

**Miami-Dade County, Florida**

DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES

BOARD AND CODE ADMINISTRATION DIVISION

PRODUCT CONTROL SECTION

**Laboratory Certificate**



11805 S.W. 26 Street-Room 208  
Miami, Florida 33175-2474  
T (786) 315-2590 Fax (786) 315-2599

This certifies that Twining Consulting Inc. dba RADCO located at 18071 Mount Washington Street, Fountain Valley, CA 92708 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:

AAMA 910 - (EXCEPT CL. 3.1.13)	ASTM E1186
AAMA 920	ASTM E2068
ASTM E783	ASTM F588
ASTM E987	ASTM F842
International Accreditation Service, Inc. No. TL-209	
International Accreditation Service, Inc. No. AA-650	
TAS104 (Excluded Section 18-Granule Adhesion)	
TAS 202	

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:

Linas Jonas Vitkus, P.E.

*This Certification and Registration Approved: **February 10, 2022***

*This Certification and Registration Expires : **August 31, 2026***

*Certification No. : **22-0120.03** Revises: 21-0805.02*

A blue ink signature of Helmy A. Makar, written in a cursive style.

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

A blue ink signature of Americo Segura, written in a cursive style.

Americo Segura, M.S., CGC  
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®

# CERTIFICATE OF ACCREDITATION

*This is to attest that*

## **TWINING CONSULTING INC DBA RADCO**

18071 MT. WASHINGTON STREET  
FOUNTAIN VALLEY, CALIFORNIA 92780, U.S.A.

### **Testing Laboratory TL-209**

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 January 14, 2022



A handwritten signature in black ink, reading "Raj Nathan". The signature is written in a cursive style with a horizontal line underneath.

**President**

Visit [www.iasonline.org](http://www.iasonline.org) for current accreditation information.

# SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | [www.iasonline.org](http://www.iasonline.org)

## TWINING CONSULTING INC DBA RADCO

[radcoinc.com](http://radcoinc.com)

**Contact Name** David Kehrl

**Contact Phone** +1-562-272-7231

*Accredited to ISO/IEC 17025:2017*

*Effective Date January 14, 2022*

Conformity Specifications	
ASTM E699	Standard specification for agencies involved in testing, quality assurance, and evaluating of manufactured building components (part A only)
Gas-Fired Appliances	
AGA Requirement 8-96	Requirement for gas-fired decorative illuminating appliances for outdoor installation
ANSI Z21.60	Decorative gas appliances for installation in solid-fuel burning fireplaces
ANSI Z21.84	Standard for manually lighted, natural gas, decorative gas appliances for installation in solid-fuel burning fireplaces
ANSI Z21.88	Vented gas fireplace heaters
ANSI Z21.97	Outdoor decorative gas appliances
Thermal	
ASTM C518	Standard test method for steady-state thermal transmission properties by means of the heat flow meter apparatus
Physical	
AATCC 127	Water resistance: hydrostatic pressure test
AISI TS-4	Standard test methods for determining the tensile and shear strength of screws
ASTM A90/A90M	Standard test method for weight (mass) of coating on iron and steel articles with zinc or zinc-alloy coatings
ASTM B117	Standard practice for operating salt spray (fog) apparatus
ASTM C97/C97M	Standard test methods for absorption and bulk specific gravity of dimension stone
ASTM C109/C109M	Standard test method for compressive strength of hydraulic cement mortars (using 2-in. or (50-mm) cube specimens)
ASTM C203	Standard test methods for breaking load and flexural properties of block-type thermal insulation
ASTM C209	Standard test method for cellulosic fiber insulating board

