

# Radon and Radon Daughter Products in Building Materials

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# Introduction

- Radiation is everywhere
- Radon is found in soil and rocks
- Try to calculate how much radiation is emanated from building materials, which are made out of soil and rocks
- How to make everything safer?

# How to Measure Radiation?

- Difficult to measure because have different standards
- Have to be normalized and compared to baseline to determine the amount of relative radiation
- Have to take into consideration many aspects... pressure, moisture, size and shape.

# Radiation in Zircon Tile

- Radiation found in zircon tiles
- Zircon contains 106 times as much radiation as regular sand
- People exposed receive 1.5 times as much ionizing radiation
- Believe it is a reason why general public receives more ionizing beta-radiation

# Clay Bricks

- Used Cellulose Nitrate Film to detect Radon
- Radiation came from the surface of the bricks and not internally unlike many others
- Measured around 22mBq-40mBq

# Different Building Materials

- Clay, Red Brick, Sand Brick, Granite
- Radiation is found by multiplying backscatter coefficient x initial emanating radiation
- Backscatter is very important and related to geometry

# Moisture in Concrete

- 50-60% Moisture Radon Transport increases linearly
- 70-80% Reaches a Peak and decreases dramatically
- Helps determine how much concrete to pour and use

# Conclusion

- This research is very important because the more information we have about building materials... the more we can make our surroundings safer for everyone!