Miami-Dade County, Florida
DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES
BOARD AND CODE ADMINISTRATION DIVISON
PRODUCT CONTROL SECTION
11805 S.W. 26 Street-Room 208
Miami, Florida 33175-2474
T (786) 315-2590 Fax (786) 315-2599

Laboratory Certificate

MIAMI-DADE COUNTY APPROVED

This certifies that QAI Laboratories, Inc. located at 8385 White Oak Avenue, Rancho Cucamonga, CA 91730 is an approved Testing Laboratory in accordance with Miami-Dade County Department of Regulatory and Economic Resources and Protocol TAS301-94, and is Certified to perform the following tests:

ASTM B117	ASTM E72	ASTM G152
ASTM C67	ASTM E84	ASTM G153
ASTM C1167	ASTM E108	ASTM G154
ASTM C1492	ASTM E283	ASTM G155
ASTM D635	ASTM E330	TAS 112
ASTM D1929	ASTM E72	TAS 201
ASTM D1970	ASTM E331	TAS 202
IAS Accreditation TL-220		TAS 203

Results of the above mentioned test shall be properly submitted to the Miami-Dade County Department of Regulatory and Economic Resources per TAS301-94, along with all other documentation required for the approval of products. Approved engineer(s) for this laboratory:

V. Andrew Tan, P.E.

This Certification and Registration Approved: **October 4, 2018**
This Certification and Registration Expires : **March 15, 2022**

Certification No. : **18-0912.10** *Revises: 16-1216.01*

Helmy A. Makar, P.E., M.S.
Product Control Section Supervisor
Product Control Section

Americo Segura, M.S.
Quality Assurance Unit Supervisor
Product Control Section

The Miami-Dade County Department of Regulatory and Economic Resources reserves the right to remove this certification for non-compliance with rules and regulations as set by Protocol TAS301-94.

INTERNATIONAL ACCREDITATION SERVICE®

ilac-MRA

SCOPE OF ACCREDITATION

IAS Accreditation Number	TL-220
Company Name	QAI Laboratories Inc.
Address	8385 White Oak Avenue Rancho Cucamonga, CA 91730
Contact Name	Jarred Johnson, Quality and Safety Manager
Telephone	909-483-0250
Effective Date of Scope	July 30, 2018
Accreditation Standard	ISO/IEC 17025:2005

Environmental

ASTM B117	Standard practice for operating salt spray (fog) apparatus
ASTM D2247	Standard practice for testing water resistance of coatings in 100 % relative humidity
ASTM E96/E96M	Standard test methods for water vapor transmission of materials
ASTM E331	Standard test method for water penetration of exterior windows, skylights, doors, and curtain walls by uniform static air pressure difference
ASTM G23	Practice for operating light-exposure apparatus (carbon arc type) with and without water for exposure of nonmetallic materials
ASTM G26	Practice for operating light-exposure apparatus (xenon arc type) with and without water for exposure of nonmetallic materials
ASTM G53	Practice for operating light- and water-exposure apparatus (fluorescent UV-condensation type) for exposure of nonmetallic materials
ASTM G152	Standard practice for operating open flame carbon arc light apparatus for exposure of nonmetallic materials
ASTM G153	Standard practice for operating enclosed carbon arc light apparatus for exposure of nonmetallic materials

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
Fire	
ASTM E84	Standard test method for surface burning characteristics of building materials
ASTM E108	Standard test methods for fire tests of roof coverings
ASTM E136	Standard test method for behavior of materials in a vertical tube furnace at 750°C
ASTM E662	Standard test method for specific optical density of smoke generated by solid materials
ASTM E648	Standard test method for critical radiant flux of floor-covering systems using a radiant heat energy source
ASTM E970	Standard test method for critical radiant flux of exposed attic floor insulation using a radiant heat energy source
ASTM E2768	Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test)
ASTM E2886	Standard Test Method for Evaluating the Ability of Exterior Vents to Resist the Entry of Embers and Direct Flame Impingement
BS 7239	Fire testing to toxicity
CAN/ULC S102	Standard method of test for surface burning characteristics of building materials and assemblies
CAN/ULC S102.2	Surface burning characteristics of flooring, floor covering, and miscellaneous materials
CAN/ULC S107	Methods of fire tests of roof coverings
CAN/ULC S109	Standard method for flame tests of flame resistant fabrics and films
CSFM Title 12-7A-4 (Part B)	Materials and construction methods for exterior wildfire exposure - decking
CSFM Title 12-7A-5	Materials and construction methods for exterior wildfire exposure - ignition-resistant material

