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Certificate Of Analysis

TRADECC Belgium
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Date	:	27/10/2017
Subject	:	Water tightness under pressure tests PC Elastoswell
Your Code	:	Purchase order IOR1617/01412 dd. 30/06/2017
Laboratory Number	:	171779 UK
Sampling	:	By client
Period of Investigation	:	01/08/2017 until 16/10/2017

Purpose of the investigation

Determine PC Elastoswell waterproofing at a water pressure of 7, 8 and 9 bar.

Conclusion

The test pieces with PC Elastoswell, tested as described, do not leak at 9.2 bar water pressure. Also at a peak load of 10 bar there is no leakage.

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Set up of the investigation

TRADECC has made tree configurations A, B and C specified by SGS INTRON:

Configuration A Pretest reference concrete, 1 layer without PC Elastoswell
Based on these test pieces, we will understand how long it takes at 7 bar water pressure to saturate the concrete that is above the PC Elastoswell. Below is a schematic section of this configuration.

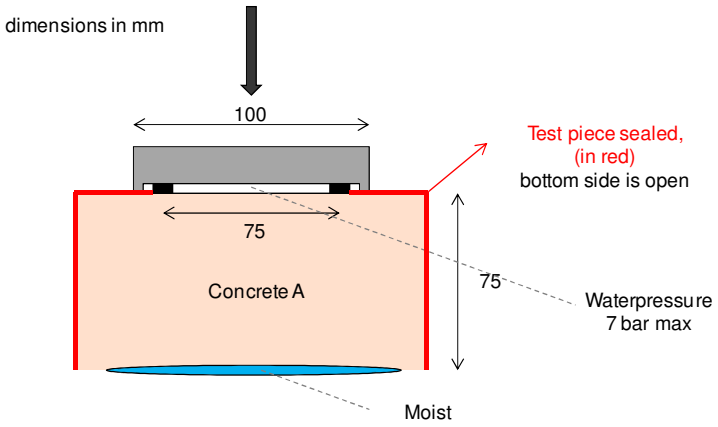

Figure 1. Configuratiion A

Configuration B 2 layer reference test piece without PC Elastoswell and in the lower concrete a gap of about 1 mm. Through this configuration we want to determine at what time the test pieces will leak at a water pressure of 7 bar. To ensure that the water pressure is sufficiently present on the test surface the concrete is drilled with a diamond drill. Below is a schematic representation of the test pieces used in configuration B.

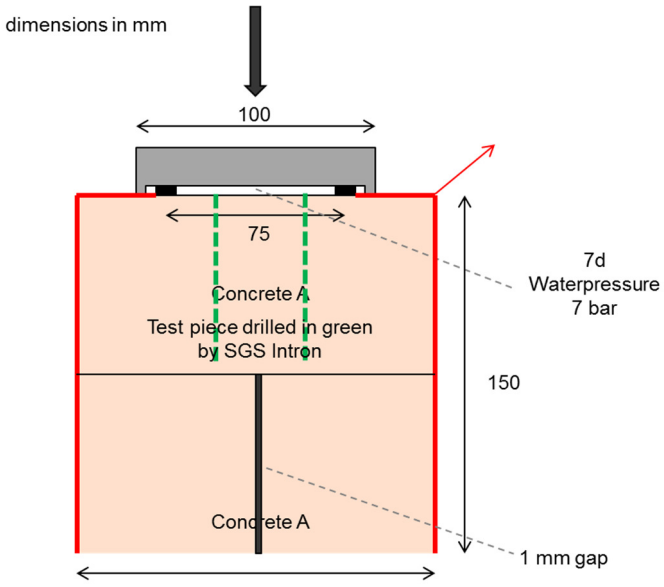

Figure 2. Configuration B

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Configuration C

2 layer PC Elastoswell test piece and in the lower concrete a gap of about 1 mm. Through this configuration we want to determine at what time the PC Elastoswell test pieces will leak. To ensure that the water pressure is sufficiently present on the test surface the concrete is drilled with a diamond drill to just above the PC Elastoswell. We start the water pressure in three steps: from 7 to 8 and then to 9.2 bar. During each step, we assess whether the test pieces will leak. Below is a schematic representation of the test pieces used in configuration C.

