



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Qualabor Serviços da Qualidade Ltda.
Rua Deputado Heitor Alencar Furtado, 5000
Curitiba, PR, 81280-340

Fulfills the requirements of

ISO/IEC 17043:2010

In the field of

PROFICIENCY TESTING PROVIDER

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 30 JANUARY 2021

Certificate Number: AP-2654



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17043:2010.
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).

SCOPE OF ACCREDITATION TO ISO/IEC 17043:2010

Qualabor Serviços da Qualidade Ltda.

Rua Deputado Heitor Alencar Furtado, 5000

Curitiba, PR, 81280-340

www.qualabor.com

Clecio Dambiski

contato@qualabor.com.br

PROFICIENCY TEST PROVIDER

Valid to: **January 30, 2021**

Certificate Number: **AP-2654**

Mechanical Testing

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
Insulation and creepage distance on electrical devices	Dimensional quota of creepage and insulation	Consensus values from participants / Reference values
Shore, Barcol, Rockwell, Brinell, Vickers hardness on materials	Hardness	Consensus values from participants / Reference values
Spring mattress	Scrolling; Indentation; Spring type; N° of springs; Perimeter edge width; Quilting thickness; Stew and foam thickness; Foam nominal density; Stew nominal density; Wire gauge; Edge density; Deformation of the edge; Edge resilience; Ash content of the border; Mattress width, Mattress length; Mattress height;	Consensus values from participants / Reference values
Flexible foam	Density; Resilience; Permanent deformation due compression; Ash content; Indentation force; Dynamic fatigue – thickness loss; Dynamic fatigue – indentation force loss	Consensus values from participants / Reference values
Torsion, traction, compression, shear, flexion in toys, party supplies and school supplies or other devices specific testing item	Rupture	Consensus values from participants / Reference values
Indelibility of markings marked testing item	Verify if marking is still readable	Consensus values from participants / Reference values

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
Plugs, sockets, outlets and other types of devices	Linear measure, radius and angles	Consensus values from participants / Reference values
Pendulum impact specific testing item	Failure of the item	Consensus values from participants / Reference values
Hammer impact specific testing item	Failure of the item	Consensus values from participants / Reference values
Torque in screws of electrical connection testing item	Failure of the item for a predetermined torque or the torque that has failed	Consensus values from participants / Reference values
IP index protection specific electrical device	Index protection rating	Consensus values from participants / Reference values
Dye penetrant liquid, X-Ray, Ultrasonic and Magnetic Particles	Welding failures	Consensus values from participants / Reference values
Ultrasonic thickness measurement	Thickness	Consensus values from participants / Reference values
Pressure and vacuum valve	Opening pressure	Consensus values from participants / Reference values
Headlight test	Distance "e"	Consensus values from participants / Reference values
Breaking, suspension and Alignment	Maximum force, unbalance index, imbalance of steering wheel.	Consensus values from participants / Reference values
Compressed natural gas	Systems and components of road vehicles Components of CNG systems	Consensus values from participants / Reference values
Gas network inspection	Internal network distribution Gas device Gas device connections Individual natural exhaust system Verification of combustion hygiene Collective network distribution Collective Individual natural exhaust system	Consensus values from participants / Reference values

Biological Testing

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
EIA (Equine infectious anemia) blood serum samples	Presence or absence of antibodies against equine infectious anemia virus	Consensus values from participants / Reference values

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
Glanders blood serum samples	Presence or absence of antibodies against glanders bacteria	Consensus values from participants / Reference values
Detection of salmonella on food or water samples	Presence or absence of salmonella	Consensus values from participants / Reference values

Thermal Testing

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
Needle flame on electrical device	Flammability conditions	Consensus values from participants / Reference values
Glow-wire on electrical device	Flammability conditions	Consensus values from participants / Reference values
Differential scanning calorimeter (DSC) polymer item	Glass temperature, Melt temperature, Crystallization temperature, Enthalpy of crystallization, Enthalpy of crystalline fusion	Consensus values from participants / Reference values
Flammability in devices	Flammability conditions	Consensus values from participants / Reference values
Ball pressure specific testing item	Print diameter	Consensus values from participants / Reference values
Temperature rise in terminals electrical device	Temperature rise	Consensus values from participants / Reference values
Temperature rise in surfaces electrical device	Temperature rise	Consensus values from participants / Reference values

Electrical Testing

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
Short circuit electrical device	Joule's integral, amplitude and current time	Consensus values from participants / Reference values
Dielectric strength in toys electrical device	Rupture of insulation	Consensus values from participants / Reference values
Insulation, grounding and other resistances in electrical devices	Resistance	Consensus values from participants / Reference values

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
Dielectric strength – applied tension electric device	Disruptive voltage	Consensus values from participants / Reference values
Energies, powers, current in electrical devices	Energies, powers and current	Consensus values from participants / Reference values
Circuit breakers, fuses or others protective equipment	Time and circuit breaker action	Consensus values from participants / Reference values

Chemical Testing

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
Atmospheric emissions from stationary sources	Concentration of: CO(g) O ₂ (g) NO _x (g) SO _x (g) Particulate matter	Consensus values from participants / Reference values
Migration of heavy metals	Concentration of: Sb As Ba Cd Cr Pb Hg Se Other metals	Consensus values from participants / Reference values
Chemical-Physical Mineral oil for Electrical Insulation Test – insulation oil	Index of neutralization Water content Density at 20/4°C Power factor at 100°C Dielectric strength Interfacial tension Color determination – colorimeter method Particle content Flash point Kinematic viscosity 40°C	Consensus values from participants / Reference values
PCB in liquids, solids and oils	PCB concentration	Consensus values from participants / Reference values