SCOPE OF ACCREDITATION

CSFM Title 19 1237.1	Test method (small scale test)
FAR 25.855	Fire protection – cargo or baggage compartments
FTMS 191A 5903.1.89	Testing for flame resistance (section 5903.1)
NFPA 701	Standard methods of fire tests for flame propagation of textiles and films
UL 94	Standard for tests for flammability of plastic materials for parts in devices and appliances
UL 723	Standard for test for surface burning characteristics of building materials
UL 790	Standard for standard test methods for fire tests of roof coverings
UL 1256	Standard for fire test of roof deck constructions
Physical	
40 CFR 770	Formaldehyde Standards for Composite Wood Products
1997 UBC 7-6	Thickness, density determination and cohesion/adhesion for spray-applied fire-resistive material
1997 UBC 15-5	Roof Tile
1997 UBC 15-6	Modified bitumen, thermoplastic and thermoset membranes used for roof coverings
AS/NZS 2908.1	Cellulose-cement products Part 1: Corrugated sheets
AS/NZS 2908.2	Cellulose-cement products Part 2: flat sheets
ASTM C39/C39M	Standard test method for compressive strength of cylindrical concrete specimens
ASTM C42	Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
ASTM C67	Standard test methods for sampling and testing brick and structural clay tile
ASTM C109	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
ASTM C192/C192M	Standard practice for making and curing concrete test specimens in the laboratory
ASTM C297/C297M	Standard test method for flatwise tensile strength of sandwich constructions

ASTM C473	Standard test methods for physical testing of gypsum panel products
ASTM C474	Standard test methods for joint treatment materials for gypsum board construction
ASTM C475/C475M	Standard specification for joint compound and joint tape for finishing gypsum board
ASTM C482	Standard test method for bond strength of ceramic tile to Portland cement paste
ASTM C617	Standard Practice for Capping Cylindrical Concrete Specimens
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 C794	Standard test method for adhesion-in-peel of elastomeric joint sealants
ASTM C836/C836M	Standard specification for high solids content, cold liquid-applied elastomeric waterproofing membrane for use with separate wearing course (sections 6.7, 6.8, 6.9, and 6.11)
ASTM C880/C880M	Standard test method for flexural strength of dimension stone
ASTM C1167	Standard specification for clay roof tiles
ASTM C1306	Standard test method for hydrostatic pressure resistance of a liquid-applied waterproofing membrane
ASTM C1492	Standard specification for concrete roof tile
ASTM D226/D226M	Standard specification for asphalt-saturated organic felt used in roofing and waterproofing
ASTM D412	Standard test methods for vulcanized rubber and thermoplastic elastomers—tension
ASTM D570	Standard test method for water absorption of plastics
ASTM D635	Standard test method for rate of burning and/or extent and time of burning of plastics in a horizontal position
ASTM D638	Standard test method for tensile properties of plastics
ASTM D751	Standard test methods for coated fabrics

ASTM D790	Standard test methods for flexural properties of unreinforced and reinforced plastics and electrical insulating materials
ASTM D1037	Standard test methods for evaluating properties of wood-base fiber and particle panel materials
ASTM D1204	Standard test method for linear dimensional changes of nonrigid thermoplastic sheeting or film at elevated temperature
ASTM D1621	Standard test method for compressive properties of rigid cellular plastics
ASTM D1622/D1622M	Standard test method for apparent density of rigid cellular plastics
ASTM D1623	Standard test method for tensile and tensile adhesion properties of rigid cellular plastics
ASTM D1642	Standard test methods for elasticity or toughness of varnishes
ASTM D1929	Standard test method for determining ignition temperature of plastics
ASTM D1970/D1970M	Standard specification for self-adhering polymer modified bituminous sheet materials used as steep roofing underlayment for ice dam protection
ASTM D2136	Standard test method for coated fabrics—low-temperature bend test
ASTM D2299	Recommended practice for determining relative stain resistance of plastics
ASTM D2395	Standard test methods for density and specific gravity (relative density) of wood and wood-based materials
ASTM D2939	Standard test methods for emulsified bitumens used as protective coatings (section 15)
ASTM D5385/D5385M	Standard test method for hydrostatic pressure resistance of waterproofing membranes
ASTM D6007	Standard Test Method for Determining Formaldehyde Concentrations in Air from Wood Products Using a Small-Scale Chamber
ASTM E154/E154M	Standard test methods for water vapor retarders used in contact with earth under concrete slabs, on walls, or as ground cover (section 13)

