



INTERNATIONAL
ACCREDITATION
SERVICE®

CERTIFICATE OF ACCREDITATION

This is to attest that

QAI LABORATORIES LTD.

#16-211 SCHOOLHOUSE STREET
COQUITLAM, BRITISH COLUMBIA V3K 4X9
CANADA

Testing Laboratory TL-239

has met the requirements of the IAS Accreditation Criteria for Testing Laboratories (AC89), has demonstrated compliance with ISO/IEC Standard 17025:2005, *General requirements for the competence of testing and calibration laboratories*, and has been accredited, commencing April 2, 2015, for the test methods listed in the approved scope of accreditation.

(see laboratory's scope of accreditation for fields of testing and accredited test methods)

This accreditation certificate supersedes any IAS accreditation bearing an earlier effective date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation.

See <http://iasonline.org/More/search.html> for current accreditation information, or contact IAS at 562-364-8201.



C.P. Ramani, P.E., C.B.O
President



SCOPE OF ACCREDITATION

IAS Accreditation Number	TL-239
Accredited Entity	QAI Laboratories Ltd.
Address	#16-211 Schoolhouse Street Coquitlam, British Columbia V3K 4X9 Canada
Contact Name	Lawrence Gibson President
Telephone	(604) 461-8378
Effective Date of Scope	January 19, 2016
Accreditation Standard	ISO/IEC Standard 17025:2005

FIELDS OF TESTING	ACCREDITED TEST METHODS
Roof Coverings	CAN/ULC Standard S107 (Section 5.6 only); UL Standard 2218; Test methods referenced in Section 4.4 of ICC-ES Acceptance Criteria AC07;
Concrete Roofing Tiles	CAN/CSA Standard Series A220, Sections A220.0 (Sections 5, 6 and 7) and A220.1 (Subsections 4.5.6.2, 4.5.6.3 and 4.5.6.4 only);
Fire Resistance	ASTM Standard E119, E814, and E2074; UL Standards 10B and 10C; ANSI/UL 263; NFPA Standards 251 and 252; ULC Standards S101, S104 and S105; UBC Standards 7-1 and 7-2;
Physical Testing	<u>Building Components:</u> Test methods referenced in Sections 3.0 and 4.0 of ICC-ES Acceptance Criteria AC273; <u>Softwood Plywood:</u> CSA Standard 0151 (Section 5.2 only); <u>Trusses and Truss Plates:</u> TPI Sections 4.3, 4.4, 4.5, 4.6, 5.2, 5.3, 5.4 and 5.5; CSA Standard S347 (Section 8.2 only); <u>Wood Adhesives:</u> CSA Standard Series 0112 (Section 4.2 only); <u>Oriented Strand Board:</u> CSA Standard 0452, Sections 0452-1 (Sections 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7 and 6.8 only) and 0452-2 (Subsections 7.1, 7.2 and 7.3 only); <u>Windows:</u> CAN/CSA Standard A440.2/A440.3 (limited to computer modeling evaluations only); ASTM Standards E283, E330, E547 and F588;
Plumbing Fixtures	CSA Standard Series B45, Sections B45.0 (Subsections 9.5.4, 15.4, 15.8.6, 15.8.7.2, 15.10 and 15.11 only), B 45.1 (Subsections 7.1 and 7.3 only), B45.4 (Subsection 4.4 only) and B45.8 (Subsections 3.1 and 3.2 only);
Plastic Plumbing Fixtures	CSA B45.5/IAPMO Z124 (Sections 5.4, 5.5, and 5.16 only);
Plastic Non-pressure Pipe	CSA Standard Series B1800, Sections B181.1 (Subsection 5.15 only), B181.2 (Subsection 5.15 only), B182.1, (Subsection 5.12, 5.14, 5.15 and 5.17 only), B182.6, (Subsection 8.7 only) and B182.7 (Subsection 8.7 only);



