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upon the test : **Radon diffusion coefficient of the
MARISEAL® 600 waterproofing coating carried out in
accordance with the K124/02/95 method**

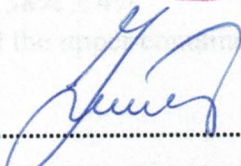
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Approved by:




Prof. Ing. Martin Jiránek, CSc.
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The measurement of the radon diffusion coefficient of the MARISEAL® 600 (a liquid applied, bitumen modified polyurethane waterproofing coating) 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 12.10.2018 to 25.10.2018.

Test samples

Test samples were cut from the material handed by the client (M. Křivka) on 9.10.2018. The samples were registered with marks 40/18/J (1 to 4) by M. Jiránek. The test samples were 160 mm in diameter and their thickness varied from 2,48 mm to 2,92 mm.

Test method

Radon diffusion coefficient was measured according to the accredited method K124/02/95 (method C of ISO/TS 11665-13). 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

MARISEAL® 600 – material

Steady state radon concentration in the lower container: $46,9 \pm 0,5 \text{ MBq/m}^3$

Radon supply rate into the upper container: $13,3 \pm 2,4 \text{ Bq/m}^3\text{s}$

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: $38\% \pm 4\%$

Pressure difference between the lower and the upper containers: $1 \text{ Pa} \pm 1 \text{ Pa}$

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
MARISEAL® 600	$3,6 \cdot 10^{-11}$	$\pm 0,3 \cdot 10^{-11}$

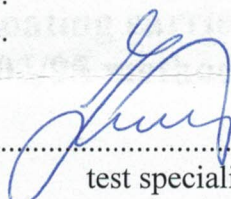
The stated uncertainty of the measurement is the uncertainty with the coefficient $k = 2$, which for the normal distribution corresponds to the probability of coverage approx. 95 %.

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: Prof. Ing. Martin Jiránek, CSc.

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


test specialist

end of the report