

CERTIFICATE OF ACCREDITATION

This is to attest that

QAI LABORATORIES INC.

5110 NORTH MINGO ROAD TULSA, OKLAHOMA 74117, U.S.A.

Testing Laboratory TL-282

has met the requirements of AC89, *IAS Accreditation Criteria for Testing Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date July 5, 2023



President

International Accreditation Service, Inc.

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QAI LABORATORIES INC.

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Accredited to ISO/IEC 17025:2017

Effective Date July 5, 2023

Biological	
ASTM D3273	Standard test method for resistance to growth of mold on the surface of interior coatings in an environmental chamber
ASTM G21	Standard practice for determining resistance of synthetic polymeric materials to fungi
СМТ	
ANSI A118.10	Load bearing, bonded, waterproof membranes for thin-set ceramic tile & dimension stone installation
ANSI A137.1	American national standards specifications for ceramic tile
ANSI A326.3	American national standard test method for measuring dynamic coefficient of friction of hard surface flooring materials
ASTM C67	Standard test methods for sampling and testing brick and structural clay tile
ASTM C97	Standard test methods for absorption and bulk specific gravity of dimension stone
ASTM C99	Standard test method for modulus of rupture of dimension stone
ASTM C120	Standard test methods of flexure testing of slate (breaking load, modulus of rupture, modulus of elasticity)
ASTM C121	Standard test method for water absorption of slate
ASTM C170	Standard test method for compressive strength of dimension stone
ASTM C241	Standard test method for abrasion resistance of stone subjected to foot traffic
ASTM C282	Standard test method for acid resistance of porcelain enamels (citric acid spot test)
ASTM C448	Standard test methods for abrasion resistance of porcelain enamels
ASTM C484	Standard test method for thermal shock resistance of glazed ceramic tile
ASTM C485	Standard test method for measuring warpage of ceramic tile
ASTM C499	Standard test method for facial dimensions and thickness of flat, rectangular ceramic wall and floor tile
ASTM C502	Standard test method for wedging of flat, rectangular ceramic wall and floor tile
ASTM C503	Standard specification for marble dimension stone
ASTM C568	Standard specification for limestone dimension stone



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ASTM C609	Standard test method for measurement of light reflectance value and small color differences between pieces of ceramic tile
ASTM C615	Standard specification for granite dimension stone
ASTM C616	Standard specification for quartz-based dimension stone
ASTM C629	Standard specification for slate dimension stone
ASTM C648	Standard test method for breaking strength of ceramic tile
ASTM C650	Standard test method for resistance of ceramic tile to chemical substances
ASTM C880	Standard test method for flexural strength of dimension stone
ASTM C1026	Standard test method for measuring the resistance of ceramic tile to freeze-thaw cycling
ASTM C1027	Standard test method for determining visible abrasion resistance of glazed ceramic tile
ASTM C1028	Standard test method for determining the static coefficient of friction of ceramic tile and other like surfaces by the horizontal dynamometer pull-meter method
Fire	
16 CFR 1632	Standard for the flammability of mattresses and mattress pads
16 CFR 1633	Standard for the flammability (open flame) of mattress sets
AS/NZS 3744.1	Furniture - Assessment of the ignitability of upholstered furniture Ignition source - Smouldering cigarette
ASTM D635	Standard test method for rate of burning and/or extent and time of burning of plastics in a horizontal position
ASTM E84	Standard test method for surface burning characteristics of building materials
ASTM E119	Standard test methods for fire tests of building construction and materials
ASTM E1537	Standard test method for fire testing of upholstered furniture
ASTM E1590	Standard test method for fire testing of mattresses
BFD IX-10	Regulation of upholstered furniture
BFD IX-11	Mattress fire test
BS 597-1	Furniture - assessment of the ignitability of mattresses and upholstered bed bases - ignition source: smouldering cigarette
BS 597-2	Furniture - assessment of the ignitability of mattresses and upholstered bed bases - ignition source: match flame equivalent
BS 5852	Methods of test for assessment of the ignitability of upholstered seating by smouldering and flaming ignition sources
CAL TB 117	Requirements, test procedure and apparatus for testing the resistance of materials used in upholstered furniture
California Technical Bulletin 129	Flammability Test Procedure for Mattresses for Use in Public Occupancies
Bulletin 129	