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ASTM C272	Standard test method for water absorption of core materials for sandwich constructions
ASTM C273/C273M	Standard test method for shear properties of sandwich core materials
ASTM C297	Standard test method for flatwise tensile strength of sandwich constructions
ASTM C303	Standard test method for dimensions and density of preformed block and board-type thermal insulation
ASTM C348	Standard test method for flexural strength of hydraulic-cement mortars
ASTM C365	Standard test method for flatwise compressive properties of sandwich cores
ASTM C473	Standard test methods for physical testing of gypsum panel products
ASTM C481	Standard test method for laboratory aging of sandwich constructions
ASTM C482	Standard test method for bond strength of ceramic tile to Portland cement paste
ASTM C567/C567M	Standard test method for determining density of structural lightweight concrete
ASTM C578	Standard specification for rigid, cellular polystyrene thermal insulation
ASTM C591	Standard specification for unfaced preformed rigid cellular polyisocyanurate thermal insulation
ASTM C794	Standard test method for adhesion-in-peel of elastomeric joint sealants
ASTM C1185	Standard test methods for sampling and testing non-asbestos fiber-cement flat sheet, roofing and siding shingles, and clapboards
ASTM C1186	Standard specification for flat fiber-cement sheets
ASTM C1289	Standard specification for faced rigid cellular polyisocyanurate
ASTM C1386	Standard specification for precast autoclaved aerated concrete (AAC) wall construction units
ASTM D256	Standard test methods for determining the izod pendulum impact resistance of plastics
ASTM D570	Standard test method for water absorption of plastics
ASTM D618	Standard practice for conditioning plastics for testing
ASTM D624	Standard test method for tear strength of conventional vulcanized rubber and thermoplastic elastomers
ASTM D635	Standard test method for rate of burning and/or extent and time burning of plastics in a horizontal position
ASTM D638	Standard test method for tensile properties of plastics
ASTM D648	Standard test method for deflection temperature of plastics under flexural load in the edgewise position

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ASTM D779	Standard test method for determining the water vapor resistance of sheet materials in contact with liquid water by the dry indicator method
ASTM D781	Method of test for puncture and stiffness of paperboard, corrugated and solid fiberboard
ASTM D790	Standard test methods for flexural properties of unreinforced and reinforced plastics and electrical insulating materials
ASTM D792	Standard test methods for density and specific gravity (relative density) of plastics by displacement
ASTM D816	Standard test methods for rubber cements
ASTM D828	Standard test method for tensile properties of paper and paperboard using constant-rate-of-elongation apparatus
ASTM D882	Standard test method for tensile properties of thin plastic sheeting
ASTM D896	Standard practice for resistance of adhesive bonds to chemical reagents
ASTM D903	Standard test method for peel or stripping strength of adhesive bonds
ASTM D1037	Standard test methods for evaluating properties of wood-base fiber and particle panel materials
ASTM D1621	Standard test method for compressive properties of rigid cellular plastics
ASTM D1622	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 D1761	Standard test methods for mechanical fasteners in wood
ASTM D1876	Standard test method for peel resistance of adhesives (t-peel test)
ASTM D1970	Standard specification for self-adhering polymer modified bituminous sheet materials used as steep roofing underlayment for ice dam protection
ASTM D2126	Standard test method for response of rigid cellular plastics to thermal and humid aging
ASTM D2247	Standard practice for testing water resistance of coatings in 100% relative humidity
ASTM D2863	Standard test method for measuring the minimum oxygen concentration to support candle-like combustion of plastics (oxygen index)
ASTM D3679	Standard specification for rigid poly (vinyl chloride) (PVC) siding Exclude: 5.6 – 5.10, 5.12
ASTM D3801	Standard Test Method for Measuring the Comparative Burning Characteristics of Solid Plastics in a Vertical Position