ASTM E334	Standard practice for general techniques of infrared microanalysis
ASTM E2178	Standard test method for air permeance of building materials
ASTM E2273	Standard test method for determining the drainage efficiency of exterior insulation and finish systems (EIFS) clad wall assemblies
ASTM E2357:	Standard Test Method for Determining Air Leakage of Air Barrier Assemblies
CAN/CGSB 37.54	Polyvinyl chloride roofing and waterproofing membrane
ICC ES AC07	Special roofing systems (test methods referenced in sections 3.0 and 4.0, except sections 3.1.6, 3.3.11, 3.3.12, 4.3.2, 4.5, 4.10 and 4.11)
ICC ES AC11	Cementitious exterior wall coatings (test methods referenced in sections 3.0 and 4.0)
ICC ES AC29	Cold, liquid-applied, below-grade, exterior dampproofing and waterproofing materials (test methods referenced in section 3.0)
ICC ES AC38	Water-resistive barriers (test methods referenced in section 4.0)
ICC ES AC39	Walking decks (test methods referenced in section 4.0)
ICC ES AC48	Self-adhered roof underlayments for use as ice barriers (test methods referenced in section 4.0)
ICC ES AC71	Foam plastic sheathing panels used as weather-resistive barriers (test methods referenced in section 3.0)
ICC ES AC75	Membrane roof-covering systems (test methods referenced in section 4.0)
ICC ES AC90	Fiber cement siding used as exterior wall siding (test methods referenced in sections 3.0 and 4.0)
ICC ES AC92	Polymer-based, polymer-modified and high-pressure laminate exterior and interior wall cladding (test methods referenced in sections 3.0 and 4.0)
ICC ES AC107	Classified wood roof systems (test methods referenced in sections 3.0 and 4.0)
ICC ES AC114	Rigid polyethylene, below-grade, dampproofing and wall waterproofing material (test methods referenced in sections 3.0 and 4.0)

ICC ES AC148	Flexible flashing materials (test methods referenced in sections 3.0 and 4.0)
ICC ES AC166	Metal roof coverings (test methods referenced in sections 3.0 and 4.0)
ICC ES AC180	Clay and concrete roof tiles (test methods referenced in section 3.0)
ICC ES AC188	Roof underlayments (test methods referenced in Table 1)
ICC ES AC191	Metal plaster bases (lath) (test methods referenced in sections 3.0 and 4.0)
ICC ES AC207	Polypropylene roof underlayments (test methods referenced in section 4.0)
ICC ES AC219	Exterior insulation and finish systems (test methods referenced in sections 3.0 and 4.0)
ICC ES AC235	EIFS clad drainage wall assemblies (test methods referenced in sections 3.0 and 4.0)
ICC ES AC275	Glass fiber lath used in cementitious exterior wall coatings or exterior cement plaster (stucco) (test methods referenced in section 3.0)
ISO 8336	Fibre-cement flat sheets - Product specification and test methods
TAS 112	Standard requirements for concrete roof tiles (section 7.0 except section 7.4)
TAS 201-94	Impact Test Procedures
TAS 202-94	Criteria for testing impact and non-impact resistant building envelope components using uniform static air pressure
TAS 203-94	Criteria for testing products subject to cyclic wind pressure loading
UL 1703	Standard for flat-plate photovoltaic modules and panels (sections 16, 25, 29, 31, 34, 37.1, and 41 only)
UL 1897	Standard for uplift tests for roof covering systems
UL 2218	Standard for impact resistance of prepared roof covering materials
UL 2703	Standard for mounting systems, mounting devices, clamping/retention devices, and ground lugs for use with

