



CERTIFICATE OF ACCREDITATION

This is to attest that

TWINING, INC.
3310 AIRPORT WAY
LONG BEACH, CALIFORNIA 90806, U.S.A.

Testing Laboratory TL-196

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 February 9, 2024



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

President

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

TWINING, INC.

Contact Name Corey Rhodes

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Accredited to ISO/IEC 17025:2017

Effective Date February 9, 2024

CMT	
AASHTO T 336	Standard method of test for coefficient of thermal expansion of hydraulic cement concrete
ASTM C29/C29M	Standard test method for bulk density ("unit weight") and voids in aggregate
ASTM C31	Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C39	Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C40	Standard Test Method for Organic Impurities in Fine Aggregates for Concrete
ASTM C42/C42M	Standard test method for obtaining and testing drilled cores and sawed beams of concrete
ASTM C70	Standard test method for surface moisture in fine aggregate
ASTM C78/C78M	Standard test method for flexural strength of concrete (using simple beam with third-point loading)
ASTM C88	Standard test method for soundness of aggregates by use of sodium sulfate or magnesium sulfate
ASTM C109	Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens)
ASTM C117	Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C127	Standard Test Method for Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
ASTM C128	Standard test method for relative density (specific gravity) and absorption of fine aggregate
ASTM C131/C131M	Standard test method for resistance to degradation of small-size coarse aggregate by abrasion and impact in the Los Angeles machine
ASTM C136	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C138	Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete

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ASTM C140	Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
ASTM C142/C142M	Standard test method for clay lumps and friable particles in aggregates
ASTM C143	Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C151/C151M	Standard test method for autoclave expansion of hydraulic cement
ASTM C157/C157M	Standard test method for length change of hardened hydraulic-cement mortar and concrete
ASTM C172	Standard Practice for Sampling Freshly Mixed Concrete
ASTM C173/C173M	Standard test method for air content of freshly mixed concrete by the volumetric method
ASTM C174/C174M	Standard test method for measuring thickness of concrete elements using drilled concrete cores
ASTM C183/C183M	Standard practice for sampling and the amount of testing of hydraulic cement
ASTM C185	Standard test method for air content of hydraulic cement mortar
ASTM C187	Standard test method for amount of water required for normal consistency of hydraulic cement paste
ASTM C191	Standard test methods for time of setting of hydraulic cement by Vicat needle
ASTM C192/C192M	Standard practice for making and curing concrete test specimens in the laboratory
ASTM C204	Standard test methods for fineness of hydraulic cement by air-permeability apparatus
ASTM C231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C266	Standard test method for time of setting of hydraulic-cement paste by Gillmore needles
ASTM C305	Standard practice for mechanical mixing of hydraulic cement pastes and mortars of plastic consistency
ASTM C403/C403M	Standard test method for time of setting of concrete mixtures by penetration resistance
ASTM C426	Standard test method for linear drying shrinkage of concrete masonry units
ASTM C451	Standard test method for early stiffening of hydraulic cement (paste method)
ASTM C469/C469M	Standard test method for static modulus of elasticity and Poisson's ratio of concrete in compression
ASTM C495/C495M	Standard test method for compressive strength of lightweight insulating concrete

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ASTM C496	Standard test method for splitting tensile strength of cylindrical concrete specimens
ASTM C511	Standard specification for mixing rooms, moist cabinets, moist rooms, and water storage tanks used in the testing of hydraulic cements and concretes
ASTM C535	Standard test method for resistance to degradation of large-size coarse aggregate by abrasion and impact in the Los Angeles machine
ASTM C566	Standard test method for total evaporable moisture content of aggregate by drying
ASTM C567/C567M	Standard test method for determining density of structural lightweight concrete
ASTM C617/C617M	Standard practice for capping cylindrical concrete specimens
ASTM C618	Standard specification for coal fly ash and raw or calcined natural pozzolan for use in concrete
ASTM C702/C702M	Standard practice for reducing samples of aggregate to testing size
ASTM C805/C805M	Standard test method for rebound number of hardened concrete
ASTM C827	Standard test method for change in height at early ages of cylindrical specimens of cementitious mixtures
ASTM C940	Standard Test Method for Expansion and Bleeding of Freshly Mixed Grouts for Replaced-Aggregate Concrete in the Laboratory
ASTM C989/C989M	Standard specification for slag cement for use in concrete and mortars
ASTM C1012/C1012M	Standard test method for length change of hydraulic- cement mortars exposed to a sulfate solution
ASTM C1019	Standard test method for sampling and testing grout
ASTM C1064	Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
ASTM C1077	Standard practice for agencies testing concrete and concrete aggregates for use in construction and criteria for testing agency evaluation
ASTM C1093	Standard Practice for Accreditation of Testing Agencies for Masonry
ASTM C1202	Standard test method for electrical indication of concrete's ability to resist chloride ion penetration
ASTM C1231/C1231M	Standard practice for use of un-bonded caps in determination of compressive strength of hardened cylindrical concrete specimens
ASTM C1252	Standard test methods for un- compacted void content of fine aggregate (as influenced by particle shape, surface texture, and grading)