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California Technical Bulletin 133	Flammability test procedure for seating furniture for use in public occupancies
CAN/CGSB 4/2 NO. 27.7	Textile test methods for combustion resistance of mattresses
CAN/ULC 9705	Fire tests — Full Scale Room Test for Surface Products
CAN/ULC S102	Standard method of test for surface burning characteristics of building materials and assemblies
CAN/ULC S102.2	Method of test for surface burning characteristics of flooring, floor coverings, and miscellaneous materials and assemblies
CAN/ULC S137	Standard method of test for fire growth of mattresses (open flame test)
CAN/ULC S138	Standard Method of Test for Fire Growth of Insulated Building Panels in a Full-Scale Room Configuration
CAN/ULC S145	Standard Method of Test for the Evaluation of Protective Coverings for Foamed Plastic Insulation - Full-Scale Room Test
CSFM 12-7A-1	Exterior wall siding and sheathing
CSFM 12-7A-2	Exterior windows
CSFM 12-7A-3	Horizontal projection underside
CSFM 12-7A-4 Part A	Decking
CSFM 12-7A-5	Ignition resistant material
FMVSS/CMVSS 302	Flammability of interior materials
ISO 9705-1	Reaction to fire tests — Room corner test for wall and ceiling lining products — Part 1: Test method for a small room configuration
NFPA 258	Recommended practice for determining smoke generation of solid materials
NFPA 275	Standard method of fire tests for the evaluation of thermal barriers used over foam plastic insulation
NFPA 285	Standard fire test method for evaluation of fire propagation characteristics of exterior wall assemblies containing combustible components
NFPA 286	Standard methods of fire tests for evaluating contribution of wall and ceiling interior finish to room fire growth
UL 94	Tests for flammability of plastic materials for parts in devices and appliances
UL 723	Tests for surface burning characteristics of building materials
UL 1715	Fire test of interior finish material
UL 1820	Fire test of pneumatic tubing for flame and smoke characteristics
UL 1821	Thermoplastic sprinkler pipe and fittings for fire protection service
UL 1887	Fire test of plastic sprinkler pipe for flame and smoke characteristics
UL 2043	Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces
Physical	



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ASME A112.6.2	Framing-affixed supports for off-the floor water closets with concealed tanks
ASTM B456	Standard specification for electrodeposited coatings of copper plus nickel plus chromium and nickel plus chromium
ASTM B604	Standard specification for decorative electroplated coatings of copper plus nickel plus chromium on plastics
ASTM C297	Standard test method for flatwise tensile strength of sandwich constructions
ASTM D543	Standard practices for evaluating the resistance of plastics to chemical reagents
ASTM D570	Standard test method for water absorption of plastics
ASTM D618	Standard practice for conditioning plastics for testing
ASTM D638	Standard test method for tensile properties of plastics
ASTM D790	Standard test methods for flexural properties of unreinforced and reinforced plastics and electrical insulating materials
ASTM D968	Standard test methods for abrasion resistance of organic coatings by falling abrasive
ASTM D1505	Standard test method for density of plastics by the density gradient technique
ASTM D1621	Standard Test Method for Compressive Properties of Rigid Cellular Plastics
ASTM D1709	Standard test methods for impact resistance of plastic film by the free-falling dart method
ASTM D2583	Standard test method for indentation hardness of rigid plastics by means of a barcol impressor
ASTM D2765	Standard test methods for determination of gel content and swell ratio of cross-linked ethylene plastics
ASTM D3029 (withdrawn)	Standard test methods for impact resistance of flat rigid plastic specimens by means of a tup (falling weight)
ASTM D4226	Impact resistance of rigid poly (vinyl chloride) (PVC) building products
ASTM D4551	Standard specification for poly (vinyl chloride) (PVC) plastic flexible concealed water-containment membrane
ASTM D5420	Standard test method for impact resistance of flat, rigid plastic specimen by means of a striker impacted by a falling weight (gardner impact)
ASTM D5628	Standard test method for impact resistance of flat, rigid plastic specimens by means of a falling dart (tup or falling mass)
ASTM D6226	Standard Test Method for Open Cell Content of Rigid Cellular Plastics
ASTM E96	Standard test methods for water vapor transmission of materials
ASTM E303	Standard test method for measuring surface frictional properties using the british pendulum tester
ASTM E605	Standard test methods for thickness and density of sprayed fire-resistive material (SFRM) applied to structural members
ASTM E661	Standard test method for performance of wood and wood-based floor and roof sheathing under concentrated static and impact loads



