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Testing of Sikagard 706 Thixo for the protection of concrete structures – Chloride content (1 appendix)

1 Assignment

Testing of Sikagard 706 Thixo hydrophobic impregnation product on concrete with respect to chloride content. These test results have been published in report PX10706 A 2012-03-19 for the same product, under another product name. Tests carried out in accordance with the directions of “TRVAMA Anläggning 10” Swedish Transport Administration, Publication 2011:102.

2 Test schedule

The test objects and scope of the test are shown in table 1. The tests were carried out between August 2011 and Mars 2012.

Tabel.1. Test schedule for treated and untreated concrete samples

Property	Method	Test object		
		Measurements (mm)	Number	g/m ² Sikagard 706 Thixo
Effect on concrete chloride content	TRVAMA Anläggning 10 EN 14 629:2007 Method B	100x100x20	3 treated	200
			3 treated	400
			3 untreated	-

The concrete and the test samples were produced and stored at CBI Swedish Cement and Concrete Research Institute in Borås in accordance with the directions of EN 1766. Test were carried out on “Type C (0.70)” concrete without air content.

Sikagard 706 Thixo, batch nr EB 19859, which arrived at CBI on 11 November 2011, was applied by CBI in accordance with the manufacturer’s recommendations. An amount equivalent to approximately 200 g/m² respective 400 g/m² was applied to the test surface of each test sample. The amount of finish applied was checked by weighing. CBI has no other information relating to the substance and sampling.

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3 Result

Test samples measuring 100 x 100 x 20 mm³ were cut from the central part of the cube, at right angles to the upper surface (3 treated and 3 untreated), and conditioned for 14 days at (21 ± 2) °C with a relative humidity of (60 ± 10) %. At the end of the conditioning period, the surface of the three test samples was treated, and the samples were then stored in the same conditions for a further 14 days. The treated and untreated test samples were stored in a 15% NaCl-solution in separate containers for a total storage period of 56 days.

At the end of the storage period, a cylinder with a diameter of 50 mm was drilled from the test sample. From the ends of the cylinder, that were in contact with NaCl-solution, a 2.5 mm surface layer was ground. The chloride content of the test sample was then determined as the Cl⁻ level in % of the weight of the cement in accordance with EN 14 629. The result of the determination of the chloride content is shown in diagram 1, and the measurement data is reported in Appendix 1. The chloride content is stated as a percentage of the weight of the cement. The quantity of cement in the concrete is assumed to be 15 percent by weight.

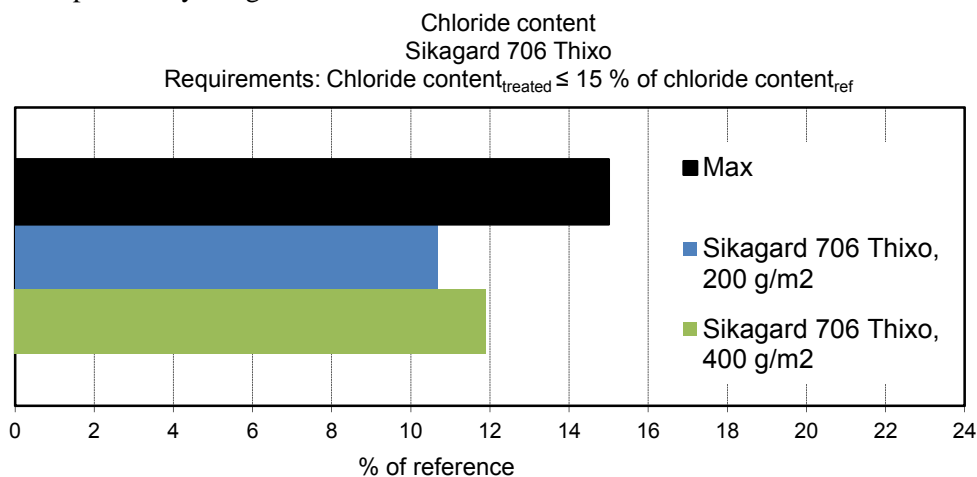


Diagram 1. Chloride content

4 Comments

The tested hydrophobic impregnation product, Sikagard 706 Thixo, meets the requirements of “TRVAMA Anläggning 10, Swedish Transport Administration, Publication 2011:102 .

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Appendix: Tests results

TEST REPORT



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Appendix 1

Test results

Chloride content , % of cement weight

200 g/m ²	Ref	Treated	% of ref.
C200-1	3,33	0,41	12,23
C200-2	3,63	0,38	10,46
C200-3	3,50	0,33	9,34
Medel	3,49	0,37	10,68
Stdav	0,15	0,04	1,46
400 g/m ²			
C400-1	3,33	0,47	14,04
C400-2	3,63	0,39	10,82
C400-3	3,50	0,38	10,86
Medel	3,49	0,41	11,90
Stdav	0,15	0,05	1,85