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ASTM C1260	Standard test method for potential alkali reactivity of aggregates (mortar-bar method)
ASTM C1293	Standard test method for determination of length change of concrete due to alkali-silica reaction
ASTM C1314	Standard test method for compressive strength of masonry prisms
ASTM C1437	Standard test method for flow of hydraulic cement mortar
ASTM C1506	Standard test method for water retention of hydraulic cement-based mortars and plasters
ASTM C1552	Standard practice for capping concrete masonry units, related units and masonry prisms for compression testing
ASTM C1567	Standard test method for determining the potential alkali-silica reactivity of combinations of cementitious materials and aggregate (accelerated mortar-bar method)
ASTM C1581/C1581M	Standard test method for determining age at cracking and induced tensile stress characteristics of mortar and concrete under restrained shrinkage
ASTM C1609/C1609M	Standard test method for flexural performance of fiber-reinforced concrete (using beam with third-point loading)
ASTM C1892	Standard Test Methods for Strength of Anchors in Masonry
ASTM D430	Standard test methods for rubber deterioration- dynamic fatigue
ASTM D558	Standard test methods for moisture-density (unit weight) relations of soil-cement mixtures
ASTM D559	Standard test methods for wetting and drying compacted soil-cement mixtures
ASTM D698	Standard test methods for laboratory compaction characteristics of soil using standard effort (12,400 ft-lb/ ft ³ (600 kN-m/m ³))
ASTM D854	Standard test methods for specific gravity of soil solids by water pycnometer
ASTM D1140	Standard test methods for determining the amount of material finer than 75- μ m (no. 200) sieve in soils by washing
ASTM D1556	Standard test method for density and in place by the sand-cone method
ASTM D1557	Standard test methods for laboratory compaction characteristics of soil using modified effort (56,000 ft-lbf/ ft ³ (2,700 kN-m/m ³))
ASTM D1560	Standard test methods for resistance to deformation and cohesion of asphalt mixtures by means of Hveem apparatus
ASTM D1633	Standard test methods for compressive strength of molded soil- cement cylinders

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ASTM D2041	Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D2166/D2166M	Standard test method for unconfined compressive strength of cohesive soil
ASTM D2172/D2172M	Standard test methods for quantitative extraction of bitumen from bituminous paving mixtures
ASTM D2216	Standard test methods for laboratory determination of water (moisture) content of soil and rock by mass
ASTM D2419	Standard test method for sand equivalent value of soils and fine aggregate
ASTM D2435/D2435M	Standard test methods for one-dimensional consolidation properties of soils using incremental loading
ASTM D2487	Standard practice for classification of soils for engineering purposes (unified soil classification system)
ASTM D2488	Standard practice for description and identification of soils (visual-manual procedure)
ASTM D2726/D2726M	Standard test method for bulk specific gravity and density of non-absorptive compacted bituminous mixtures
ASTM D2844/D2844	Standard test method for resistance R-value and expansion pressure of compacted soils
ASTM D2950/D2950M	Standard test method for density of bituminous concrete in place by nuclear methods
ASTM D3039/D3039M	Standard test method for tensile properties of polymer matrix composite materials
ASTM D3080/D3080M	Standard test method for direct shear test of soils under consolidated drained conditions
ASTM D3203/D3203M	Standard test method for percent air voids in compacted dense and open bituminous paving mixtures
ASTM D3665	Standard practice for random sampling of construction materials
ASTM D3666	Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
ASTM D3740	Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM D3744/D3744M	Standard test method for aggregate durability index
ASTM D3910	Standard Practices for Design, Testing, and Construction of Slurry Seal
ASTM D3967	Standard test method for splitting tensile strength of intact rock core specimens