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ASTM E759	Standard test method for effect of deflection on sprayed fire-resistive material applied to structural members
ASTM E760	Standard test method for effect of impact on bonding of sprayed fire-resistive material applied to structural members
ASTM E761	Standard test method for compressive strength of sprayed fire-resistive material applied to structural members
ASTM E859	Standard test method for air erosion of sprayed fire-resistive materials (SFRMS) applied to structural members
ASTM E937	Standard test method for corrosion of steel by sprayed fire-resistive material (SFRM) applied to structural members
ASTM G154	Standard practice for operating fluorescent ultraviolet (UV) lamp apparatus for exposure of nonmetallic materials
ASTM G155	Standard practice for operating xenon arc light apparatus for exposure of non-metallic materials
ICC-ES AC29	Cold, liquid-applied, below-grade, exterior dampproofing and waterproofing materials
ICC-ES AC66	Fire-retardant-treated wood
ICC-ES AC114	Rigid polyethylene, below-grade, damp proofing and wall waterproofing material
ICC-ES AC209	Trowel -, spray - or roller-applied water-resistive coatings used as weather-resistive barriers over exterior cementitious wall coverings
ICC-ES AC342	Vapor permeable membrane used with concealed attics and roof spaces
Plumbing	•

EPA WaterSense Plumbing Specifications

- Flushing urinals
- Flushometer-Valve Water Closets
- High efficiency lavatory faucets
- Shower heads
- High efficiency toilets

10 CFR 430 Subpart F Appendix B	Energy conservation program for consumer products - sampling plan for enforcement testing
ANSI A118.12	Crack isolation membranes for thin-set ceramic tile and dimension stone installation
ANSI Z124/CSA B45.5	Plastic plumbing fixtures
ANSI Z358.1	Emergency eyewash and shower equipment
ASME A112.1.2	Air gaps in plumbing systems
ASME A112.1.3	Air gap fittings for use with plumbing fixtures, appliances, and appurtenances
ASME A112.3.1	Stainless steel drainage systems for sanitary dwv, storm, and vacuum applications, above- and below ground
ASME A112.4.7	Point of use and branch water sub metering systems





