Hellenic Accreditation System

Annex F1/21 to the Certificate No. **134**-6

SCOPE of ACCREDITATION

of the

Quality Control Testing Laboratory

of

NDT Technology – Athanassios Gkiokas

Materials / Products to be tested	Types of tests / Properties to be measured	Applied methods / Techniques to be used
Non-destructive tests using magnetic particles		
Ferromagnetic materials	In situ inspection with magnetic particles and Yoke AC, HWDC & DC	EN ISO 10893-5: 2011 Non-destructive testing of steel tubes – Part 5: Magnetic particle inspection of seamless and welded ferromagnetic steel tubes for the detection of surface imperfections
		ASME 2023 Boiler and Pressure Vessel Code. Section V, Non Destructive Examination. Article 7: Magnetic Particles Examination
		EN ISO 9934-1: 2016 Non-destructive testing – Magnetic particle testing – Part 1: General principles
		EN 1369: 2012 Founding – Magnetic particle inspection
		EN ISO 17638: 2016 Non-destructive testing of welds – Magnetic particle testing
		EN 10228-1: 2016 Non-destructive testing of steel forgings – Part 1: Magnetic particle inspection
		ASTM E3024/E3024M-22a (αντικατέστησε το ASTM E 1444/ E 1444 M: 2016 e1) Standard practice for magnetic particle examination
		ASTM E 709: 2021 Standard guide for magnetic particle examination

Materials / Products to be tested	Types of tests / Properties to be measured	Applied methods / Techniques to be used
Non-destructive tests using penetrant fluids		
Metallic materials	In situ inspection with visible and/or dye penetrants / Surface imperfections	EN ISO 10893-4: 2011 Non-destructive testing of steel tubes – Part 4: Liquid penetrant inspection of seamless and welded steel tubes for the detection of surface imperfections
		EN 10228-2: 2016 Non-destructive testing of steel forgings – Part 2: Penetrant testing
		EN 1371-1: 2011 Founding – Liquid penetrant inspection – Part 1: Sand, gravity die and low pressure die castings
		ASTM E 165: /E165M: 2023 Standard test method for liquid penetrant examination
		ASME 2023 Boiler and Pressure Vessel Code. Section V, Non Destructive Examination. Article 6: Liquid Penetrant Examination
		EN ISO 3452-1: 2021 Non-destructive testing – Penetrant testing – Part 1: General principles
		ASTM E 1417/ E 1417 M-21e1 Standard practice for liquid penetrant examination
Non-destructive tests using the Eddy current method		
Conductive, non-ferromagnetic tubular products	Eddy Current Testing / Surface and/or subsurface and/or internal discontinuities	ASTM E 243: 2018 Standard Practice for Electromagnetic (Eddy-Current) Examination of Copper and Copper-Alloy Tubes
		ASME 2023 Boiler and Pressure Vessel Code. Section V, Non Destructive Examination. Article 8 : Eddy Current Examination of tubular products
Seamless and welded tubular products, austenitic stainless steel and similar alloys		ASTM E 426 -16 (2021) Standard Practice for Electromagnetic (Eddy-Current) Examination of Seamless and Welded Tubular Products, Austenitic Stainless Steel and Similar Alloys
Welds of electrical conductive materials	Eddy Current Testing / Surface and/or subsurface and/or internal discontinuities (cont.)	EN ISO 17643:2015 Non-destructive examination of welds – Eddy current examination of welds by complex plane analysis
Non-magnetic heat exchanger tubes		ASTM E 690-15(2020) Standard Practice for In Situ Electromagnetic

Materials / Products to be tested	Types of tests / Properties to be measured	Applied methods / Techniques to be used
		(Eddy-Current) Examination of Nonmagnetic Heat Exchanger Tubes
Non-destructive test – Measurement of surface hardness		
Materials and welds of steel, cast steel and cast iron	In situ measurement of surface hardness	ASTM A 956/A956M-22 Standard Test Method for Leeb Hardness Testing of Steel Products
Non-destructive tests – Coating thickness measurements		
Non-magnetic base metallic materials	Thickness measurements of non-conductive coatings with the Eddy Current method (0-1600µm)	ISO 2360: 2017 Non-conductive coatings on non-magnetic basis metals – Measurement of coating thickness – Eddy current method
Magnetic base metallic materials	Thickness measurements of non-magnetic coatings with the magnetic method (0-1600µm)	ASTM B499-09(2021)e1 Standard Test Method for Measurement of Coating Thickness by the Magnetic Method: Nonmagnetic Coatings on Magnetic Basis Metals
Ultrasonic non-destructive tests		
Metallic materials and welds	Ultrasonic testing / Internal discontinuities	ASME 2023 Boiler and Pressure Vessel Code. Section V, Non Destructive Examination. Article 4: Ultrasonic Examination Methods for In-service Inspection
		ASME 2023 Boiler and Pressure Vessel Code. Section V, Non Destructive Examination. Article 5: Ultrasonic Examination Methods for Materials and Fabrications
Welds of metallic materials		EN ISO 17640: 2018 Non destructive testing of welds – Ultrasonic testing – Techniques, testing levels and assessment
Flat steel products		EN 10160: 1999 Ultrasonic testing of steel flat product of thickness equal or greater than 6 mm (reflection method)
Ferritic and martensitic steel forgings		EN 10228-3: 2016 Non-destructive testing of steel forgings – Part 3: Ultrasonic testing of ferritic or martensitic steel forgings
Industrial products that permit the transmission of ultrasound		EN ISO 16810:2014 Non-destructive testing – Ultrasonic examination – Part 1: General principles
Steel forgings	Ultrasonic testing / Internal discontinuities (cont.)	ASTM A 388/A 388M: 2019 Recommended practice for ultrasonic testing and inspection of heavy steel forgings
Steel castings		ASTM A609 / A609M-12(2023) Standard specification for longitudinal beam

Materials / Products to be tested	Types of tests / Properties to be measured	Applied methods / Techniques to be used
		ultrasonic inspection of carbon and low-alloy steel castings
Steel plates		ASTM A435 / A435M: 17 (2023) Standard specification for straight-beam ultrasonic examination of steel plates
Any material in which ultrasonic waves can propagate	Ultrasonic thickness testing	ASTM E 797/ E797M-21 Standard Practice for Measuring Thickness by Manual Ultrasonic Pulse-Echo Contact Method

Site of assessment: **Permanent laboratory premises, Levedou 2-4 & Andrea Dimitriou, 16121 Kesariani, Attiki, Greece.**

Approved signatory: **A. Gkiokas.**

This Scope of Accreditation replaces the previous one dated July 23rd , 2023.
The Accreditation Certificate No. **134**-6, to **ELOT EN ISO/IEC 17025: 2017**, is valid until 23.7.2028.

Athens, February 2nd, 2024

Christos Nestoras
CEO of ESYD