

Kiwa BDA Testing B.V.



ankox GmbH
Attn. Mr M. Weichert
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Order number 0119-L-19 / 15-B-0867/3
Project Assessment of customized Polyfleece SX1000
Subject Supplementary statement on resistance against salt water/natural soil
Information K. van Zee
E-mail koert.van.zee@kiwa.nl
Date 23 April 2019
Our reference 190416829.GZ

Dear Mr Weichert,

The ankox product Polyfleece SX1000 is used in the HydroBond System of John Newton & Company Ltd., Tonbridge, UK under the trade name 403 HydroBond. It is used as a continuous waterproofing system to the underside of the raft and the outside of the walls of reinforced concrete earth retained structures, ranging from domestic basements to large civil engineering projects and other below ground sub-structures. The full system has been assessed by Kiwa BDA Expert Centre Building Envelope (ECBE), of which I am the chairman, in cooperation with Kiwa Ltd. in Derby, UK and been awarded with BDA Agrément® BAB 15-031/03/A.

MPA Braunschweig, Kiwa MPA Bautest and Kiwa BDA Testing have tested the 403 HydroBond (= Polyfleece SX1000) according to BS EN 13967, ETAG 005:2004 and BS ISO 1817. On the basis of this, ECBE has concluded (in the BDA Agrément®) with respect to durability: *The fully protected HydroBond System will provide under normal service conditions a durable waterproof covering for the life of the building in which it is installed; the expected life time of the building itself should be at least 60 years.*

Apparently you have proposed to use the product as part of the waterproofing system of the new MetNord Underground in Copenhagen. Because of the available ground conditions the principal requires the reassurance that the waterproofing system has a durable resistance against salt (chloride) water/natural soil conditions. Therefore you propose to laminate a layer of 290 g.m⁻² LDPE to the Polyfleece SX1000 layer as an extra protection (customized Polyfleece SX1000).

To my opinion this is an excellent idea. Specifically from my experiences as Professor (Material Science and Sustainability) at the Eindhoven University of Technology I know that LDPE has an extremely good resistance against salt groundwater. This and its high strength are major reasons why it is widely used as underground protection layer of large waste disposal depots. There are many scientific publications available to support my opinion, see some examples in the attachment.

This statement is supplementary to the original statement issued as project number 15-B-0867, dated 10 December 2015.

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Based on my experiences with both Polyfleece SX1000 and LDPE I can state the following:
There is no known scientific indication for serious changes of the characteristic properties of LDPE due to contact with salt water for the life of the building, respectively a period of 100 years. The fully protected and correctly installed customized Polyfleece SX1000 System will provide under these salt water / ground conditions a durable waterproof covering for the life of the building in which it is installed (= 100 years).

This statement has not been reviewed. This supplementary statement shall only be read and used in coherence with the original statement 15-B-0867, dated 10 December 2015. By request of the principal the company name Stekox GmbH has been changed to ankox GmbH (See attachment II).

Remaining yours faithfully,
With kind regards,

Chris van der Meijden, MSc
technical director


Kiwa BDA Testing B.V.

K. van Zee
manager