Measurements of radon 220 emanation from main building materials

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Rn is a naturally occurring radioactive inert gas and comes from the radioactive decay of uranium. The two isotopes of the element Rn that are important in health protection are ^{222}Rn and ^{220}Rn which are part of the decay series originating from ^{238}U and ^{232}Th, respectively. ^{222}Rn is the first decay product of the naturally occurring element ^{226}Ra. Materials containing ^{226}Ra create an a-radiation hazard for the human respiratory system because of the airborne progeny of its daughter ^{222}Rn. When building materials with a high radium concentration are being used, the radon progeny in ordinary buildings may increase the radiation exposure of the public to unacceptable levels. In this study, the exhalation rate of radon from various commonly used building materials was determined by placing the materials in a closed container and measuring the current and average Rn levels. The preliminary data obtained was useful in identifying the building materials at risk and having elevated ^{222}Rn concentrations.

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