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ASTM D4533	Standard test method for trapezoid tearing strength of geotextiles
ASTM D5034	Standard test method for breaking strength and elongation of textile fabrics (grab test)
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 D5733	Standard test method for tearing strength of nonwoven fabrics by the trapezoid procedure
ASTM D5795	Standard test method for determination of liquid water absorption of coated hardboard and other composite wood products via "cobb ring" apparatus
ASTM D6817/D6817M	Standard specification for rigid cellular polystyrene geofoam
ASTM E8/E8M	Standard test methods for tension testing of metallic materials
ASTM E96/E96M	Standard test methods for water vapor transmission of materials
ASTM E2098/2098M	Standard Test Method for Determining Tensile Breaking Strength of Glass Fiber Reinforcing Mesh for Use in Class PB Exterior Insulation and Finish Systems (EIFS), after Exposure to a Sodium Hydroxide Solution
ASTM E2134/E2134M	Standard test method for evaluating the tensile-adhesion performance of an exterior insulation and finish system (EIFS)
ASTM E2485/E2485M	Standard test method for freeze/thaw resistance of exterior insulation and finish systems (EIFS) and water resistive barrier coatings
ASTM E2486/E2486M	Standard test method for impact resistance of class PB and PI exterior insulation and finish systems (EIFS)
ASTM E2568	Standard specification for pb exterior insulation and finish systems
ASTM E2570/E2570M	Standard test methods for evaluating water-resistive barrier (WRB) coatings used under exterior insulation and finish systems (EIFS) or EIFS with drainage
ASTM F1575	Standard test method for determining bending yield moment of nails
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
CAN/ULC-S701	Standard for thermal insulation, polystyrene, boards and pipe covering
ICC ES AC38	Water-resistive barriers (test methods referenced in sections 3.0 and 4.0)
ICC ES AC59	Direct-applied exterior finish systems (DEFS) (flexural test, water absorption, freeze-thaw, bond test and environmental cycling only) (test method referenced in sections 3.1.2.1, 3.1.2.3, 3.1.2.7, 5.2, 5.3 and 5.4.3)

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ICC ES AC212	Water-resistive coatings used as water-resistive barriers over exterior sheathing (test methods referenced in sections 3.0 and 4.0)
<b>Structural/Assemblies/Systems Performance</b>	
ACI 355.2	Qualification of post-installed mechanical anchors in concrete and commentary (except chapter 4 and sections 8.6, 9.6 and 9.7)
ACI 355.4	Qualification of post-installed adhesive anchors in concrete (except sections 7.15, 7.16, 8.6, 8.12 and 8.13)
ASTM D4226	Standard test methods for impact resistance of rigid poly (vinyl chloride) (PVC) building products
ASTM D4632/D4632M	Standard test method for grab breaking load and elongation of geotextiles
ASTM D5206	Standard test method for windload resistance of rigid plastic siding
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 D6117	Standard test methods for mechanical fasteners in plastic lumber and shapes
ASTM E72	Standard test methods of conducting strength tests of panels for building construction
ASTM E488/E488M	Standard test methods for strength of anchors in concrete elements
ASTM E564	Standard practice for static load test for shear resistance of framed walls for buildings
ASTM E661	Standard test method for performance of wood and wood-based floor and roof sheathing under concentrated static and impact loads
ASTM E695	Standard test method of measuring relative resistance of wall, floor, and roof construction to impact loading
ASTM E1190	Standard test methods for strength of power-actuated fasteners installed in structural members
ASTM E2126	Standard Test Methods for Cyclic (Reversed) Load Test for shear Resistance of Vertical Elements of the Lateral Force Resisting Systems for Buildings
ASTM E2273	Standard test method for determining the drainage efficiency of exterior insulation and finish systems (EIFS) clad wall assemblies
ASTM E2322	Standard Test method for Conducting Transverse and Concentrated Load Tests on Panels used in Floor and Roof Construction
CAN/CSGB 51.32-M77	Sheathing, membrane, breather type
ICC ES AC01	Expansion anchors in masonry elements (test methods referenced in section 5.0)
ICC ES AC04	Sandwich panels (test methods referenced in section 4.0)

