

Hellenic Accreditation System



Annex F1D/1 to the Certificate No. **90-7**

SCOPE of ACCREDITATION

of the

Testing Laboratory

of the

Innovation Hub (DKK) of PPC S.A.

Materials/ Products to be tested	Types of test / Properties to be measured	Applied methods / Techniques to be used
Mechanical tests		
Bolts, screws and studs	Tensile test for the determination of <ul style="list-style-type: none"> - Tensile strength (R_m) - Elongation after fracture (A_f) and stress at 0,0048d non-proportional elongation (R_{pf}) - Proofload 	ELOT EN ISO 898.01 E3: 2013, §9.2, 9.3 και 9.6
Weldable steels for the reinforcement of concrete	Tensile test: <ul style="list-style-type: none"> - Real section - Elongation - Strength at yield R_{eH} - Strength at break R_m - Ratio R_m/R_{eH} 	ELOT EN ISO 15630-1 E3: 2019, §5 ELOT EN ISO 15630-2 E3: 2019, §5 * EAOT EN 10080: 2005 * EAOT 1421-2 E2: 2007 * EAOT 1421-3 E2: 2007 (*) they provide limit values and procedures for the conformity assessment against specifications.
Metallic materials	Tensile test / <ul style="list-style-type: none"> - Maximum force - Elongation at break - Upper and lower yield strength - Tensile strength 	ELOT EN ISO 6892.01: 2020 ELOT EN 10002-1: 2001 §3, 4, 6, 7, 8, 10, 11, 12, 20, 22 Annex A, D, H
Plastics and elastomers	Tensile test / <ul style="list-style-type: none"> - Elongation at break - Tensile strength at yield - Tensile strength at break 	ELOT EN ISO 527-1 E3: 2019 ELOT EN ISO 527-2 E2: 2012
Metallic materials	Charpy impact test / Energy absorbed by breakage	ELOT EN ISO 148.01 E2: 2017
Metallic welded materials	Face bend test (FBB) and Root bend test (RBB)	ELOT EN ISO 5173: 2011 +A1: 2012
Welded metallic specimens - Plates	Transverse tensile test: - Elongation	ELOT EN ISO 4136 E2: 2012 except § 5.5.3.2 and § 5.5.3.3

Materials/ Products to be tested	Types of test / Properties to be measured	Applied methods / Techniques to be used
- Pipes with diameter >18 mm	- Tensile strength R _m	ELOT EN ISO 6892.01:2020 ELOT EN 10002-1: 2001 §3, 4, 6, 7, 8, 10, 11, 12, 20 Annex A, D, H
Rectangular metallic Weld specimens	Charpy impact test / Absorbed energy from impact for absorbed energy level: low 20 Joule, medium 70 Joule, high 120 Joule	ELOT EN ISO 148.01 E2: 2017 ELOT EN ISO 9016 E3: 2022
Elastomers	Tensile test/ - Elongation at break - Tensile strength - State of stress at 200% elongation	ISO 37: 2017
Elastomers	Tear strength	ISO 34-1:2022
Metallic materials	Bend test	ELOT EN ISO 7438:2020
Physical tests		
Non cellular plastics - Determination of density	Measurement of relative density (specific gravity) and density / Density	ASTM D 792: 2020, Test method A ISO 1183-1:2019 Test method A
Rubbers	Measurement of SHORE A & D hardness / SHORE hardness	DIN 53505: 2000 ISO 48-4: 2018
Plastics and ebonite	Determination of indentation hardness - Shore hardness	ELOT EN ISO 868:2003
Elastomers	Determination of abrasion resistance / - Density - Volume loss - Abrasion resistance	ISO 4649: 2017 – Method A ISO 2781: 2018– Method A
	Determination of rebound resilience: (pendulum method)	ISO 4662:2017
Rubber having SHORE A or IRHD hardness from 30 up to 85	Determination of rebound resilience: - Ratio of returned to energy applied - Rebound resilience	DIN 53512: 2000
Non-destructive tests		
Metallic materials	Ultrasonic examination of fusion welds in ferrous plates and pipes (pulse-echo technique)	ELOT EN 17640:2019 Ultrasonic examination of welds
Ferromagnetic metallic materials	Inspection of weldings in steel plates and pipes with the method of magnetic particles and by using portable electromagnet (Yoke)	ELOT EN ISO 9934-1:2017 ELOT EN ISO 17638:2016
Metallic and other materials in which ultrasound can propagate	Ultrasonic thickness measurement in mm (or inches)	ASTM E797/E797M: 2021 ELOT EN ISO 16809: 2018
Metallic materials	Measurement of thickness of non-magnetic coatings over: - magnetic base using the magnetic method - non-magnetic base using the Eddy-	Magnetic method: ASTM B499:2009 (2021)E1 ISO 2178:2016 Eddy-current method: ELOT EN ISO 2360 E3: 2017

Materials/ Products to be tested	Types of test / Properties to be measured	Applied methods / Techniques to be used
	current method / Coating thickness	
Metallurgical tests		
Metallic materials (using specimens)	Metallographic inspection / - Magnification - Estimation of metallographic microstructure - Determination of creep cavitation damage	VGB** – Technische Wissenschaftliche
Metallic materials & metallic materials welds	1. Hardness test according to BRINELL: Hardness HBW: 2,5/187,5 & 2,5/31,75	ELOT EN ISO 6506-1: 2014
	2. Hardness test according to VICKERS: Hardness HV10 & HV30	ELOT EN ISO 6507-1: 2018
	3. Hardness test according to VICKERS: Hardness HV0.5, HV1	ELOT EN ISO 6507-1: 2018 ELOT EN ISO 9015-2: 2016
	4. Hardness test according to ROCKWELLB&C: Hardness HRB, HRC	ELOT EN ISO 6508-1: 2016
	5. Portable Leeb Hardness Testing	ELOT EN ISO 16859-1: 2016 ASTM A956/A956M-17a
	6. UCI Portable Hardness Testing	DIN 50159-1:2015 ASTM A1038-19

Site of assessment: **Laboratory permanent premises, 9 Leondariou Str., Kantza, Pallini, Attiki, Greece.**

Approved signatories: **M. Bomboulos, M. Valsamakis, N. Roussos, K. Kourmetas, A. Zervas.**

This Scope of Accreditation replaces the previous one dated 07.09.2023.

The Accreditation Certificate No. **90-7**, to ELOT EN ISO/IEC 17025: 2017, is valid until 02.07.2027.

Athens, 01.07.2024

Christos Nestoras
CEO of ESYD