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TECHNICAL INFORMATION

Radon resistance and radon transmittance of the waterproofing material BLOWERPROOF LIQUID

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Radon diffusion coefficient D of the Blowerproof Liquid waterproofing material was determined by the accredited test laboratory No.1048 of the Czech Technical University in Prague, Faculty of Civil Engineering, special laboratory OL124. Based on the test report No. 124015/2017 issued on 5.4.2017, the radon diffusion coefficient $D = (3,3\pm0,3).10^{-12}$ m^2/s.

Radon diffusion coefficient D stated in the test report mentioned above is a material constant that shows the ability of radon to diffuse in the material.

The ability of a waterproofing product to form an efficient barrier against radon diffusion is expressed by the **radon resistance R_{Rn}** or the **radon transmittance T_{Rn}** that are defined according to the following equations.

$$R_{Rn} = \frac{\sinh(d/l)}{\lambda \cdot l} \qquad [s/m]$$

$$T_{Rn} = \frac{1}{R_{Rn}} = \frac{\lambda \cdot l}{\sinh(d/l)} \qquad [m/s]$$

where d is the dry thickness of the product [m], λ is the radon decay constant [$2,1.10^{-6}$ s^{-1}] and l is the radon diffusion length in the material [m] calculated as follows: $l = \sqrt{D/\lambda}$. Radon resistance and radon transmittance values of the tested product depending on its dry thickness are shown in the following table. Greater value of the radon resistance means better barrier properties.

Radon resistance and radon transmittance values for specified thicknesses

d [mm]	D [m^2/s]	l [m]	R_{Rn} [s/m]	T_{Rn} [m/s]
0,5			156.10^6	$6,4.10^{-9}$
0,6			189.10^6	$5,3.10^{-9}$
0,7	$3,3.10^{-12}$	$1,25.10^{-3}$	223.10^6	$4,5.10^{-9}$
0,8			259.10^6	$3,9.10^{-9}$
0,9			297.10^6	$3,4.10^{-9}$
1,0			336.10^6	$3,0.10^{-9}$

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.

References

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