



The name of the infrastructure element

RADOSYS-2010 Installation for the development and reading of CR-39 radon track detectors



| No. | RELEVANT INFORMATIONS | |
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| 1. | Technical characteristics | <p>The RADOSYS-2000 installation allows for the analysis of measurements for the screening of radon activity concentration in the indoor air of buildings, in large volume, according to legislative requirements. It is the only device of its kind in the eastern part of Europe that meets the mandatory passive measurement requirements for radon concentration, as stipulated in Directive 2013/59 Euratom of the Council dated December 5, 2013, establishing basic safety standards for the protection against the dangers arising from exposure to ionizing radiation and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom, and 2003/122/Euratom.</p> <p>Moreover, in accordance with the current legislative requirements in Romania, there is an obligation to conduct measurements to determine the radon concentration in the indoor air of all high-occupancy public buildings, such as schools, kindergartens, hospitals, dormitories, nurseries, universities, buildings where workplaces are organized, or any other buildings with public access or similar use. The current national legislation imposing these measurements is represented by legislative and normative acts, including Government Decision No. 526/2018 and the Order of the CNCAN President No. 153/2023 regarding the Methodology for determining the radon concentration in the indoor air of buildings and workplaces, as well as other complementary regulations.</p> <p>The RADOSYS-2000 installation possesses all the technical components to ensure the traceability of the measurement results and their validity assurance.</p> |
| 2 | General characteristics | <p>RADOSYS-2000 Installation for the development and reading of CR-39 track detectors, consisting of:</p> <ol style="list-style-type: none"> 1. Radometer Optical Microscope unit S/N 1226 2. Radobath Development Unit S/N 195 3. Software for processing and analyzing tracks <p>Manufacturer (country of origin): RadoSys kft., Budapest, Hungary Serial/Model:</p> <ol style="list-style-type: none"> 4. Radometer Optical Microscope unit S/N 1226 5. Radobath Development Unit S/N 195 6. RadoMeter RSV10 v4.43A Software for processing and analyzing tracks <p>Inventory number: 238491 Production date: 2010</p> |

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| | | <p>Commissioning date: 03.01.2011, through Commissioning Report: 03.01.2011</p> <p>Features/Performance:</p> <ul style="list-style-type: none"> - The RADOSYS-2000 installation represents a complete set of instruments dedicated to measuring the activity concentration of radon with track detectors (integrated measurements). - Operation is based on the concept of counting the tracks left by α particles on the surface of CR-39 type detectors (RSKS, Raduet). - Radometer is an autofocusing Microscope-scanner; compatible with Windows or Linux operating systems. - α radiation sensitivity: 2.9 tracks/cm2 kBqh/m3, insensitive to other types of radiation. - The microscope magnifies between 100x-400x spatially, with the ability to analyze 12 detectors on a support, inserted at once, with a scanning and counting rate of 25 seconds/detector. The scanning area of tracks on the detector is 51.7 mm². - Track recognition capacity: single or superimposed tracks, up to 150 tracks/mm². - Radonbath development unit has a capacity of 432 detectors. |
| 3 | Fields of utility | <ul style="list-style-type: none"> - Advancing research on monitoring radon exposure inside buildings in Romania and its impact on public health. - Systematic passive measurements of radon concentration and indoor air quality monitoring within buildings. - Determining radon activity concentration in the air through passive methods using the RADOSYS-2010 installation, in accordance with the CNCAN Designation Certificate No. LI 04_LiRaCC_UBB/2018/, supplemented with LI07_LiRaCC_UBB/2020 and LI05_LiRaCC_UBB/2021, complying with EN ISO/IEC 17025 standard and national/European requirements. - The field of utility aims to conduct radon measurements in the indoor or outdoor air of buildings, including public buildings, residential homes, workplaces, underground spaces (caves, mines), or other areas with radon potential, of interest to the general public or employees. This is in accordance with the current legislative requirements in Romania |

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| | | (HG526/2018) and aligns with the principles of sustainable development and the guidelines of Directive 2013/59/EURATOM. |
| 4 | Specialized staff/operator(s) (name and status) | <p>Scientific Researcher I PhD. Ing. Alexandra Cuoș, Laboratory Chief, Operating License CNCAN level II, no. DCCN 18/2021</p> <p>Scientific Researcher III PhD. Bety-Denissa Burghel, Passive Measurement Responsible, Operating License CNCAN level II, no. DCCN 19/2021</p> <p>Lect. PhD. Tiberius Dicu, Technical Coordinator/scientific LiRaCC</p> <p>PhD Ștefan Florică</p> |
| 5 | Conditions for use/services (internal UBB/external UBB) | <p>Availability for internal and external use at UBB, following the procedures outlined in the QUALITY MANUAL associated with the LiRaCC Laboratory, CODE: MC – LiRaCC, Edition: 2, Revision: 1, and the technical documentation designating the "Constantin Cosma" Radon Testing Laboratory as a notified body through letter no. 17978/22.09.2017, registered with CNCAN under no. 5992/28.09.2018, as well as in accordance with national and international standards in the field of radon.</p> <p>The rules for usage are detailed in the extended technical documentation, which can be consulted in the QUALITY MANUAL associated with the LiRaCC Laboratory, CODE: MC – LiRaCC, Edition: 2, Revision: 1. The archive containing all documents, bulletins, and reports related to intercomparisons and calibrations of radon equipment within the LiRaCC Laboratory is also presented.</p> <p>Manufacturer's website: http://www.radosys.com/</p> |
| 6 | Operating schedule | Daily, within the interval 8-16 (8 AM to 4 PM) |