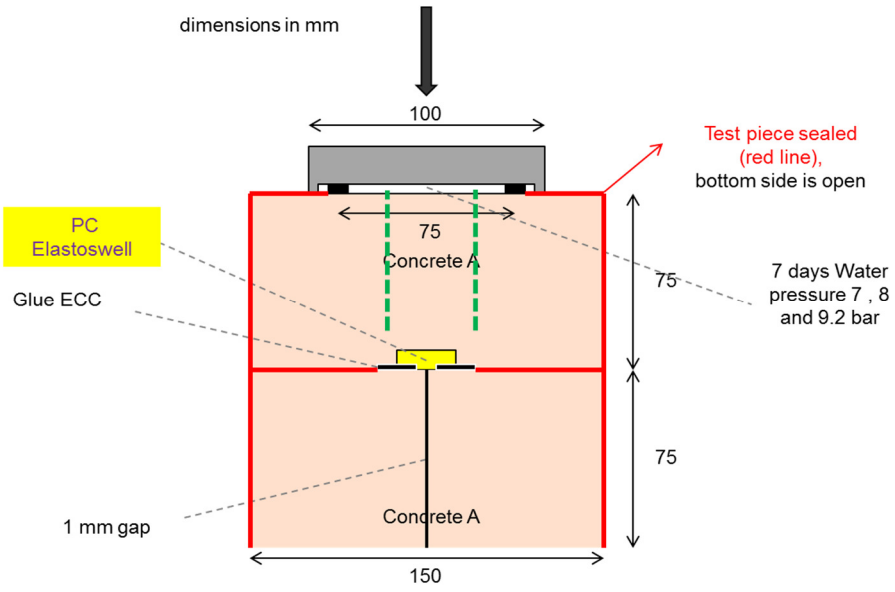

Figure 3. Configuration C

Sample Data

Sample-number	Sample-type	Sample-code	Acceptance-date
1 to 4	1 layer concrete	Configuration A	01/08/2017
5 to 8	2 layer concrete without PC Elastoswell	Configuration B	01/08/2017
9 to 12	2 layer concrete with PC Elastoswell	Configuration C	01/08/2017

All test pieces were made by TRADECC Belgium and handed to SGS Intron in Sittard.
Photos of the samples supplied are listed in Annex A.

Methods

Analysis	Method	Q	u
Water pressure	SGS INTRON		

Q = Accredited by RvA, u = Subcontracted, Qu = Accredited with Subcontractor

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Results

Test	Leakage	Time Saturation	Remark
Pretest configuration A, 7 bar	Yes	4 hours	fully saturated
Pretest configuration B, 7 bar	Yes	24 to 48 hours	fully saturated, and leakage visual.
Test configuration C, 2 days 7 bar	No	-	
Test configuration C, 5 days 8 bar	No	-	
Test configuration C, 5 days 9,2 bar	No	-	peak pressure of 10 bar

When setting an average working pressure of 9.2 bar, the peak load rises to 10 bar

Photo 1. Sample 5 to 7, configuration B Fully saturated top and leakage with water at 7 bar after 24 hours

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Configuration C, The following pictures of a split 2-layer test specimen with Elastoswell, after 9.2 bar test.