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ASME A112.6.1M	Supports for off-the-floor plumbing fixtures for public use
ASME A112.6.3	Floor and trench drains
ASME A112.6.4	Roof, deck, and balcony drains
ASME A112.6.7	Sanitary floor sinks
ASME A112.14.1	Backwater valves
ASME A112.18.1/CSA B125.1	Plumbing supply fittings
ASME A112.19.1/CSA B45.2	Enameled cast iron and steel plumbing fixtures
ASME A112.19.2/CSA B45.1	Ceramic plumbing fixtures
ASME A112.19.3/CSA B45.4	Stainless steel plumbing fixtures
ASME A112.19.4/CSA B45.3	Consolidated into A112.19.1
ASME A112.19.5	Trim for water-closet bowls, tanks, and urinals
ASME A112.19.7/CSA B45S1	Whirlpool bathtub appliances
ASME A112.19.10	Dual flush devices for water closets
ASME A112.19.14	Six liter water closets equipped with dual flush device
ASME A112.19.15	Bathtubs/whirlpool bathtubs with pressure sealed doors
ASME A112.19.17	Manufactured safety vacuum release systems (svrs) for residential and commercial swimming pool, spa, hot tub, and wading pool suction systems
ASME A112.19.19	Vitreous China non-water urinals
ASME A112.21.3	Hydrants for utility and maintenance use
ASME A112.36.2M	Cleanouts
ASSE 1001	Atmospheric type vacuum breakers
ASSE 1002	Anti-siphon fill valves for water closet tanks
ASSE 1003	Water pressure reducing valves for domestic water distribution systems
ASSE 1010	Waterhammer arresters
ASSE 1011	Hose connection vacuum breakers
ASSE 1012	Backflow preventers with intermediate atmospheric vent
ASSE 1013	Reduced pressure principle backflow preventers and reduced pressure principle fire protection backflow preventers
ASSE 1014	Backflow prevention devices for hand-held shower
ASSE 1015	Double check backflow prevention assemblies and double check fire protection backflow prevention assemblies
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ASSE 1017	Temperature actuated mixing valves for hot water distribution systems
ASSE 1018	Trap seal primer valves - potable water supplied
ASSE 1019	Vacuum breaker wall hydrants, freeze resistant, automatic draining type
ASSE 1020	Pressure vacuum breaker assembly
ASSE 1023	Hot water dispensers household storage type - electrical
ASSE 1024	Dual check backflow preventers
ASSE 1032	Dual check valve type backflow preventers for carbonated beverage dispensers, post mix Type
ASSE 1035	Laboratory faucet backflow preventers
ASSE 1037	Pressurized flushing devices (flushometers) for plumbing fixtures
ASSE 1044	Trap seal primer devices - drainage types and electronic design types
ASSE 1047	Reduced pressure detector fire protection backflow prevention assemblies
ASSE 1048	Double check detector fire protection backflow prevention assemblies
ASSE 1050	Stack air admittance valves for sanitary drainage systems
ASSE 1051	Individual and branch type air admittance valves for sanitary drainage systems
ASSE 1052	Performance requirements for hose connection backflow preventers
ASSE 1055	Performance requirements for chemical dispensing systems
ASSE 1056	Performance requirements for spill resistant vacuum breaker assemblies
ASSE 1057	Performance requirements for freeze resistant sanitary yard hydrants with backflow protection
ASSE 1061	Performance requirements for push-fit fittings
ASSE 1062	Performance requirements for temperature actuated flow reduction (TAFR) valves for individual fixture fittings
ASSE 1066	Performance requirements for individual pressure balancing in-line valves for individual fixture fittings
ASSE 1072	Performance requirements for barrier type floor drain trap seal protection devices
ASTM C1277	Standard specification for shielded couplings joining hubless cast iron soil pipe and fittings
ASTM D1598	Standard test method for time-to-failure of plastic pipe under constant internal pressure
ASTM D1599	Standard test method for resistance to short-time hydraulic pressure of plastic pipe, tubing, and fittings
ASTM D1785	Standard specification for poly (vinyl chloride) (PVC) plastic pipe, schedules 40, 80, and 120
ASTM D2047	Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine
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ASTM D2239	Standard specification for polyethylene (PE) plastic pipe (SIDR-PR) based on controlled inside diameter
ASTM D2241	Standard specification for poly (vinyl chloride) (PVC) pressure-rated pipe (SDR series)
ASTM D2394	Standard test methods for simulated service testing of wood and wood-base finish flooring
ASTM D2661	Standard specification for acrylonitrile-butadiene-styrene (ABS) schedule 40 plastic drain, waste, and vent pipe and fittings
ASTM D2665	Standard specification for poly (vinyl chloride) (PVC) plastic drain, waste, and vent pipe and fittings
ASTM D2737	Standard specification for polyethylene (PE) plastic tubing
ASTM D2846	Standard specification for chlorinated poly (vinyl chloride) (CPVC) plastic hot- and cold-water distribution systems
ASTM F409	Standard specification for thermoplastic accessible and replaceable plastic tube and tubular fittings
ASTM F446	Standard consumer safety specification for grab bars and accessories installed in the bathing area
ASTM F462	Standard consumer safety specification for slip-resistant bathing facilities
ASTM F876	Standard specification for crosslinked polyethylene (pex) tubing
ASTM F877	Standard specification for crosslinked polyethylene (PEX) hot and cold water distribution systems
ASTM F1281	Standard specification for crosslinked polyethylene/aluminum/crosslinked polyethylene (PEX AL PEX) pressure pipe
ASTM F1412	Standard specification for polyolefin pipe and fittings for corrosive waste drainage systems
ASTM F2389	Standard specification for pressure rated polypropylene (PP) piping systems
CSA B45.9/ASME A112.3.4	Plumbing fixtures with pumped waste and macerating toilet systems
CSA B45.11-11/IAPMO Z401-2011	Glass plumbing fixtures
CSA B45.13-14/IAPMO Z1700-2014	Vacuum waste-collection systems
CSA B64.0	Definitions, general requirements, and test methods for vacuum breakers and backflow preventers
CSA B64.1.1	Atmospheric vacuum breakers (AVB)
CSA B64.1.2	Pressure vacuum breakers (PVB)
CSA B64.1.3	Spill-resistant pressure vacuum breakers (SRPVB)
CSA B64.1.4	Vacuum breaker, air space type (ASVB)
CSA B64.2	Hose connection vacuum breakers (HCVB)



