PIM 2025 – Permeability intercomparison measurements

Information on Comparison measurement of soil gas permeability at radon reference sites in the Czech Republic

1. General information – purpose of measurement

With respect to the success of the first PIM 2023, we organize the second *soil permeability intercomparison measurement*. The challenge is simple – to continue with intercomparison measurements of the second parameter used in radon risk mapping. It should serve for verification of field in situ soil gas permeability measurements performed by single organizations. The tests will be based on the comparison of numerically reported permeability values k (m^2) by specified organization with other participants of comparison measurement.

2. Term and place of soil gas permeability comparison measurements PIM 2025

Soil gas Permeability Intercomparison Measurement (PIM) at radon reference sites 2025 will be held at the same time (i.e. on Monday, 15th September 2025) and at the same areas as radon comparison measurements (two radon reference sites Cetyne and Buk in the Czech Republic). Faculty of Science of the Charles University in Prague is the administrator of radon reference sites. The detailed info about radon reference areas is included in the documentation dealing with RIM - radon intercomparison measurements.

3. Soil gas permeability comparison measurement PIM 2025

Soil gas permeability comparison measurement at reference sites is organized for a group of participants. Each participating organization measures soil gas permeability in situ :

- at three permanently installed probes (standard "Neznal" probe, 12/2 mm) at stations with different permeability – at two stations in the neighbourhood of radon reference area Cetyne and at one station in case of radon reference area Buk - at the reference depth of 0.8 m and/or using other measuring probes in the immediate vicinity. Those participants, who can use the installed probes for their permeability measurements, will take the measurements first. Then, if necessary, it will be possible to use other measuring probes/rods in the immediate vicinity and perform permeability measurements (preferably at the same depth, i.e. 0,8 m);
- using two flow rate measurement models with different "permeability", prepared at the radon reference area Buk, available for connection with various measuring devices for performing permeability measurements.

Each organization reports data on the soil gas permeability expressed in the format - X.X . 10^{-Y} m^2 at each measuring station filled in a provided form (Report). The form with results (Report) should be mailed to the Administrator: ondrej.salek@natur.cuni.cz by 30 September 2025.

4. Evaluation of soil gas permeability comparison measurement

The evaluation of permeability comparison measurements will be based on comparison of data reported by participating organization with the reported permeability data of the whole group of participants (for each measuring station separately). All results will be anonymous; each organization will be denoted by a code.

5. Results of soil gas permeability comparison measurement PIM 2025

Each participant of PIM 2025 will receive his Protocol of assessment showing permeability data of single organizations (organizations marked in codes) at each of 5 measuring stations. Protocols of assessment and results of intercomparison measurement PIM 2025 will be available after all participants will pass over their data on measured permeability at measuring stations and will be mailed by email to reported email addresses of each participating organization in October 2025.

6. Transport Prague – reference sites (the same like in case of radon intercomparison)

Organizers of the workshop on request will provide transport Prague - reference sites (See Questionnaire).

7. Preliminary time schedule

Monday, 15th September 2025

8.00 Departure from Prague

9.30 - 12.30 Measurement at reference site Cetyne (together with RIM 2025)

13.30 - 16.00 Measurement at reference site Buk (together with RIM 2025)

16.00 Departure to Prague

Note: Refreshment (tea, coffee, beer, sausages) will be available at reference site Buk during the whole radon/permeability comparison measurement.

REPORT

on soil gas Permeability Intercomparison Measurement PIM 2025 at radon reference sites in the Czech Republic

Name of organization:
Country:
E-mail of contact person:

Date of measurement:
Operator (name):

Permeability measurements
Type of measuring probe at Cetyne area ("common "Neznal" probe, other probe):

Permeability equipment (RADON-JOK, other):

Model of instrument (any available info – "prototype based on .. " and/or f.e. serial No. and/or year of production and/or any other …):

Table: Permeability determined at measuring stations

	Depth	k
Station No.	m	m^2
1 (Cetyne)		
2 (Cetyne)		
3 (Buk)		
4 (Model 1 Buk)		
5 (Model 2 Buk)		

Depth = depth of permeability measurements at station 1, 2 and 3

Please fill in the form by computer in Word editor and send to the e-mail address:
ondrej.salek@natur.cuni.cz