



CZECH TECHNICAL UNIVERSITY IN PRAGUE
FACULTY OF CIVIL ENGINEERING – TEST LABORATORY
No. 1048 accredited by ČIA according to
ČSN EN ISO/IEC 17025:2005
Thákurova 7, 166 29 Praha 6



L 1048

SPECIAL LABORATORY OL 124

Tel.: +420224354806

Fax: +420233339987

Number of issues : 2

Issue Number : 1

Number of pages : 3

Page Number : 1

Order No: 8601712A0000

TEST REPORT No: 124015/2017

upon the test : **Radon diffusion coefficient of the waterproofing material BLOWERPROOF LIQUID carried out in accordance with the K124/02/95 method**

Client:

Hevadex
Alfons Braeckmanlaan 237A
9040 Sint-Amandsberg
Belgium

Date of issue: 5.4.2017

Approved by:



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Doc. Ing. Martin Jiránek, CSc.
head of OL 124 laboratory

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The measurement of the radon diffusion coefficient of the BLOWERPROOF LIQUID water based flexible polymer emulsion was performed in accordance with the requirements for determination of the radon diffusion coefficient stated in the K124/02/95 test method. The test was carried out during the period from 24.3.2017 to 5.4.2017.

Test samples

Test samples were cut from the material handed by the client (Roland Vaes) on 22.3.2017. The samples were registered with marks 7/17/J (1 to 4) by M. Jiránek. The test samples were 160 mm in diameter and their thickness varied from 1,12 mm to 1,15 mm.

Test method

Radon diffusion coefficient was measured according to the accredited method K124/02/95. The tested sample is placed between two containers. Radon diffuses from the lower container, which is connected to the radon source, through the sample to the upper container. When the steady state concentration profile within the sample is reached, the growth of radon concentration in the upper container is measured. From the known time dependent curve of the radon concentration increase in the upper container the radon diffusion coefficient can be calculated. The test method was approved by the State Office for Nuclear Safety on 6.8.1998.

Laboratory conditions

BLOWERPROOF LIQUID – material

Steady state radon concentration in the lower container: $45,8 \pm 1,1$ MBq/m³

Radon supply rate into the upper container: $2,6 \pm 0,9$ Bq/m³s

Measuring device: radon monitor RDA 200 (N12), micrometer (N11)

Laboratory temperature: $21^{\circ}\text{C} \pm 2^{\circ}\text{C}$

Relative humidity of air in the laboratory: $37\% \pm 4\%$

Pressure difference between the lower and the upper containers: 0 Pa

Test results

The results of performed tests are compiled in the following table:

TESTED MATERIAL	RADON DIFFUSION COEFFICIENT D (m ² /s)	
	mean value	uncertainty
BLOWERPROOF LIQUID	3,3.10 ⁻¹²	± 0,3.10 ⁻¹²

The stated uncertainty of the measurement is the uncertainty with the coefficient k = 2, which for the normal distribution corresponds to the probability of coverage approx. 95 %.

Recommendation

Applicability of the tested material for a radon-proof product can be in a particular case considered in accordance with national building codes or standards.

The test was performed by: Doc. Ing. Martin Jiránek, CSc.

The report was prepared by: Doc. Ing. Martin Jiránek, CSc.


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test specialist