

# Hellenic Accreditation System



Annex F1/20 to the Certificate No. 117-7

## SCOPE of ACCREDITATION

of the  
**Testing Laboratories**  
of the  
**GREEK ATOMIC ENERGY COMMISSION (EEAE)**

Materials / Products to be tested	Types of test / Properties to be measured	Applied Methods / Techniques to be used
Electrical tests		
Measurements in the vicinity of electric power transmission and distribution lines, in the vicinity of electric power system substations and close to electric installations, machinery and appliances.	Measurement of low-frequency magnetic and electric fields (5 Hz to 32 kHz): - Electric field strength (E) - Magnetic flux density (B)	ELOT EN 61786-1:2014 IEC 61786-2:2014 Common Ministerial Decision 3060 (FOR) 238 (Hellenic Gazette 512/B/25-4-2002)
Measurements in the vicinity of communication antennas, radio and television station antennas, mobile telephone base stations, radars, microwave wireless network stations.	Measurement of high frequency electromagnetic fields: - Electric field strength (E) (100 kHz to 40 GHz) - Magnetic field strength (H). (3 kHz –to1 GHz) - Power density (P) (10 MHz to 40 GHz)	Common Ministerial Decision 2300 (EFA) 493 (Hellenic Gazette 346/B/3-3-2008)

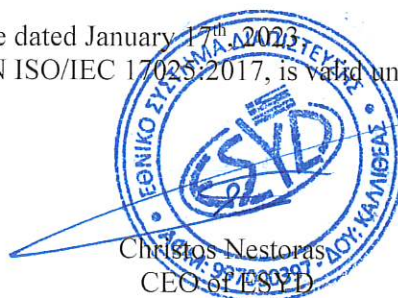
Materials / Products to be tested	Types of test / Properties to be measured	Applied Methods / Techniques to be used
Physical tests		
Personal whole body, extremity and eye lens thermoluminescence dosimeters	Measurement of dose equivalent in depth: 10 mm, Hp(10) 3 mm, Hp(3) 0,07 mm, Hp(0.07) for photon radiation.	In house method based on: ICRP 75:1997 IAEA GSR Part 3:2014 IAEA GSG-7:2018 EUR RP 160:2009 PD 101/2018 (A' 194) IEC 62387:2020
1. Foodstuffs & feedingstuffs, consumer products, urine, building materials, industrial products, soil, environmental samples with densities: 40 kg/m <sup>3</sup> – 2000 kg/m <sup>3</sup> 2. Smear tests and air filters with diameter: (40 – 50) mm	Radioactivity measurements in samples by gamma spectroscopic analysis, based on a High Purity Germanium detector (HPGe) Range: 55 to 1800 KeV	ISO 18589-3:2015 ISO 10703:2021 IAEA TRS 295:1989 PD 101/2018 (A' 194) ISO 20042:2019
Passive CR-39 detectors	Indoor Area Radon Concentration Range: 25 to 10000 kBq*h/m <sup>3</sup> Exposure time: 3 to 12 months	ISO 11665-1: 2019 ISO 11665-4: 2021 NRPB-R283:1996 PD 101/2018 (A' 194)
Drinking water, underground and surface water, wastewater and urine samples	Determination of uranium isotopes activity concentration in liquid samples by alpha-spectrometry Range: 3,75 to 8,88 MeV	ISO 13166:2020 Common Ministerial Decision Π/112/1057/2016 (Hellenic Gazette 241/B/09.02.2016) PD 101/2018 (A' 194)

Site of assessment: **Permanent laboratory premises, P. Gregoriou E' & Neapoleos, Ag. Paraskevi, Greece.**

Approved Signatories: **D. Koutounidis, E. Carinou, E. Karabetsos, A. Boziari, K. Potiriadis, K. Karfopoulos, K. Kehagia, M. Kolovou.**

This Scope of Accreditation replaces the previous one dated January 17<sup>th</sup>, 2023. The Accreditation Certificate No. **117-7**, to ELOT EN ISO/IEC 17025:2017, is valid until 21.01.2028.

