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Testing of hydrophobic impregnation for the protection of concrete structures – Prevention of chloride ingress

(2 appendices)

1 Assignment

Testing of Sikagard 705 L hydrophobic impregnation product on concrete with respect to prevention of chloride ingress and infrared analysis. The tests were carried out in accordance with the directions of NT BUILD 515, Edition 1, *Hydrophobic impregnations for Concrete – Prevention of chloride ingress – Filter effect*.

These test results have been published in report 6P00354 B 2016-10-28 for the same product, under another product name.

2 Test schedule

The test objects and scope of the tests are shown in table 1. The tests were carried out between May and October 2016.

Tabel 1. Test schedule for treated and untreated concrete samples

Property	Method	Test object	
		Dimensions (mm)	Number
Prevention of chloride ingress – filter effect	NT BUILD 515	100x100x50	3 treated
			3 untreated

The concrete and the test specimens were produced and stored at Swedish Cement and Concrete Research Institute (CBI) in Borås in accordance with the directions of EN 1766. The test were carried out on “Type MC(0.45)”.

Sikagard 705 L batch nr KH 13145, which arrived at CBI on 26 April 2016, was applied by CBI in accordance with the manufacturer’s recommendations. An amount equivalent to approximately 130 g/m² was applied to the test surface of each test specimen (applied by dipping, 3 times for 5 min each with an interval of 15 min).

The amount of impregnation product applied was checked by weighing. CBI has no other information relating to the substance and the sampling.

3 Results

The chloride profiles of the test specimens were then determined as the Cl^- level in % of the weight of the concrete in six (references) and five (treated specimens) steps down to a depth of 25 mm from the exposed surface in accordance with EN 14629:2007 *Products and systems for the protection and repair of concrete structures – Test methods – Determination of chloride content in hardened concrete*.

The result of the determination of the chloride profile is shown in diagram 1 as the mean of the results from three specimens. The measurement data is reported in Appendix 1.

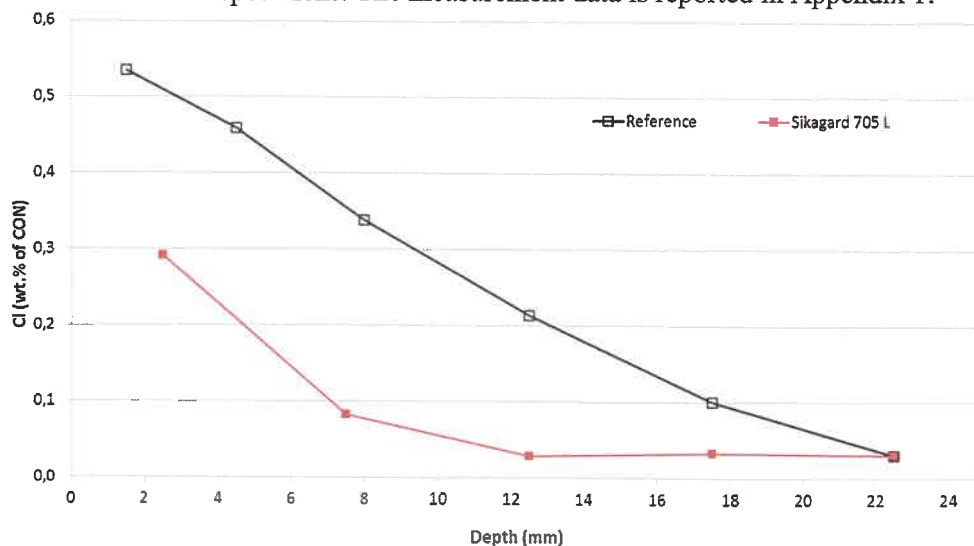


Diagram 1. Chloride content


The result of the infrared analysis is reported in report 6F015896 B.

4 Comments

The tested hydrophobic impregnation product, Sikagard 705 L, meets the requirements of AMA Anläggning 17, LFB.311. The calculated filter effect (FE_{25}) is 0.71, which is higher than the requirement on minimum value which is 0.60.

**The Swedish Cement and Concrete Research Institute (CBI)
Testing & Control**


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Appendices


Cathrine Ewertson

1. Test schedule.
2. Test results of the determination of the chloride content