

Radon Diffusion Coefficient In Radon Proof Membranes

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Radon Diffusion Coefficient In Radon

RADON DIFFUSION COEFFICIENT IN RADON-PROOF ...

International Journal on Architectural Science, Volume 1, Number 4, p149-155, 2000 149 RADON DIFFUSION COEFFICIENT IN RADON-PROOF MEMBRANES DETERMINATION AND APPLICABILITY FOR THE DESIGN OF RADON

RADON DIFFUSION COEFFICIENT-A MATERIAL PROPERTY ...

Radon diffusion coefficient for the majority of materials varies in the range 3×10^{-12} and 3×10^{-11} m²/s From Fig3 it is also evident that relatively long scatter lines were obtained for two material categories - for bitumen membranes with Al foils and for polymer modified bitumen

The Radon Diffusion Length as a Criterion for the Radon ...

The Radon Diffusion Length as a Criterion for the Radon Tightness G Keller and B Hoffmann Institute of Biophysics, University of Saarland, Universitätsklinik, D66421 Homburg-Saar, Germany INTRODUCTION The rising public wish for natural residing, new rules for energy and resource saving construction and

NEW TECHNIQUE FOR THE DETERMINATION OF RADON ...

NEW TECHNIQUE FOR THE DETERMINATION OF RADON DIFFUSION COEFFICIENT IN RADON-PROOF MEMBRANES M Jira'nek1,* and A Fron'ka2 1Czech Technical University, Faculty of Civil Engineering, Tha'kurova 7, 166 29 Praha 6, Czech Republic 2National Radiation Protection Institute, Bartos'kova 28, 140 00 Praha 4, Czech Republic This paper describes a new device and a method to ...

DETERMINATION OF RADON DIFFUSION COEFFICIENT AND ...

DETERMINATION OF RADON DIFFUSION COEFFICIENT AND RADON L OUFNI Nuclear Physics and Techniques Laboratory (GOTEA), Faculty of Sciences and Techniques, University Moulay Ismaïl, BP 509 Boutalamine, 52000 Errachidia

REPORT Radon Diffusion coefficient in FOAMGLAS cellular ...

where C is the radon concentration within the membrane (Bq m^{-3}), D is the radon diffusion coefficient ($\text{m}^2 \text{s}^{-1}$), λ ($21 \cdot 10^{-6} \text{ s}^{-1}$) is the radon decay constant, x the membrane's thickness (m) and t the time (s) One attempt for the solution to this equation is by means of numerical methods such as Finite Element Methods (FEM) [10, 11] With this methodology, it is possible to get the value of

Transient radon diffusion through radon-proof membranes: A ...

The following paper is focused on the numerical modelling of the transient radon diffusion through radon-proof membranes during the measurement of their radon diffusion coefficient The major aim of such numerical modelling is to increase the accuracy of radon diffusion coefficients derived from the measured data sets

NUREG/CR-1138, 'Diffusion and Exhalation of Radon from ...

radium and radon were used to calculate a radon diffusion coefficient, the fraction of emanating radon and the flux of radon across the tailings-air interface A diffusional model, was developed that accounted for the non-uniform radium concentrations that occur with depth in tailings piles

Testing permeability of building materials for radon diffusion

Keywords: Radon, Permeability, Diffusion, LR-115 detectors 1 Introduction The transport phenomenon of radon through diffusion is a significant contributor to indoor radon entry 1-2 The diffusion of radon in dwellings is a process determined by the radon concentration gradient across ...

Measurement of radon diffusion and solubility constants in ...

Measurement of radon diffusion and solubility constants in membranes M Wojcik ' Received 6 September 1990 and in revised form 26 February 1991 thickness of the membrane and D is the diffusion coefficient [$\text{cm}^2 \text{ s}^{-1}$], If the diffusion coefficient is isotropic and constant in time, and if there is a linear relationship between the

RADON PERMEABILITY AND RADON EXHALATION OF ...

RADON PERMEABILITY AND RADON EXHALATION OF BUILDING MATERIALS G Keller, B Hoffmann and T Feigenspan For the determination of the radon diffusion coefficient and the exhalation rate, we used an online radon-measuring device (Figure 1), in which the positive charged polonium-218-ions were Our investigations on radon exhalation of

Finite element modeling of radon distribution in natural ...

effective diffusion-coefficient varies between about $10^{-4} \text{ cm}^2 \text{ s}^{-1}$ and $10^{-2} \text{ cm}^2 \text{ s}^{-1}$ for different media The diffusion length, L , was calculated from the diffusion coefficient, D with $L = \sqrt{D/\lambda}$ and λ is the decay constant of ^{222}Rn that equals $21 \times 10^{-6} \text{ s}^{-1}$ Therefore, the radon atoms tend to migrate from a

Method For Measuring Diffusion Coefficient of Thin Films ...

a thin film by monitoring the accumulation of radon that penetrates the film It will be demonstrated that a virtual diffusion coefficient of $10^{-10} \sim 10^{-11} \text{ m}^2 \text{ s}^{-1}$ and about 4 hours for a diffusion coefficient of $10^{-13} \text{ m}^2 \text{ s}^{-1}$ This three order-of- Method For Measuring Diffusion Coefficient of ...

Measurements & Analysis of the Transport of Radon Through ...

radon concentrations due to the resistance of the soil to diffuse the soil gas Finally, a linear diffusion model which forced its boundary conditions was used to determine an effective radon diffusion coefficient Another investigation into the diffusion of radon gas through concrete was ...

Study of the Partition Coefficient and the Diffusion ...

•Methods for radon measurements are developed, based on the high radon absorption ability in polymers such as Makrofol DE and N •The

absorption could be described by the partition coefficient K and the diffusion length L and they both depend on the temperature

INTERNATIONAL ATOMIC ENERGY AGENCY VIENNA ISBN ...

radon diffusion equations Measurement and Calculation of Radon Releases from NORM Residues Measurement of the diffusion coefficient 20 4 estimation of Variations in radon exhalation flux 24 41 radon emanation coefficient (E

U.S. NUCLEAR REGULATORY COMMISSION June 1989 ...

to meet the EPA radon flux criterion is the radon diffusion coefficient of the cover The value of the radon diffusion coefficient is very sensitive to the availability of interconnected air-filled pores and therefore, at moderate to high moisture contents, to the cover moisture content and porosity The parameter

The Diffusion of Radon Gas Mixtures - JSTOR

the given gas mixture have been made, and the coefficient of viscosity of the lighter gas at various temperatures together with the coefficient of diffusion of the two gases is known Thermal diffusion measurements for radon-hydrogen and radon-helium gas mixtures have already been made by one of us (Harrison 1937), radon

RADON GAS DIFFUSION COEFFICIENT IN MOISTURIZED SOIL ...

diffusion coefficient that greatly depends on various factors such as temperature, moisture, porosity and effective permeability Among them, moisture has an important effect on diffusion coefficient [2] Two general methods have been used to determine the Radon diffusion coefficient: Steady state ...