SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMKO SA, LIGHTNING & HIGH VOLTAGE LABORATORY, THIVA GREECE
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ELECTRICAL

Valid To: September 30, 2024 Certificate Number: 3051.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following testing :

Material or Product	Test Technology	Test Methods[3]

Connection components, used in Lightning protection system	• Marking Test Clause 6.6
	• Lightning by Impulse Current Test Clause 6.4
	• Environmental Test Annex D
	  • Salt Mist Treatment Clause D2
	  • Humid Sulphurous Atmosphere Clause D3
	  • Ammonia Atmosphere Clause D4
	• Visual Test on Corrosion or Mechanical Deformation Clause 6.4
	• Torque Measurement Clause 6.4
	• Contact Resistance Measurement Clause 6.4
	• Conductor Displacement Measurement Clause 6.4
	• Static Mechanical Test, Clause 6..5.2
	• Mechanical tensile Force, Clause 6.4
	(All tests provided in the standard are included)
		IEC 62561-1
		EN 62561-1

Metal sheets' joints, used in Lightning protection system	• Marking Test, Clause 6.3
	• Lightning by Impulse Current Test, Clause 6.4.3
	• Environmental Test, Annex C
	  • Salt Mist Treatment Clause C2
	  • Humid Sulphurous Atmosphere, Clause C3
	  • Ammonia Atmosphere, Clause C4
	• Visual Test on Corrosion or Mechanical Deformation
	(All tests provided in the standard are included)
		CLC/TS 50703-1

Air Termination Conductors, Air Termination Rods, Down Conductors,	• Marking Test Clause 5.5 • Tensile Strength Clause 5.2.6, 5.3.7 5.4.5 • Yield/Tensile Ratio Clause 5.3.8	IEC 62561-2 EN 62561-2

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Earth Electrodes, Earth Lead-in Rods used in Lightning protection system	• Lightning by Impulse Current Test Clause 5.4.4
	• Environmental Test Annex A
	  • Salt Mist Treatment, Clause A2
	  • Humid Sulphurous Atmosphere, Clause A3
	  • Ammonia Atmosphere. Clause A4
	• Visual Test on Corrosion or Mechanical Deformation Clause 5.2.4.2b, 5.3.4.2, 5.3.5.2 a-b,
	• Electrical Resistance Measurement, Clause 5.2.4.2a, 5.3.5.2 c
	• Electrical Resistivity Test, Clause 5.2.5, 5.3.6
	• Contact Resistance Measurement Annex B
	• Material Configuration Table 1-3
	• Cross Sectional Area Measurements Table 1-3
	• Dimensional Measurements Table 1-3
	• Bend Test, Clause 5.2.3, 5.3.4
	• Thickness Coating, Clause 5.2.2
	• Adhesion Test, Clause 5.2.3, 5.3.3
	• Gravimetric Determination of the Mass per Unit Area of Hot Dip Galvanized Coatings on Ferrous Materials, Clause 5.2.2, 5.3.2
	• Compression Test Clause 5.4.2
	
	(All tests provided in the standard are included)	

Isolating spark gaps (ISG) used in Lightning protection system	• Marking Test, Clause 6.7
	• Lightning by Impulse Current Test, Clause 6.5.4
	• Mechanical Test, Clause 6.4
	• Environmental Test, Annex B
	  • Salt Mist Treatment, Annex B.2
	  • Humid Sulphurous Atmosphere, Annex B.3
	  • Ammonia Atmosphere, Annex B.4
	• Isolating Resistance, Clause 6.5.1
	• Withstand Voltage, Clause 6.5.2
	• Sparkover Voltage, Clause 6.5.3
	• Visual Inspection after Lightning Impulse Current Strength on Cracks and Punctures of the Isolating Spark Gap
	(All tests provided in the standard are included, except resistance to UV test ANNEX C).
		IEC 62561-3
		EN 62561-3

Conductor fasteners, used in Lightning protection system	• Marking Test, Clause 6.6
	• Environmental Test Annex A
	  • Salt Mist Treatment Clause A2
	  • Humid Sulphurous Atmosphere, Clause A3
	  • Ammonia Atmosphere, Clause A4
	• Visual Test on Corrosion or Mechanical Deformation, Clause 6.3.2, 6.3.3
	• Torque Measurement Clause 4.1
		IEC 62561-4
		EN 62561-4

	• Lateral Load Test, Clause 6.4.1 • Axial Load Test, Clause 6.4.2 • Impact Test, Clause 6.4.3 (All tests provided in the standard are included, except resistance to UV test ANNEX B).	
Grounding and Bonding Equipment	• Pull – protective type ground clamp, Clauses 7.3 & 9.3 • Tightening force, Clause 9.2 • Thickness of protective coating, only determination using magnetic method, Clause 9.6.1 • Adherence of coating, Clause 9.7.1 • Bending, Clause 9.7.2 • Marking, Clause 10	UL 467
Metallic materials	• Tensile Strength, Annex A	ISO 6892-1
Components, equipment	Salt mist, cyclic (sodium chloride solution). Except Clauses 7, 10, and 11	EN 60068-2-52 ISO 60068-2-52
Metallic and other non organic coatings	Sulfur dioxide test with general condensation of moisture. Except clause 9	EN ISO 6988
Copper alloys materials	Ammonia test for stress corrosion resistance. Except metallographic examination mentioned in clause 8.4.	ISO 6957
Metallic coatings-Hot dip galvanized coatings on ferrous materials	Gravimetric determination of the mass per unit area	ISO 1460
Permanent Connections Used in Substation Grounding	Resistance Clause 5.3.2	IEEE Std 837
Grounding Systems	<u>Earthing System Resistance Impedance Measurements</u> • Three-Point Method, Clause 8.2.2.2. • Fall-of-Potential Method Clause 8.2.2.4. <u>Earth Resistivity Measurements</u> • Methods of Measuring Earth Resistivity Clause 7.2. • Four-Point Method (Wenner Method) Clause 7.2.3.	IEEE Std 81[2] HD 384 Clause 612.6.2 appendix ΠΙ.61-Γ (PI.61-GAMMA) 2
Electrical installations <1 kV a.c.	Earthing system resistance measurement, clause 6.4.3.7.2 appendix 6.Γ.1 (6.GAMMA.1)	ELOT 60364[2]
AC Substation Grounding	Earthing System Resistance Impedance Measurements Fall-of-Potential Method Clause 19.1.1	IEEE Std 80[2]
Earthing of power installations exceeding 1 kV a.c.	Earthing System Resistance Impedance Measurements Fall-of-Potential Method Clause 8 and Clause L.2.2a	EN 50522[2]

[1] Internal/nonstandard test method.

[2] This laboratory meets A2LA *R104 – General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these tests.

[3] When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per part C., Section 1 of A2LA *R101 - General Requirements- Accreditation of ISO/IEC 17025 Laboratories*.

Accredited Laboratory

A2LA has accredited

ELEMKO SA, LIGHTNING & HIGH VOLTAGE LABORATORY, THIVA GREECE

Metamorphosis, Greece

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 5th day of October 2022.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3051.01
Valid to September 30, 2024

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Testing Scope of Accreditation.