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ICC ES AC11	Cementitious exterior wall coatings (test methods referenced in sections 4.2, 4.3 and 4.8)
ICC ES AC51	Precast stone veneer (test methods referenced in sections 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7)
ICC ES AC58	Adhesive anchors in masonry elements (test methods referenced in section 4.0)
ICC ES AC106	Predrilled fasteners (screw anchors) in masonry (test methods referenced in section 4.0)
ICC ES AC193	Mechanical anchors in concrete elements (test methods referenced in section 4.0, tables 4.1, 4.2 and 4.3, except method B embrittlement tests)
ICC ES AC308	Post-installed adhesive anchors in concrete elements (test methods referenced in tables 4.1, 4.2, 4.3 and 4.4 (except sections 8.16 - table 4.2 (test no.5), table 4.3 (test no. 5), table 4.4 (test no.5), 9.12 - table 4.2 (test no.17), table 4.3 (test no. 17) and tables 4.4 (test no. 16) and 9.13 - table 4.2 (test no.18), table 4.3 (test no. 18) and table 4.4 (test no.17))
ICC ES AC310	Water-resistive membranes factory-bonded to wood-based structural sheathing, used as water-resistive barriers (test methods referenced in section 4.0)
ICC ES AC358	Helical pile systems and devices (test methods referenced in section 4.0)
<b>FENESTRATION</b>	
ANSI / AAMA 711	Voluntary specification for self-adhering flashing used for installation of exterior wall fenestration products
AAMA 501.2	Quality assurance and diagnostic water leakage field check of installed storefronts, curtain walls, and sloped glazing systems
AAMA 910	Voluntary "Life Cycle" Specifications and Test Methods for AW Class Architectural Windows and Doors (except cl. 3.1.13)
AAMA 920	Specification for Operating Cycle Performance of Active Side-Hinged Exterior Door Slabs
ASTM E283	Standard test method for determining rate of air leakage through exterior windows, curtain walls, and doors under specified pressure differences across the specimen
ASTM E330/E330M	Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
ASTM E331	Standard test method for water penetration of exterior windows, skylights, doors, and curtain walls by uniform static air pressure difference
ASTM E547	Standard test method for water penetration of exterior windows, skylights, doors, and curtain walls by cyclic static air pressure difference
ASTM E783	Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors



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ASTM E987	Standard Test Methods for Deglazing Force of Fenestration Products
ASTM E1105	Field Determination of water penetration of installed exterior windows, skylights, curtain walls by uniform or cyclic air pressure differences
ASTM E1186	Standard Practices for Air Leakage Site Detection in Building Envelopes and Air Barrier Systems
ASTM E1677	Standard specification for air barrier (AB) material or system for low-rise framed building walls
ASTM E1233/E1233M	Standard test method for structural performance of exterior windows, doors, skylights, and curtain walls by cyclic air pressure differential
ASTM E2068	Standard Test Method for determining the Operational Force of Sliding Windows and Doors
ASTM E2178	Standard test method for air permeance of building materials
ASTM E2357	Standard test method for determining air leakage of air barrier assemblies
ASTM F588	Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact
ASTM F842	Standard Test Methods for Measuring the Forced Entry Resistance of Sliding Door Assemblies, Excluding Glazing Impact
<b>Roofing Materials/Assemblies</b>	
ASTM C1167	Standard specification for clay roof tiles
ASTM C1568	Standard test method for wind resistance of concrete and clay roof tiles (mechanical uplift resistance method)
ASTM D2523	Standard practice for testing load-strain properties of roofing membranes
ASTM D4869/D4969M	Standard specification for asphalt-saturated organic felt underlayment used in steep slope roofing
ASTM D5147	Standard test methods for sampling and testing modified bituminous sheet material
FM 4473	Impact Resistance Testing of Rigid Roofing materials by Impacting with Freezer Ice Balls
ICC ES AC48	Self-adhered roof underlayments for use as ice barriers (test methods referenced in sections 3.0 and 4.0)
ICC ES AC180	Clay and concrete roof tiles (uplift bend test only) (test methods referenced in section 3.4)
SBCCI SSTD 11	Test standard for determining wind resistance of concrete or clay roof tiles
TAS 102	Test procedure for static uplift resistance of mechanically attached, rigid roof systems
TAS 102A	Test procedure for static uplift resistance of mechanically attached, clipped, rigid, roof systems

