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**Radioactivity and radon exhalation rate in common tiles used as construction materials in Japan**

Ken Yamada1, John Smith2, Taro Rokkasho3

1 Rokkasho University, Japan, 2 Aomori Medical Institute, Japan, 3 Hachinohe Science Institute, Japan

Some construction materials contain relatively high concentrations of natural radioactive nuclides (uranium and thorium series). In some cases, houses employing such construction materials have enhanced radiation and radioactivity levels. It is possible that air dose rate in indoor environment is enhanced and that radon exhaled from the natural radionuclides accumulates in indoor air. European Commission recommends principles for the purpose of protection against gamma rays emitted from construction materials. In the present study, construction materials (common tiles) were collected from a company. Concentrations of natural radioactive nuclides and radon exhalation rates were measured. Common tiles were also measured before and after baking. These parameters changed before and after the baking. In particular, radon exhalation rates were significantly reduced after baking. This could be because pore space existed in the materials was reduced by baking and the number of radon atoms emanated into the pore space was reduced.