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
Analysis of gases dissolved in electrical insulation oil by gas chromatography-insulation oil	Hydrogen Oxygen Nitrogen Methane Ethane Ethylene Acetylene Carbon monoxide Carbon dioxide Total of gases Total combustible gases	Consensus values from participants / Reference values
Field chemical-physical tests in raw water, treated, residual, water for consumption or effluent	Chemical-Physical tests	Consensus values from participants / Reference values
Samples of Raw water, treated, residual, water for consumption or effluent testing	Apparent Color True Color pH Turbidity Iron Fluorine Chlorine Manganese Chromium Copper Lead Magnesium Arsenic Antimony Zinc Sodium Selenium Aluminum Mercury Barium Tin Molybdenum	Consensus values from participants / Reference values

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
<p>Samples of Raw water, treated, residual, water for consumption or effluent testing</p>	<p>Silver Nickel Titanium Vanadium Calcium Cobalt Other metals Hardness Sulfate Sulfide Chloride</p>	<p>Consensus values from participants / Reference values</p>
<p>Samples of Raw water, treated, residual, water for consumption or effluent testing</p>	<p>Alkalinity Cyanide Hexavalent chromium BOD COD Phenol Ammoniac Nitrogen Nitrate Nitrite Total phosphorus Suspended solids Dissolved solids Oils and greases Calcium hardness Pesticides VOC TPH Organic solvents Trihalomethanes Drugs Hormones Pathogens Bacteria</p>	<p>Consensus values from participants / Reference values</p>
<p>Vehicular emissions</p>	<p>Concentration of: Carbon monoxide Hydrocarbons Nitrogen Oxides Sulfur Oxides Particulates matter Aldehydes Ketones Unburned ethanol</p>	<p>Consensus values from participants / Reference values</p>

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
Mineral coal samples	Hygroscopic moisture Volatile material Fixed carbon Superior calorific value Ashes Total sulfur	Consensus values from participants / Reference values
Automotive batteries	Water tightness Capacity C20 Vibration resistance Electrolyte retention Dimensional inspection External Visual Inspection Weight Fall Capacity reservation Low temperature electric discharge Durability tests Suitable for flotation Voltage drop in the interconnections Internal resistance Thermal cycling test	Consensus values from participants / Reference values
APH (aromatic polycyclic hydrocarbons) in water, soil and sediments	Naphthalene Acenaphthalene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo (a) anthracene Criseno Benzo (b) fluoranthene Benzo (k) fluoranthene Benzo (a) pyrene Indene (1,2,3-cd) pyrene Dibenzo (a, h) anthracene Benzo (g, h, i) perylene	Consensus values from participants / Reference values

Acoustic Testing

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
Sound pressure level in devices	Sound pressure peak	Consensus values from participants / Reference values
Automotive noise(Exhaust system or in another point)	Sound pressure peak	Consensus values from participants / Reference values

Clinical Testing

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
Hematology external quality control in blood serum samples	<ul style="list-style-type: none"> -Biochemistry - Hematology: - Automated hematology: - Coagulation: - Urinalysis: - Parasitology: - GRAM Bacterioscopies - Bacteriology: - Immunohematology 	Consensus values from participants / Reference values

Sampling Testing

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
Isolated sampling process in raw water, treated, residual, water for consumption or effluent for chemical tests	Sampling on chemical parameters	Consensus values from participants / Reference values
Isolated sampling process in raw water, treated, residual, water for consumption or effluent for physical tests	Sampling on physical parameters	Consensus values from participants / Reference values
Isolated sampling process in raw water, treated, residual, water for consumption or effluent for biological tests	Sampling on biological parameters	Consensus values from participants / Reference values

Calibration

Description of PT Item/ Artifact	Properties measured	Range of Property	Expanded Uncertainty of PT Item/ Artifact (+/-) (Including appropriate Units)	Procedure for Establishing Assigned Value
Balance weight	Mass	0,01 [mg] to 500 [kg]	0,01 [mg] to 50 [g]	Certified reference value
Caliper	Dimension	0,01 [mm] to 1000 [mm]	0,01 [mm]	Certified reference value
Volumetric	Volume	1 [μL] to 1000 [mL]	0,002 [μL] to 0,3 [mL]	Certified reference value
Thermometer	Temperature	-200 [°C] to 1200 [°C]	0,04 [°C] to 3 [°C]	Certified reference value
Electrical Measurement Equipments	Resistance, voltage, current, frequency, capacitance, powers and energies.	0,1 [Ω] to 200 [MΩ] 0,1 [mV] to 1 [kV] (AC) 0,1 [mV] to 1 [kV] (DC) 0,01 [mA] to 20 [A] (AC) 0,01 [mA] to 20 [A] (DC) 1[Hz] to 200 [kHz] 10[pF] to 200[μF] 10 [pW] to 1000 [kW] 1 [VAr] to 1000 [kVAr]	0,1 [Ω] to 10 [kΩ] 3,6 [μV] to 1,4[V] (AC) 3,6 [μV] to 1,4[V] (DC) 0,07[μA] to 0,1[A] (AC) 0,07 [μA] to 0,1 [A] (DC) 0,01[Hz] to 1[kHz] 0,1[pF] to 1[μF] 1 [pW] to 10 [kW] 0,1 [mVAr] to 10 [kVAr]	Certified reference value

Classification Testing

Description of Item	Properties Measured	Procedure for Establishing Assigned Value
Representative items or figures, pictures, or other representation	Vehicular Classification or other classifications	Consensus values from participants / Reference values/ Known Values

Note:

1. This scope is formatted as part of a single document including Certificate of Accreditation No. AP-2654.



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