

# **Correlation Between Radon Exhalation And Radium Content In Granite**

## **Samples Used As Construction Material In Saudi Arabia**

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### **Summary**

Measurements of radon exhalation for a total of 205 selected samples of construction materials used in Saudi Arabia were carried out using an active radon gas analyzer with an emanation container. It was found that granite samples were the main source of radon exhalation. The radon exhalation rates per unit area from these granite samples varied from below the minimum detection limit up to 13.1 Bq m<sup>(-2)</sup> h<sup>(-1)</sup> with an average of 1.5 +/- 1.9(1 sigma) Bq m<sup>(-2)</sup> h<sup>(-1)</sup>. The radium contents of 27 granite samples were measured using an HPGe-based gamma spectroscopy setup. The Ra-226 content of the granites varied from below the minimum detection limit up to 297 Bq kg<sup>(-1)</sup>, with an average of 83 +/- 73 (1 sigma) Bq kg<sup>(-1)</sup>. The linear correlation coefficient between exhaled radon and radium content was found to be 0.90. (c) 2005 Elsevier Ltd. All rights reserved.

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