

Natural Rock Sample Radon Calibration

<p>Avg. of Four Readings:</p> <p>Rock Sample Radon: _____ pCi/L _____ Bq/m³</p> <p>Temperature: _____ °C</p> <p>Relative Humidity: _____ %</p> <p>Ambient Radon: _____ pCi/L _____ Bq/m³</p>	<p style="text-align: center;">Devices</p> <p>Rock Sample SN: _____</p> <p>Reference Unit:</p> <p><input type="checkbox"/> RAD8 <input type="checkbox"/> RAD7</p> <p>SN: _____</p> <p>Cal Date Y/M/D: ____/____/____</p>
---	--

Measurement

This Natural Rock Sample was kept sealed for 30+ days. A recently calibrated, standard RAD8 was first purged with dry, ambient air for not less than 10 minutes. The RAD8 was connected to the Natural Rock Sample with a standard Natural Rock Sample Tubing Set and a Small Drying Tube connected between the Natural Rock Sample and the RAD8 inlet. The RAD8 was set up to run a set of 6 x 30-minute Cycles. The ball valves on the Natural Rock Sample were opened and a test started. After the measurement, the last four readings were averaged.

Re-Humidifying

After completion of the run (three hours later), the Small Drying Tube was removed and the outlet tube disconnected to form an open loop with the Natural Rock Sample upstream of the RAD8. The RAD8 was set to 'Purge' with ambient-humidity air, and the RH monitored. This drying process was continued until the RH in the Natural Rock Sample reached equilibrium with the humidity in the room, after which the purge was stopped, the ball valves were closed and the date of closure noted on the Natural Rock Sample.

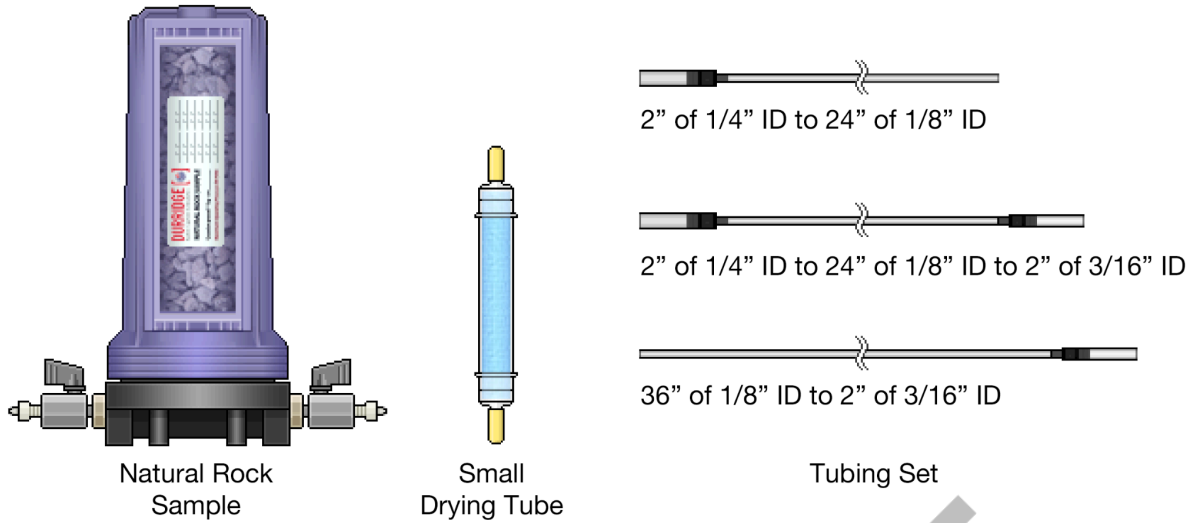
Any standard RAD8 that is in calibration will give the same result to within 15% provided that:

- 1) The Natural Rock Sample was thoroughly re-humidified after the previous use,
- 2) The Natural Rock Sample has been sealed for 30+ days
- 3) Exactly the same setup, as described above, is used.

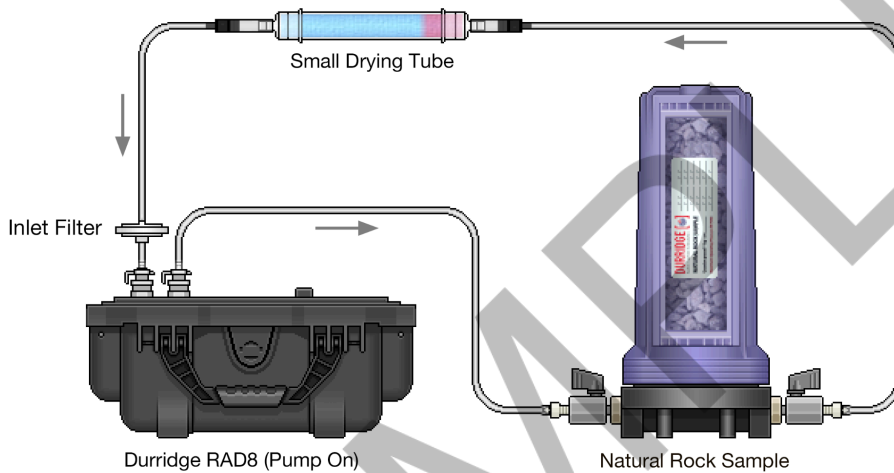
Signature: _____ Date (Y/M/D): _____

Notes on Natural Rock Sample Calibration

1. Natural Rock Sample Components Used:

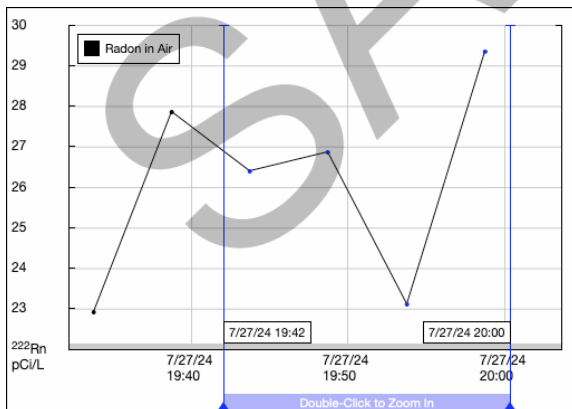


2. Natural Rock Sample Test Configuration:



3. Analysis Using Capture Software

(Last four records examined and averaged):



4. Non-Standard Setups

If V_{setup} is the total volume of the standard setup and R_{av} is the measured average concentration with the standard setup, the total radon in the system is $R_{\text{av}} * V_{\text{setup}}$. For a non-standard setup, with different total volume, the average radon concentration of the four specified readings, R_{avNew} , will be:

$$R_{\text{avNew}} = R_{\text{av}} * (V_{\text{setup}} / V_{\text{setupNew}})$$

The standard setup component volumes are: Natural Rock Sample 1000 ml, Tubing Set 4 ml, Small Drying Tube 15ml and **RAD8 590 ml or RAD7 800 ml**. Thus the total standard setup volume, V_{setup} , is:

**1,609 ml (RAD8) or
1,819 ml (RAD7)**