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FIELDS OF TESTING	ACCREDITED TEST METHODS
Vitrified Clay Pipe	ASTM Standard C301 (Section 5.4 only);
Cast Iron Pipe and Fittings	CSA Standard B70 (Section 4 only)
Pressure Pipe	CSA Standard Series B137, Sections B137.0 (Subsection 6.9 only B137.3 (Subsection 6.4.2 only), B137.4 (Subsection 4.3 only), B137.4.1 (Subsection 5.6 only), B137.9 (Sections 5.7 and 5.8 only) and B137.12 (Subsection 4.3 only);
Performance Testing of Electric Thermostats	CSA Standard C273.4 (Sections 5.7, 5.9 and 5.10 only);
Membrane Roofing	CGSB Standard 37-GP-56M (Sections 7.2.2, and 7.2.3 only);
Electrical Appliances	CSA Standard C22.2, No. 0;
Double-insulated Electrical Equipment	CSA Standard C22.2, No. 0.1;
Properties of Polymeric Materials	CSA Standard C22.2, No. 0.17; ASTM Standard D635;
Bonding and Grounding of Electrical Equipment	CSA Standard C22.2, No. 0.4;
Electric Clocks	CSA Standard C22.2, No. 6 (Sections 6.3, 6.4, 6.5, 6.6, 6.7, 6.9, 7.4.1, 7.4.2, 8.4.1, 8.4.2 and 8.4.3 only); UL Standard 826;
Luminaries	CSA Standards C22.2, No. 9, No. 2501/UL Standard 1598, and ASTM Standard E598 (Except Section 16.7);
Electric Floor Surfacing and Cleaning Machines	CSA Standard C22.2, No. 10; UL Standard 1017;
Portable Luminaries	CSA Standard C22.2, No. 12; UL Standard 153;
Industrial Control Equipment	CSA Standard C22.2, No. 14 and CSA B44.1/ASME A17.5;
Electrically Heated Warming Pads	CSA Standard C22.2, No. 15; UL Standard 130;
Outlet Boxes, Fittings And Hardware	CSA Standard C22.2, No. 18;
Cord Sets and Power Supply Cords	CSA C22.2 No 21[Except Clauses: 4.10.2, 5.7, 6.4.6, 6.5, 6.6, 6.7, 6.8, 6.9, 6.10, 6.11 (Hospital Grade Cords)];
Temperature-indicating and Regulating Equipment	CSA Standard C22.2, No. 24; UL Standard 873;
Switchgear Assemblies	CSA Standard C22.2, No. 31;
Hairdressing Equipment	CSA Standard C22.2, No. 36; UL Standard 859;
Christmas Tree and Other Lighting	CSA Standard C22.2, No. 37 (Sections 6.3, 6.9, 6.14.4, 6.14.5 and 6.15 only); UL Standard 588;
Cutout, Junction, And Pull Boxes	CSA Standard C22.2, No. 40;
Lamp Holders	CSA Standard C22.2, No. 43;
Electric Air-Heaters	CSA Standard C22.2, No. 46;
Electric Washing Machines	CSA Standard C22.2, No. 53; UL 2157;
Special Use Switches	CSA Standard C22.2, No. 55;
Household Cooking Ranges	CSA Standard C22.2, No. 61; UL Standard 858;
Household Refrigerators and Freezers	Bi-national CSA Standard C22.2, No. 63; UL Standard 250;
Household Cooking And Liquid-Heating Appliances	CSA Standard C22.2, No. 64; UL Standard 1026;
Specialty Transformers	CSA Standard C22.2, No. 66;
Motor-Operated Appliances (Household and Commercial)	CSA Standard C22.2, No. 68; UL Standard 73;
Heater Elements	CSA Standard C22.2, No. 72 (Sections 6.2, 6.3, 6.4 and 6.11 only); UL Standard 1030;
Electrically-Equipped Machine Tools	CSA Standard C22.2, No. 73 (Sections 62 and 63 only);
Motors with Inherent Overheating Protection	CSA Standard C22.2, No. 77;
Electric Irons	CSA Standard C22.2, No. 81; UL Standard 60335-2-3;
Rigid PVC Boxes and Fittings	CSA Standard C22.2, No. 85;