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CSA B64.2.1	Hose connection vacuum breakers (HCVB) with manual draining feature
CSA B64.2.1.1	Hose connection dual check vacuum breakers (HCDVB)
CSA B64.2.2	Hose connection vacuum breakers (HCVB) with automatic draining feature
CSA B64.3	Dual check valve backflow preventers with atmospheric port (DCAP)
CSA B64.3.1	Dual check valve backflow preventers with atmospheric port for carbonators (DCAPC)
CSA B64.4	Reduced pressure principle (RP) backflow preventers
CSA B64.4.1	Reduced pressure principle backflow preventers for fire protection systems (RPF)
CSA B64.5	Double check valve (DCVA) backflow preventers
CSA B64.5.1	Double check valve backflow preventers for fire protection systems (DCVAF)
CSA B64.6	Dual check valve (DuC) backflow preventers
CSA B64.6.1	Dual check valve backflow preventers for fire protection systems (DuCF)
CSA B64.7	Laboratory faucet vacuum breakers (LFVB)
CSA B64.8	Dual check valve backflow preventers with intermediate vent (DuCV)
CSA B64.9	Single check valve backflow preventers for fire protection systems (SCVAF)
CSA B79	Commercial and residential drains and cleanouts
CSA B125.2/ASME A112.18.2	Plumbing Waste Fittings
CSA B125.3	Plumbing Fittings
CSA B125.6-09/ASME A112.18.6-09	Flexible water connectors
CSA B481	Grease Interceptors (excluding section 6.2)
IAPMO IGC 122	Test caps and test gates with ABS or PVC housings
IAPMO IGC 157	Ball valves
IAPMO IGC 161	Urinals with mechanical traps
IAPMO IGC 167	Solid waste containment interceptors
IAPMO IGC 168	Supply stops with integral water hammer arresters
IAPMO IGC 171	Air jetted laundry tub
IAPMO IGC 194	Plastic acrylontrile-butadiene styrene (ABS) and poly (vinyl chloride) (PVC) drain, waste and vent (DWV) pressure test fittings for use in ABS, PVC or cast iron dwv piping systems
IAPMO IGC 198	Elastomeric elbows and tees for above ground non-pressure DWV repair
IAPMO IGC 263	Roof drain terminal outlets
IAPMO IGC 267	Wall hydrants with alternate end connections
IAPMO IGC 275	Stainless steel drainage systems with alternate end connections