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UL 1897	Standard for Safety, Uplift Tests for Roof Covering Systems
<b>Transportation</b>	
FMSVV 217	Bus emergency exits and window retention and release

*AAMA: American Architectural Manufacturers Association*

*AATCC: American Association of Textile Chemists and Colorists*

*ACI: American Concrete Institute*

*AGA: American Gas Association*

*AISI: American Iron and Steel Institute*

*API: American Petroleum Institute*

*ASSE: American Society of Safety Engineers*

*AWPA: American Wood Protection Association*

*CSGB: Canadian General Standards Board*

*FMVSS: Federal Motor Vehicle Safety Standards*

*NFPA: National Fire Protection Association*

*NSF: National Sanitation Foundation*

*SBCCI: Southern Building Code Congress International*

*TAS: Testing Application Standards*

*UBC: Uniform Building Code*

*UL: Underwriters Laboratories*

*ULC: Underwriters Laboratories*



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# CERTIFICATE OF ACCREDITATION

*This is to attest that*

## **TWINING CONSULTING INC DBA RADCO**

18071 MOUNT WASHINGTON STREET  
FOUNTAIN VALLEY, CALIFORNIA 92708, U.S.A.

### **Inspection Agency AA-650 (Type A)**

has met the requirements of AC98, *IAS Accreditation Criteria for Inspection Agencies*, and has demonstrated compliance with ISO/IEC Standard 17020:2012, *Conformity assessment - Requirements for the operation of various types of bodies performing inspection*. This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date April 30, 2021



A handwritten signature in black ink, reading "Raj Nathan".

**President**

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## TWINING CONSULTING INC DBA RADCO

[www.radcoinc.com](http://www.radcoinc.com)

**Contact Name** Rafael Franco

**Contact Phone** +1-562-272-7231 x 118

*Accredited to ISO/IEC 17020:2012*

*Effective Date April 30, 2021*

Field and Range of Inspection	Regulations, Inspection Methods, Standards and/or Specifications
CSI Division 03 - Concrete	RADCO Quality Assurance Manual for Inspection Systems, Section 4.2, Inspection Procedures
CSI Division 04 - Masonry	RADCO Quality Assurance Manual for Inspection Systems, Section 4.2, Inspection Procedures
CSI Division 05 - Metal	RADCO Quality Assurance Manual for Inspection Systems, Section 4.2, Inspection Procedures
CSI Division 06 – Wood, Plastics and Composites	RADCO Quality Assurance Manual for Inspection Systems, Section 4.2, Inspection Procedures
CSI Division 07 – Thermal and Moisture Protection	RADCO Quality Assurance Manual for Inspection Systems, Section 4.2, Inspection Procedures
CSI Division 08 – Doors, Windows & Interiors (Excluding 08700 & 08800)	RADCO Quality Assurance Manual for Inspection Systems, Section 4.2, Inspection Procedures
CSI Division 09 – Finishes (Excluding 095113, 095300, 095400, 098000, and 098400)	RADCO Quality Assurance Manual for Inspection Systems, Section 4.2, Inspection Procedures
CSI Division 22 – Plumbing	RADCO Quality Assurance Manual for Inspection Systems, Section 4.2, Inspection Procedures
CSI Division 23 – Heating, Ventilating, and Air Conditioning	RADCO Quality Assurance Manual for Inspection Systems, Section 4.2, Inspection Procedures
CSI Division 23 – Gas Appliances	RADCO Quality Assurance Manual for Inspection Systems, Section 4.2, Inspection Procedures
Structural and Non-structural, Mechanical, Electrical and Plumbing of Prefabricated Construction	RADCO Quality Assurance Manual for Inspection Systems, Section 4.2, Inspection Procedures
Mobility Equipment and Dealers	NMEDA QAP Rules, QAP-101 NMEDA Guidelines, QAP-103
Manufacturing in Fields Specified Above	ICC-ES Acceptance Criteria AC304