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FIELDS OF TESTING	ACCREDITED TEST METHODS
Construction and Test of Industrial Heating Equipment	CSA Standard C22.2, No. 88 (Sections 6.2, 6.3, 6.4, 6.5 and 6.6 only);
Swimming Pool Luminaries, Submersible Luminaries and Accessories	CSA Standard C22.2, No. 89; UL Standard 676;
Special-Purpose Enclosures	CSA Standard C22.2, No. 94 ; UL Standard 50;
Domestic Electric Ironing Machines	CSA Standard C22.2, No. 99 (Sections 80, 82, 103 and 106 only); UL Standard 141;
Motors and Generators	CSA Standard C22.2, No. 100;
Electrically Heated Bedding Appliances for Household Use	CSA Standard C22.2, No. 101; UL Standard 964;
Humidifiers	CSA Standard C22.2, No.104; UL Standard 998 (Sections 52, 55, 56, 57, 58, 59, 60, 61, 65, 68, 70, 73, 74 and 75 only);
Construction and Test Of Electrical Equipment for Woodworking Machinery	CSA Standard C22.2, No. 105 (Sections 51 and 52 only);
Commercial and Industrial Power Supplies	CSA Standard C22.2, No. 107.1; UL Standard 458;
Battery Chargers	CSA Standard C22.2, No. 107.2;
Liquid Pumps	CSA Standard C22.2, No. 108; UL 778
Commercial Cooking Appliances	CSA Standard C22.2 No. 109; UL Standard 197;
Household Electric Storage-Tank Water Heaters	CSA Standard C22.2, No. 110 (Sections 6.2, 6.3, 6.4, 6.5.2, 6.6 and 7.3.1 only); UL Standard 174;
Electric Clothes Dryers	CSA Standard C22.2, No. 112; UL Standard 2158 (Sections 9, 10, 11, 13, 19, 32.14, 32.15, 33.2 and 33.3 only);
Fans And Ventilators	CSA Standard C22.2, No. 113; UL Standard 507;
Room Air Conditioners	CSA Standard C22.2, No. 117 (Sections 6.4, 6.5, 6.6, 6.7, 6.8, 6.10, 6.12.1, 6.12.2, 6.14, 6.15, 6.17 and 6.18 only); UL Standard 484;
Commercial Refrigerated Equipment	CSA Standard C22.2, No.120; UL Standard 471;
Hand-Held Electrically Heated Tools	CSA Standard C22.2, No. 122 (Sections 6.2, 6.3, 6.4, 6.5, 6.7.1, 6.10, 7.6.2 and 7.6.3 only); UL Standard 499;
Vending Machines	CSA Standard C22.2, No. 128-95 (Sections 6.3, 6.4.2, 6.4.3, 6.4.4, 6.4.5, 6.5, 6.6, 6.7, 6.8, 6.9, 6.11, 6.12, 6.13, 6.21 and 6.23 only); UL Standard 751;
Electrically Operated Valves	CSA Standard C22.2, No. 139; UL Standard 3121-1;
Unit Equipment for Emergency Lighting	CSA Standard C22.2, No. 141; UL Standard 924;
Process Control Equipment	CSA Standard C22.2, No. 142; UL Standard 61010C-1;
Motor Operated Gardening Appliances	CSA Standard C22.2, No. 147; UL Standard 82;
Electrically Operated Toys	CSA Standard C22.2, No. 149; UL Standard 696;
Terminal Blocks	CSA Standard C22.2, No. 158 (Sections 6.4 and 6.6 only); UL Standard 1059;
Electric Sauna Heating Equipment	CSA Standard C22.2, No. 164; UL Standard 875;
Stage And Studio Luminaries	CSA Standard C22.2, No. 166; UL Standard 1573;
Household Dishwashing Machines	CSA Standard C22.2, No. 167; UL Standard 749 (Sections 9, 10, 13, 16, 19.1, 19.2, 33.1 and 33.2 only)
Commercial Dishwashing Machines	CSA Standard C22.2, No. 168; UL Standard 921;
Electric Clothes Washing Machines and Extractors	CSA Standard C22.2, No. 169; UL Standard 2157 (Sections 9, 10, 13, 19.1, 19.4, 20.1, 7.2, 27.3, 32.16, 32.17, 32.18, 33.2 and 33.3 only);
Transformers for Toy and Hobby Use	CSA Standard C22.2, No 173; UL Standard 697;
Clock-Operated Switches	CSA Standard C22.2, No 177; UL Standard 917;
Electrostatic Air Cleaners	CSA Standard C22.2, No. 187 ; UL Standard 867



