



Tellija:

AS Uninaks

Forelli 11
10612 TALLINN

06.06.2016

Experimental Report N° 552/16

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Assignment: Testing of adhesive for tiles of Uninaks AS.

Product designation: Dry mix of adhesive based on cement, marked as „**Plaatimissegu Naks 5, 08.03.16** (3. tootmisliin)“.

Forwarded to the laboratory by manufacturer on 15.03.2016 in 25 kg standard package.

Test method: EN 1348 „Adhesives for tiles – Determination of tensile adhesion strength for cementitious adhesives“.

Adhesion strength after freeze-thaw cycles

The adhesive was mixed at 06.04.2016 in accordance with EN 1348 using the amount of water 0,24 l/kg and time of mature 10 min, stated by manufacturer.

The adhesive was applied in accordance with EN 1348 to the concrete slab, complied with EN 1323. In addition a layer of the adhesive approximately 1 mm thick was applied to the back faces of the type V1 tiles before placing. After 5 min 10 type V1 tiles were placed on adhesive and each tile loaded with $(20 \pm 0,05)$ N for 30 s.

After preparing the test units were stored for 7 days under standard conditions at a temperature of (23 ± 2) °C and relative humidity of (50 ± 5) % and then immersed in water at the standard temperature.

After 21 days the test units were removed from the water and carried out the 25 freeze-thaw cycles in accordance with EN 1348. After the last cycle the test units were allowed to reach standard conditions and then the pull head plates were bonded to the tiles.

After a further 24 h storage under standard conditions the tensile adhesion strength was determined.

The test results are given in table 1.

Test results:

Table 1: **The tensile adhesion strength after freeze-thaw cycles**
of tile adhesive based on cement, marked as „Plaatimissegu Naks 5, 08.03.16”

No of test units	Preparing date of test units	Testing date	Bonding area A, cm ²	Total load L, kN	Tensile adhesion strength, N/mm ²	
					individual	mean
1	06.04.16	01.06.16	25,8	1,67	0,7	0,7
2			26,1	1,92	0,7	
3			26,0	1,02	0,4*	
4			26,5	1,72	0,7	
5			26,1	1,65	0,6	
6			26,1	1,45	0,6	
7			26,6	1,71	0,6	
8			25,8	1,74	0,7	
9			25,5	1,65	0,7	
10			26,2	1,43	0,6	

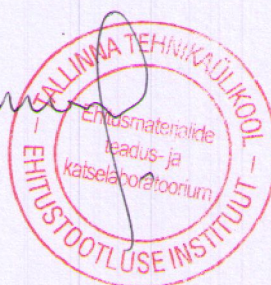
* The values falling out of the range of $\pm 20\%$ from the mean value were discarded.

The mode of failure:

Test units No 1-10 – adhesive failure between tile and adhesive

The test results are valid to the described test sample only.

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