, 4, 8 and 24 hours, the load is being removed to evaluate and record a possible deformation of the floor. The load on the chair amounts to 100 kg. The legs are fitted with the standard IKEA leg cap, the standard IKEA leg cap with felt and a scratchnomore protection device.

Results:

Chair load	IKEA chair with leg cap	Impression after load
	Ernfrid/Leifarne	in micron
weight in kg	time in hours	1 mm = 1000 micron
100	1	10
	4	30
	8	50
	24	70
measured texture substrate without load		0 - 130 micron



Practical chair impression test: IKEA chair Ernfrid/Leifarne



Depth gauge / texture measuring device

Chair load	IKEA chair with felt	after load
	Ernfrid/Leifarne	in micron
weight in kg	time in hours	1 mm = 1000 micron
100	1	20
	4	20
	8	30
	24	30
measured texture substrate without load		0 - 130 micron



Chair load	IKEA chair with scratchnomore	after load
	Ernfrid/Leifarne	in micron
weight in kg	time in hours	1 mm = 1000 micron
100	1	10
	4	10
	8	10
	24	10
measured texture substrate without load		0 - 130 micron



Floor protectors from left to right: scratchnomore, felt, IKEA leg cap.

Hardness of the floor:

The hardness of the floor is determined by means of a shore D measurement.

The shore D hardness - 1 sec amounts to 81 +/- 2.

The shore D hardness - p (peak) amounts to 84 +/- 2.



The floor's gloss level.

The floor's gloss level is measured under an angle of 60 ° and of 20 °.

Results:

gloss level 60 °	2
gloss level 20 °	0



The floor's scratch resistance:

The scratch resistance is measured with a hardness pen in conformity with DIN 55656.

force in N	scratch resistance at 20 °C	scratch resistance at 50 °C
	DIN 55656	DIN 55656
1	n	w
2	w	d
3	d	d
4	d	d
5	d	d
6	d	d
7	d	d
8	d	d
n = nothing visible	w = friction mark	d= defect

The scratch resistance amounts to 2 N at 20°C.



Hardness pen, sclerometer DIN 55656.

Determination of adhesive strength (without the top layer SA Basic Coat 2k PU WB):

The adhesive strength measurements were carried out with the pull-off tester Proceq DY 216. For the measurements the substrate is drilled into with a diamond drill with stand/template. A metal dolly (Ø 50 mm) is glued to the test surface with a special quick-drying glue on a PMMA basis. The dolly is then pulled at with an almost steadily increasing force until detachment or a fracture occurs. The maximum force or tension that occurs is called adhesive strength or tensile strength. This is indicated in N/mm².

dolly	N/mm ²
1	2.77
2	3.14
3	2.51



Summary

Based on the test results, it can be said that the flooring system, on condition that it is applied to a hard, impact-resistant, load-bearing substrate in conformity with the specifications, possesses very good characteristics with regard to impact load and chair impression load. The deformations resulting from the impact test and the chair impression test are barely visible and are negligible as part of the system's surface texture. The scratch resistance, just like that of many other mineral design floors, is quite low. We recommend to use scratchnomore protection devices under objects that are moved frequently, such as chairs, furniture etc. You may also consider to accept that scratches will develop. It matches with the robust character of this type of floor.

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