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ASTM D4318	Standard test methods for liquid limit, plastic limit, and plasticity index of soils
ASTM D4546	Standard test methods for one-dimensional swell or collapse of soils
ASTM D4718/D4718M	Standard practice for correction of unit weight and water content for soils containing oversize particles
ASTM D4791	Standard test method for flat particles, elongated particles, or flat and elongated particles in coarse aggregate
ASTM D4829	Standard test method for expansion index of soils
ASTM D4867/D4867M	Standard test method for effect of moisture on asphalt concrete paving mixtures
ASTM D5444	Standard test method for mechanical size analysis of extracted aggregate
ASTM D5821	Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate
ASTM D6307	Standard test method for asphalt content of hot-mix asphalt by ignition method
ASTM D6926	Standard practice for preparation of bituminous specimens using Marshall apparatus
ASTM D6927	Standard test method for Marshall stability and flow of asphalt mixtures
ASTM D6938	Standard test methods for in-place density and water content of soil and soil-aggregate by nuclear methods (shallow depth)
ASTM D7928	Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis
ASTM E18	Standard test methods for Rockwell hardness of metallic materials
ASTM E23	Standard test methods for notched bar impact testing of metallic materials
ASTM E190	Standard test method for guided bend test for ductility of welds
ASTM E290	Standard test methods for bend testing of material for ductility
ASTM E329	Test methods referenced under bituminous inspection and testing (limited to ASTM standards D2041 and D3666), concrete inspection and testing (limited to ASTM standards C31/C31M, C39/C39M, C40, C117, C127, C128, C136, C138/C138M, C143/143M, C172, C173/C173M, C231 and C1064), under masonry inspection and testing (limited to ASTM standards C109, C140 and C1093), under soils and rock inspection (limited to ASTM standard D3740), and under steel inspection and testing
ASTM F606/F606M	Standard test methods for determining the mechanical properties of externally and internally threaded fasteners, washers, direct tension indicators, and rivets
CT 670	Methods for mechanical and welded reinforcing steel splices (Excluding supplemental cyclic testing)

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ICC ES AC408	Structural Concrete with Lightweight Synthetic Particles (Test methods referenced in section 4.0 (excluding: sections 4.8 through 4.11))
Physical	
ASTM E329	Test methods referenced under sprayed fire resistive inspection and testing
ASTM E605/E605M	Standard test methods for thickness and density of sprayed fire-resistive material (SFRM) applied to structural members
ASTM E736	Standard test method for cohesion/adhesion of sprayed fire-resistive materials applied to structural members
Structural	
ASTM A370	Standard test methods and definitions for mechanical testing of steel products
ASTM A970/A970M	Standard specification for headed steel bars for concrete reinforcement
ASTM A1034/A1034M	Standard test methods for testing mechanical splices for steel reinforcing bars (Exclude Sections 10.5 and 10.6)
ASTM C482	Standard test method for bond strength of ceramic tile to Portland cement paste
ASTM C1892/C1892M	Standard Test Methods for Strength of Anchors in Masonry (Excluding sections 11 & 12)
ASTM D1761	Standard test methods for mechanical fasteners in wood
ASTM D4761	Standard test methods for mechanical properties of lumber and wood-base structural material
ASTM E8/E8M	Standard test methods for tension testing of metallic materials
ASTM E488	(Only Tension and shear test for un-cracked concrete) Standard test methods for strength of anchors in concrete elements
ASTM E935	Standard test methods for performance of permanent metal railing systems and rails for buildings
ASTM E1190	Standard test methods for strength of power-actuated fasteners installed in structural members
ASTM E1512	Standard test methods for testing bond performance of bonded anchors (tensile and sheer only)
ASTM E2353	Standard test methods for performance of glass in permanent glass railing systems, guards, and balustrades (Excluding Sections 12.3 and 13.4)
ICC ES AC01	Mechanical Anchors in Cracked and Uncracked Masonry Elements (Test methods referenced in section 4.0)
ICC ES AC58	Adhesive Anchors in Cracked and Uncracked Masonry Elements (Test methods referenced in section 5.0)

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ICC ES AC60	Anchors in Unreinforced Masonry Elements (Test methods referenced in section 4.0 (excluding: section 4.4))
ICC ES AC70	Power-actuated Fasteners Driven into Concrete, Steel and Masonry Elements (Test methods referenced in section 4.0)
ICC ES AC106	Predrilled Fasteners (Screw Anchors) in Masonry (Test methods referenced in section 4.5)
ICC ES AC439	Glass Railing and Balustrade System (Test methods referenced in 4.0)

CT- Cal Trans- California Department of Transportation

UBC- The Uniform Building Code