Hellenic Accreditation System

Annex F2/6 to the Certificate No. 1197-2
SCOPE of ACCREDITATION
of the
Calibration Laboratory
of
PROTEM GROUP SA

Calibration item / Parameters	Range of measurement	Expanded measurement uncertainty (k=2) *	Remarks
Mass measurements			
			Static calibration according to Measurement and Control Institute guide WG00496: "A code of practice for the calibration of industrial process Weighing Systems", 2011. Calibration is performed on-site.
Automatic weighing systems of industrial processes	(1 to 1250] kg	$2{,}7 \times 10^{-4}$	Using OIML Class M2 standard weights of range 0,1 kg to 20 kg. Maximum available grouped load: 1252 kg.
	(100 to 10000] kg	$\sqrt{1{,}44 \cdot 10^{-8} \cdot I^2 + 4 \cdot \left(n - \frac{1}{2}\right) \cdot \frac{d^2}{3}}\ (kg)$	Using substitute loads. *I*: load in kg *d*: resolution in kg *n*: number of substitute loads
Non-automatic weighing instruments			According to guide EURAMET cg-18, v. 4.0:2015. Calibration is performed on-site.
	[0,1 to 5) kg	$4{,}0 \times 10^{-5}$	Using OIML Class M2 standard weights of range 0,1 kg to 20 kg. Maximum available grouped load: 1252 kg.
	[5 to 1250] kg	$2{,}7 \times 10^{-4}$	
	(100 to 10000] kg	$\sqrt{1{,}44 \cdot 10^{-8} \cdot I^2 + 4 \cdot \left(n - \frac{1}{2}\right) \cdot \frac{d^2}{3}}\ (kg)$	Using substitute loads. *I*: load in kg *d*: resolution in kg *n*: number of substitute loads

Calibration item / Parameters	Range of measurement	Expanded measurement uncertainty (k=2) *	Remarks
Standards weights			According to guide OIML R111-1:2004. Calibration capability of standard weights up to OIML class:
	0,1 kg	0,9 mg	M1
	0,2 kg	1,3 mg	
	0,5 kg	2,0 mg	
	1 kg	5,9 mg	
	2 kg	7,5 mg	
	5 kg	90 mg	M2
	10 kg	0,10 g	M1
	20 kg	0,18 g	
Force measurements			
Compression testing machines	[200 to 3000] KN	0,12 %	According to ISO 7500-1:2018. Calibration capability class 1 machines. Calibration is performed on-site.
		Vertical force measurement: 0,12 % Force transfer: 1,0 %	According to EN 12390-4:2019. Calibration capability class 1 machines. Calibration is performed on-site.

* *Where the expanded uncertainty (with coverage probability 95 %) is accompanied by the corresponding unit, it is absolute, while where it is not accompanied by a unit, it is relative.*

The Calibration & Measurement Capability (CMC) includes the measurand, the measurement range and the measurement uncertainty and expresses the smallest measurement uncertainty that can be achieved in a calibration.

Permanent laboratory premises address: **35th road 3, 13341 Ano Liosia**

Approved Signatories: **G. Panagiotidis, D. Tselepis.**

This scope of Accreditation replaces the previous one dated 06.02.2024.

The Accreditation Certificate No. **1197**-2**,** to ELOT EN ISO/IEC 17025:2017, is valid until 18.02.2029.

Athens, 19.02.2024

Christos Nestoras
CEO of ESYD