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IAPMO PS 34	Polyethylene encasement sleeve for potable water pipe and tubing
IAPMO PS 52	Sumps and sewage ejector tanks with or without a pump
IAPMO PS 54	Metallic and plastic utility boxes
IAPMO PS 55	Bath waste strainer drains
IAPMO PS 59	Wastewater diverter valves and diversion systems
IAPMO PS 65	Airgap units for water conditioning equipment installation
IAPMO PS 67	Early-closure replacement flappers or early-closure replacement flapper with mechanical assemblies
IAPMO PS 69	Bath waste and overflow assemblies with tub filler spout
IAPMO PS 72	Valves with atmospheric vacuum breakers
IAPMO PS 79	Multiport electronic trap primer
IAPMO PS 90	Elastomeric test caps, cleanout caps, and combination test caps/shielded couplings
IAPMO PS 94	Insulated protectors for P-traps, supply stops, and risers
IAPMO PS 95	Drain, waste, and vent hangers and plastic pipe support hooks
IAPMO PS 98	Prefabricated fiberglass church baptisteries
IAPMO PS 99	Terrazzo, marble, concrete, granite, and slate plumbing fixture
IAPMO TS 1	Mechanical seal toilets with or without integral wastewater tank for use in recreational vehicles
IAPMO TS 2	Wasteholding tanks
IAPMO TS 4	Pressurized and non-pressurized potable water tanks for use in recreational vehicles
IAPMO TS 11	Non-metallic fixtures
IAPMO TS 22	Porcelain enameled formed steel plumbing fixtures
IAPMO TS 30	Termination valves for use in recreational vehicles
ICC A117.1	Accessible and useable buildings and facilities (plumbing tests referenced in this standard)
ICC-ES AC115	Waterproof membranes for flooring and shower lining
ICC-ES AC122	PP, PEX, PEX-AL-PEX, and PP-AL-PP piping, tube and fittings used in radiant heating and water supply systems
ICC-ES AC247	Backwater valves
ICC-ES AC252	CPVC systems of piping, fittings and solvent cement used in chemical waste systems
ICC-ES AC274	In-ground, residential, fiber-reinforced plastic swimming pools and permanently installed plastic spas
ICC-ES AC311	Push-fit and press-connection fittings for potable water tube and radiant heating systems



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LADWP SPS Spec.	Los Angeles Department of Water and Power requirements for ultra-low-flush toilets supplementary purchase specification to ASME A112.19.2-2003
MaP Toilet Testing	Maximum performance (MaP) testing toilet fixture performance testing protocol
NSF 14	Plastics piping system components and related materials (using XRF gun)
NSF 372	Drinking water system components – lead content
UNAR 2006	Uniform North American requirements (UNAR) for toilet fixtures
U.S. Safe Drinking Water Act	Use of lead free pipes, fittings, fixtures, solder and flux for drinking water (section 1417)
Thermal	
ASTM C518	Standard test method for steady state thermal transmission properties by means of the heat flow meter apparatus
ASTM C553	Standard specification for mineral fiber blanket thermal insulation for commercial and industrial applications
ASTM C578	Standard specification for rigid, cellular polystyrene thermal insulation
ASTM C665	Standard specification for mineral-fiber blanket thermal insulation for light frame construction and manufactured housing
ASTM C666	Standard test method for resistance of concrete to rapid freezing and thawing (Section 5 Freezing and Thawing Cycle only)
ASTM C764	Standard specification for mineral fiber loose-fill thermal insulation
ASTM C1014	Standard specification for spray-applied mineral fiber thermal and sound absorbing insulation
ASTM C1029	Standard specification for spray-applied rigid cellular polyurethane thermal insulation
ASTM C1104	Standard test method for determining the water vapor sorption of unfaced mineral fiber insulation
ASTM C1149	Standard specification for self-supported spray applied cellulosic thermal insulation
ASTM C1289	Standard specification for faced rigid cellular polyisocyanurate thermal insulation board
ICC-ES AC12	Foam plastic insulation
ICC-ES AC377	Spray-applied foam plastic insulation