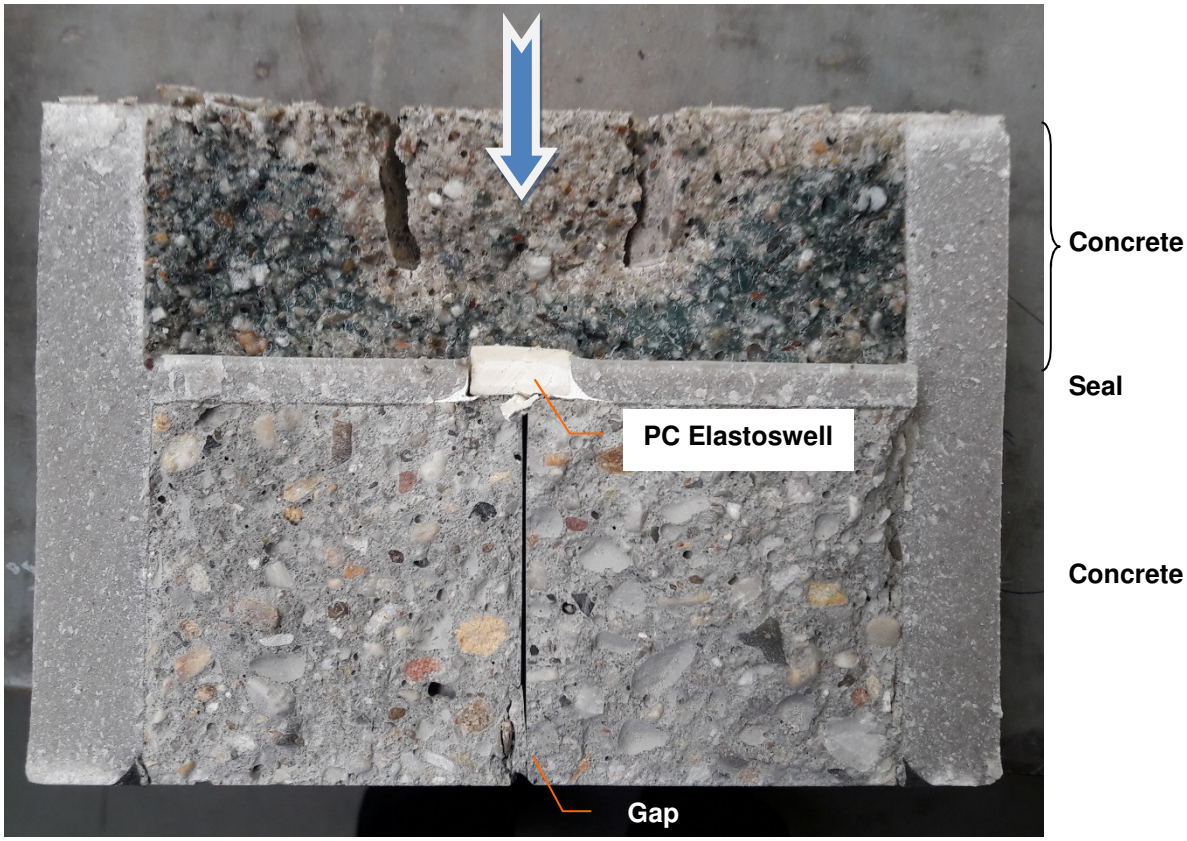

Photo 2. Configuration C, test piece is split after test. No leakage visible

Photo 3. Configuration C, Detail of PC Elastoswell, no leakage visible

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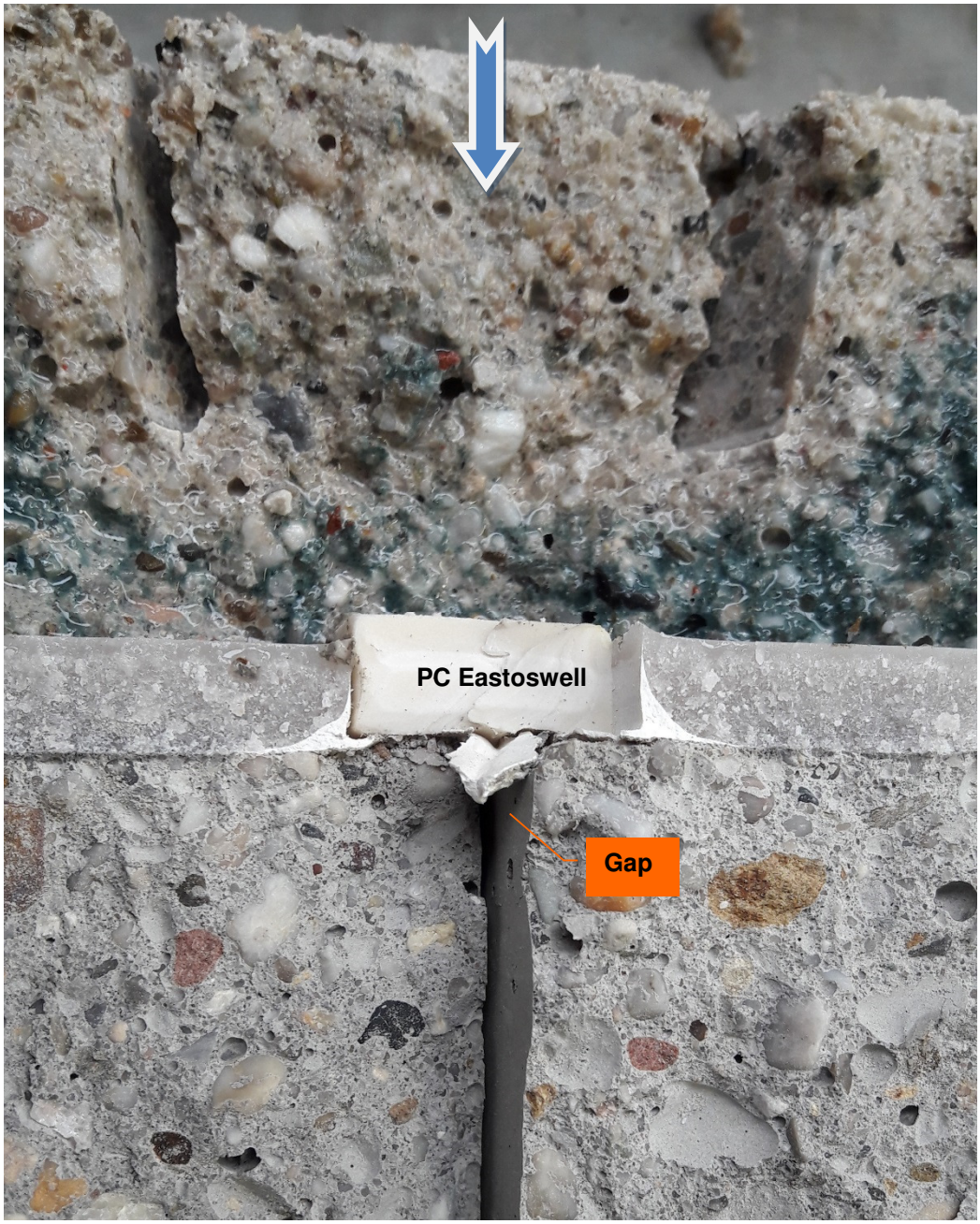

Photo 4. Configuration C, Detail of PC Elastoswell, no leakage visible

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ANNEX A. Pictures of received test samples Configuration A, B & C