Athens, July 21<sup>st</sup>, 2023



# Hellenic Accreditation System



Annex F2/19 to the Certificate No. **117-7**

## SCOPE of ACCREDITATION

of the

### Calibration Laboratory

of the

## GREEK ATOMIC ENERGY COMMISSION (EEAE)

Measurand / Calibration item	Range of measurement	Expanded measurement uncertainty (k=2)*	Remarks
Radiation measurements			
Ionization chambers and electrometers used in Radiotherapy in terms of $N_k$ and $N_{D,w}$	Energy: Co60 K <sub>air</sub> rate : 400 mGy/min (Apr. 2012) Dose rate in water: 400 mGy/min (Apr. 2012)	$N_k$ : 0,8 % $N_{D,w}$ : 0,9 %	IEC 60731:2011 IAEA TRS 469: 2009 IAEA TRS 277: 1987 IAEA TRS 381:1997 IAEA TRS 398:2000
Instruments used in Radiation Protection for the detection and measurement of gamma and X radiation: - Survey meters - Geiger - Scintillation detectors - Analog detectors - Ionization chambers	Energies: Cs137, x-ray (N40-N200) & Co60 Air kerma rate, K: 0,001 to 10 mGy/h (Cs137) 0,1 to 15 mGy/h (x-ray) 0,001 to 45000 mGy/h (Co60) H*(10) rate: 0,001 to 10 mSv/h (Cs137) 0,1 to 15 mSv/h (x-ray) 0,001 to 45000 mSv/h (Co60)	$N_k$ : 2,4 % $N_{H^*(10)}$ : 4,6 %	ISO 4037-1:2019 ISO 4037-2:2019 ISO 4037-3:2019 ISO 4037-4:2019 EAOT EN 61526:2013 EN 60846-1:2014 IEC 60846-2:2015 IAEA TRS 16:2000 ICRU 39:1985 ICRU 43:1988 ICRU 47:1992 ICRU 51:1993

Measurand / Calibration item	Range of measurement	Expanded measurement uncertainty (k=2)*	Remarks
Dosimeters used in Diagnostic Radiology: - Ionization chambers - Solid state detectors - Electrometers	Energies : x-ray RQR, RQR-M, RQT according to ISO/IEC 61267 qualities	N <sub>k</sub> : 2,2 % N <sub>PKA</sub> : 2,5 % N <sub>PKL</sub> : 3,0 %	ΕΛΟΤ EN 61674:2014 IEC 61267: 2005 IAEA TRS 457: 2007
Non invasive instruments used in diagnostic radiology for the measurement of the radiological parameters: - KVp-meters	High Voltage: 20 kV to 35 kV (mammographic applications) 50 kV to 150 kV (diagnostic applications)	2,0 %	IEC 61676:2002 + A1:2009 IAEA TRS 457: 2007
Personal dosimetric instruments: - Electronic dosimeters - Pen type dosimeters - TLD badges - Film badges	Energies : Cs137, x-ray N40-N200 (ISO Narrow) & Co60 Equivalent dose Hp(10) & Hp(0.07): 1μSv to 10 μSv	N <sub>Hp(10)</sub> : 4,6 % N <sub>Hp(0.07)</sub> : 4,6 %	ISO 4037-1:2019 ISO 4037-2:2019 ISO 4037-3:2019 ISO 4037-4:2019 ΕΛΟΤ EN 61526:2013 IEC 62387:2020 IAEA TRS 16:2000 ICRU 39:1985 ICRU 43:1988 ICRU 47:1992 ICRU 51:1993

\* Where uncertainty is accompanied by the corresponding unit, it is absolute, while where it is not accompanied by a unit, it is relative.

Site of assessment: **Permanent laboratory premises, P. Gregoriou E' & Neapoleos, Ag. Paraskevi, Attiki, Greece.**

Approved Signatories: **A. Boziari, E. Karabetsos.**

This Scope of Accreditation replaces the previous one dated January 17<sup>th</sup>, 2023.

The Accreditation Certificate No. **117-7**, to ELOT EN ISO/IEC 17025:2017, is valid until 21.01.2028.

Athens, July 17<sup>th</sup>, 2023