	flat-plate photovoltaic modules and panels (except section 19.2)
Structural	
1997 UBC 24-1	Flat glass
1997 UBC 24-2	Safety glazing
AAMA 711	Test methods and minimum performance requirements for self-adhering flashing products used in the installation of exterior fenestration products
AAMA 712	Windows Mullions and Skylights
ASTM A370	Standard Test Methods and Definitions for Mechanical Testing of Steel Products (Sections 6 thru 14)
ASTM C22/C22M	Standard specification for gypsum
ASTM C36/C36M	Standard specification for gypsum wallboard
ASTM C97/C97M	Standard test methods for absorption and bulk specific gravity of dimension stone
ASTM C1185	Standard test methods for sampling and testing non-asbestos fiber-cement flat sheet, roofing and siding shingles, and clapboards (except sections 14.0 and 15.0)
ASTM C1186	Standard specification for flat fiber-cement sheets (except section S9)
ASTM D7032	Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite and Plastic Lumber Deck Boards, Stair Treads, Guards, and Handrails (except section 4.8)
ASTM E8	Standard Test Methods for Tension Testing of Metallic Materials
ASTM E72	Standard test methods of conducting strength tests of panels for building construction
ASTM E330/E330M	Standard test method for structural performance of exterior windows, doors, skylights and curtain walls by uniform static air pressure difference
ASTM E935	Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings1
ASTM E2126	Standard Test Method for Cyclic (revised) Load Test for Shear Resistance of Vertical Elements of Lateral Force Resisting Systems for Buildings

ICC ES AC04	Sandwich panels (test methods referenced in section 4.0, except section 4.5)
ICC ES AC05	Sandwich panel adhesives (test methods referenced in sections 7.0 and 8.0, except sections 8.7 and 8.8)
ICC ES AC51	Precast stone veneer (test methods referenced in section 4.0)
ICC ES AC116	Nails (test methods referenced in section 3.0, except section 3.2)
ICC ES AC118	Tapping screw fasteners (test methods referenced in section 3.0 and 4.0)
ICC ES AC120	Wood-frame horizontal diaphragms, vertical shear walls and braced walls with alternative fasteners (test methods referenced in section 3.0 and 4.0)
ICC ES AC174	Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (Test methods referenced in Sections 3 except 3.9, 4 and 5)
ICC ES AC273	Acceptance Criteria For Handrails And Guards (Test methods referenced in Sections 3 and 4)
ICC ES AC390	Wall Panels with a welded steel perimeter frame used in agricultural storage structures (test methods referenced in section 3.0 (except sections 3.1, 3.2 and 3.5.2.3)
ICC ES AC395	Headed shear stud reinforcement assemblies for concrete slabs or footings (test methods referenced in section 3.0 and 4.0)

Thermal

ASTM C518	Standard test method for steady-state thermal transmission properties by means of the heat flow meter apparatus
ASTM C578	Standard specification for rigid, cellular polystyrene thermal insulation (except sections 11.4 and 11.10)
ASTM C1029	Standard specification for spray-applied rigid cellular polyurethane thermal insulation
ASTM E2634	Standard specification for flat wall insulating concrete form (ICF) systems (except the VOC test)
CAN/ULC S701	Standard for thermal insulation, polystyrene, boards and pipe covering (except section 6.3.9 and limited oxygen index)

CAN/ULC S705.1	Standard for thermal insulation – spray applied rigid polyurethane foam, medium density – material specification (except section 5.5.10, VOC test)
CAN/ULC S712.1	Standard for thermal insulation - light density, open cell spray applied semi-rigid polyurethane foam - material specification (except fungi resistance, open-cell content volume and the time to occupancy)
ICC ES AC12	Foam plastic insulation (test methods referenced in sections 3.1, 3.2 and 3.4.5)
ICC ES AC377	Spray-applied foam plastic insulation (test methods referenced in sections 3.1.1, 3.1.3 and 3.2)

