

Determination of compressive strength of hardened mortar, SFS EN 1015-11 and EAD 350454-00-1104

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Assignment	Determination of compressive strength of hardened mortar standard SFS EN 1015-11, 1999, Jan Larsson
Sample details	The customer delivered a sample FPS (Fire Protection System) for testing on 20.8.2020. Size of the sample was about 12 kg.

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Methods **Preparation of test specimens**

The samples were cast at the premises of Eurofins Expert Service Ltd on 16.11.2020 at a temperature of $(22 \pm 2)^{\circ}\text{C}$. To perform the test, the mortar was mixed in the ratio specified by the customer, 1 600 g of water and 3 200 g of mortar, until the product was homogeneous. A total of six prisms (40 mm x 40 mm x 160 mm), were cast from the mortar. Filling was done in two layers, and both layers were sealed by sealing 25 times.

The samples 1 - 3 were stored in molds for one day at RH (95±5)% and $(20\pm 2)^{\circ}\text{C}$. On 17.11.2020 samples were removal from the molds, and after that the samples were compressed from both ends.

The samples 4 - 6 transferred to dry an oven $(30 - 35)^{\circ}\text{C}$. The samples were removal from the molds on 17.11.2020 and weighed daily. The compression was performed after they mass were stabilized on 19.11.2020 at the age of 3 days. The samples were compressed from both ends.

Results The results of the compressive strengths of samples 1 - 6 are shown in Table 1.

Table 1. The results of the compressive strengths.

Sample	Date	d	Date / Pres.	mm	mm	mm	kg/m ³	kN	kN	MPa	MPa	Aver
1	16.11.2020	1	17.11.2020	160,3	40,0	40,1	1462	10,6	11,4	6,63	7,13	6,6
2	16.11.2020	1	17.11.2020	160,7	40,4	40,3	1437	10,2	11,0	6,31	6,81	
3	16.11.2020	1	17.11.2020	161,0	40,7	40,3	1428	10,0	11,0	6,14	6,75	
4	16.11.2020	3	19.11.2020	160,8	40,9	40,8	1115	19,6	19,6	12,19	12,19	12,4
5	16.11.2020	3	19.11.2020	160,9	41,0	41,5	1116	20,0	20,2	12,38	12,50	
6	16.11.2020	3	19.11.2020	161,0	40,6	41,0	1133	20,0	20,0	12,75	12,38	

Espoo, 24.11.2020

Terhi Nyman

Expert

Distribution Customer, electronically approved

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