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FIELDS OF TESTING	ACCREDITED TEST METHODS
High-Voltage Insect Killers	CSA Standard C22.2, No. 189 (Sections 6.3, 6.4, 6.5, 6.6 and 6.11 only); UL Standard 1559;
Engine Heaters And Battery Warmers	CSA Standard C22.2, No. 191 (Sections 6.2, 6.3, 6.4, 6.13, 6.16, 6.18.2 and 6.18.3 only);
Motor Operated Food Processing Appliances	CSA Standard C22.2, No. 195;
Electric Waterbed Heater Systems	CSA Standard C22.2, No. 200 (Sections 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.9, 6.15 and 6.16 only); UL Standard 1445;
Modular Wiring Systems for Office Furniture and Display Cabinets	CSA Standard C22.2, No. 203 (Sections 6.1, 6.2, 6.5, 6.9 and 6.11 only); UL Standard 65;
Signal Equipment	CSA Standard C22.2, No. 205; UL Standard 2017;
Portable and Stationary Electric Signs and Displays	CSA Standard C22.2, No. 207; UL Standard 48;
Hazardous Location Equipment	CSA C22.2 No. 213-M1987 and CSA C22.2 No. 157; UL Standards 913 and 1604;
Communication Cables	CSA Standard C22.2, No. 214; UL Standard 444 (Sections 5.2, 5.3, 6.6 and 6.16 only);
Radiant Space Heating Panels Sets and Systems	CSA Standard C22.2, No. 217 ; UL Standard 1693;
Spas, Hot Tubs, And Associated Equipment	CSA Standard C22.2, No. 218.1; UL Standard 1563;
Hydro-Massage Bathtub Appliances	CSA Standard C22.2, No. 218.2; UL Standard 1795;
Electrically Heated Hobby and Educational Type Kilns	CSA Standard C22.2, No. 221 (Sections 6.2, 6.4, 6.5, 6.6 and 6.7 only);
Radiant Heaters and Infrared and Ultraviolet Lamp Assemblies for Cosmetic or Hygienic Purposes in Non-Medical Applications	CSA Standard C22.2, No. 224; UL Standard 482;
Attachment Plugs and Receptacles	CSA Standard C22.2 No. 42 (exclusion 7.16.2-7.16.7, 7.18, 7.19.2, 7.19.3); UL Standard 498 (exclusion Supplement SD, Hospital Grade Devices)
Power Supplies 21th Extra-Low Voltage Class 2 Outputs	CSA Standard C22.2, No. 223; UL Standard 1310;
Electrical and Electronic Measuring and Test Equipment	CSA Standard C22.2, No. 231(Sections 7.2, 10, 11.1.1, 11.3, 12.1, 12.2, 12.3, 12.4 and 16.3 only); UL Standard 3111;
Component Power Supplies	CSA Standard C22.2, No. 234 ; UL Standard 1012;
Heating and Cooling Equipment	CSA Standard C22.2 No. 236; UL Standard 1995;
Vacuum Cleaners and Blower Cleaners	CSA Standard C22.2, No. 243; UL Standard 1017 (Sections 5.3, 5.5, 5.6, 5.7, 5.8, 5.9.1, 5.9.2, 5.10, 5.11, 5.12.1, 5.12.2, 5.12.3, 5.12.5, 5.12.6, 5.12.7, 5.13, 5.20.5, 5.20.7, 5.20.9, 5.24, 5.25, 6.13, 6.15, 6.16, 6.20, 7.4, 7.5, 7.7, 7.8, 7.11, 8.1 and 8.2 only);
Operators and Systems of Doors, Gates, Draperies and Louvres	CSA Standard C22.2, No. 247; UL Standard 325;
Supplemental Fuses	CSA Standard C22.2, No. 248-14; UL Standard 248-14 (Sections 8.2, 8.3 and 8.4 only);
Audio, Video, and Similar Equipment	CSA Standard C22.2, No. 60065; UL Standard 62368 series;
Portable Electrical Motor-Operated and Heating Appliances	CSA Standard C22.2, No. 60335 -1; UL Standard 603351;
Medical Electrical Equipment	CSA Standard C22.2, No. 60601-1; UL Standard 60601-1;
Electric Tools	CSA Standard C22.2, No. 60745-1;
Information Technology Equipment Including Electrical Business Equipment	Bi-national CSA Standard C22.2, No. 60950; UL Standard Standard 60950;



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FIELDS OF TESTING	ACCREDITED TEST METHODS
Laboratory Equipment	CSA C22.2 No 61010; UL Standard 61010;
EMC/EMI of Electrical and Electronic Products	EN/IEC Standards 61000-3-2, 61000-3-3, 61000-4-2, 61000-4-3, 61000-4-4, 61000-4-5, 61000-4-6, 61000-4-8, 61000-4-9, 61000-4-11, 61000-6-1, 61000-6-2, 61000-6-3, and 61000-6-4; IEC Standards 60601-1-2, 60945, 61326-1, 61326-2-1, and 61326-2-2; EN 55011/CISPR 11, EN 55012/CISPR 12, EN 55016/CISPR 16-2-1, EN 55016/CISPR 16-2-2, EN 55016/CISPR 16-2-3, EN 55016/CISPR 16-2-4, EN 55022/CISPR 22 and EN 55024 /CISPR 24; ETSI EN 300 328, ETSI EN 300 330-1 and ETSI EN 300 330-2; EN 55103-1 and EN 55103-2; FCC.47 CFR Part 15, FCC 47 CFR Part 18, FCC 47 CFR Part 68, FCC 47 CFR Part 90, ANSI C63.4, ANSI/TIA-603-C; ICES-001 and ICES-003; RSS Standards 119, 133, 134, 195, 210, 213, 215 and RSS-Gen