Electrical

ANSI/AAMI ES60601-1:2005	Medical electrical equipment—Part 1: General requirements for basic safety and essential performance
IEC 60204-1	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
IEC 60601-1:2015	Medical electrical equipment—Part 1: General requirements for basic safety and essential performance
IEC/EN 60825-1	Safety of laser products - Part 1: Equipment classification and requirements
IEC/EN 60825-2	Safety of laser products - Part 2: Safety of optical fiber communication systems (OFCS)
IEC/EN 60950-1	Information technology equipment - Safety - Part 1: General requirements (Excluding Clauses 2.10.4, 2.10.5.4, 2.10.8.2 /2.10.9/ 2.10.10/ 2.10.11, 3.2.5.1, 4.2.8, 4.3.12, 4.3.13.2, 4.3.13.3, 4.3.13.4, 4.3.13.5.2, 4.6.2, 4.7.3, 4.7.3.6, Annex U, annex Q, Annex AA and Annex CC)
IEC 60950-21	Information Technology Equipment – Safety – Part 21: Remote Power Feeding
IEC 60950-23	Information Technology Equipment - Safety - Part 23: Large Data Storage Equipment
IEC/EN 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements
IEC 61010-2-010	Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-010: Particular requirements for laboratory equipment for the heating of material

IEC 61010-2-081	Particular Requirements for Automatic and Semi-Automatic Laboratory Equipment for Analysis and Other Purposes
IEC 61010-2-091	Particular requirements for cabinet X-ray systems
IEC 61010-2-101	Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-101: Particular requirements for in vitro diagnostic (IVD) medical equipment
IEC 62368-1	Audio/video, information and communication technology equipment – Part 1: Safety requirements
UL 50	Enclosures for Electrical Equipment, Non-Environmental Considerations
UL 50E	Enclosures for Electrical Equipment, Environmental Considerations
UL 73	UL Standard for Motor-Operated Appliances (Excluding Clauses 38, 56, 57, 64 and 65)
UL 467	Standard for Grounding and Bonding Equipment (Excluding Clause 9.5)
UL 499	Standard for Electric Heating Appliances (Excluding Clauses 91 and 92)
UL 506	Specialty Transformers
UL 647	Grounding and Bonding Equipment
UL 676	Standard for Underwater Luminaires and Submersible Junction Boxes
UL 962A	Standard for Furniture Power Distribution Units
UL 1012	Standard for Power Units Other Than Class 2
UL 1310	Standard for Class 2 Power Units
UL 1573	Standard for Stage and Studio Luminaires and Connector Strips (Excluding Clause 46)
UL 1838	Low Voltage Landscape Lighting Systems (Excluding Clause 63)
UL 1951	Standard for Electric Plumbing Accessories (Excluding Clause 52)
UL 2388	Low Voltage Landscape Lighting Systems (Excluding Clauses 31 and 33)

UL 5085-1	Low Voltage Transformers-Part 1: General Requirements (Excluding Clause 23)
UL 5085-2	Low Voltage Transformers-Part 2: General Purpose Transformers
UL 5085-3	Low Voltage Transformers-Part 3: Class 2 and Class 3 Transformers
UL 8752	Organic Light Emitting Diode (Oled) Panels
UL 60950-21	Information Technology Equipment - Safety - Part 21: Remote Power Feeding
UL 60950-22	UL Standard for Safety Information Technology Equipment – Safety – Part 22: Equipment to be Installed Outdoors (Excluding Clause 11.3)
UL 60950-23	Information Technology Equipment - Safety - Part 23: Large Data Storage Equipment
UL 61010-2-020	Particular Requirements for Laboratory Centrifuges
UL 61010-2-081	Particular Requirements for Automatic and Semi-Automatic Laboratory Equipment for Analysis and Other Purposes
UL 61010-2-091	Particular requirements for cabinet X-ray systems
UL 61010-2-101	Particular requirements for in vitro diagnostic (IVD) medical equipment

CGSB: Canadian General Standards Board

CSFM: California State Fire Marshall

FAR: Federal Aviation Regulations

FTMS: Federal Test Method Standard

NFPA: National Fire Protection Association

TAS: Testing Application Standards (Miami-Dade County Protocol)

UBC: Uniform Building Code

UL: Underwriters Laboratories

ULC: Underwriters Laboratories Canada