



OFFICE OF THE CITY ATTORNEY  
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Long Beach, CA 90802-4664


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“2. TERM. The term of this Agreement shall commence at midnight on August 10, 2020, and shall terminate at 11:59 p.m. on August 9, 2023, unless sooner terminated as provided in this Agreement, or unless the services or the Project is completed sooner. The term may be extended for two (2) additional one-year periods, at the discretion of the City Manager.”

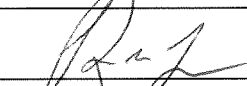
3. Except as expressly modified herein, all of the terms and conditions contained in Agreement No. 35616 are ratified and confirmed and shall remain in full force and effect.

IN WITNESS WHEREOF, the Parties have caused this document to be duly executed with all formalities required by law as of the date first stated above.

August 4, 2022

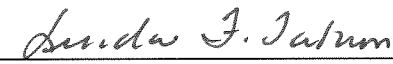
TWINING, INC., a California corporation  
By   
Name Linas Vitkus  
Title President and COO

August 4, 2022

By   
Name Robert M. Ryan  
Title Chief Executive Officer

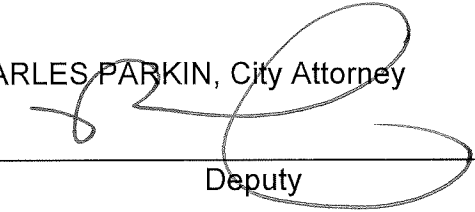
“Consultant”

August 25, 2022

CITY OF LONG BEACH, a municipal corporation  
By   
City Manager

“City” EXECUTED PURSUANT TO SECTION 301 OF THE CITY CHARTER

This Second Amendment to Agreement No. 35616 is approved as to form on August 23, 2022.

CHARLES PARKIN, City Attorney  
By   
Deputy

## EXHIBIT "B"

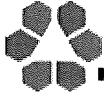
Rate Schedule for the City of Long Beach As-Needed Projects at Long Beach Airport

Effective Dates Rates Are Effective through 2023

Consultant: Overhead rate 125.35%

Employee Classification	Direct Labor Rate	Overhead Rate	Profit	Total Loaded Rate	OT	DT
Principal Engineer	\$ 90.32	34.77%	10.00%	\$133.90	NA	NA
Project Manager	\$ 47.27	125.35%	43.27%	\$152.62	NA	NA
Technical Advisor	\$ 69.71	125.35%	10.27%	\$173.23	NA	NA
Lead Inspector Group 1*	\$ 52.56	119.32%	10.00%	\$126.80	\$153.08	\$179.36
Inspector Group 1*	\$ 50.50	119.32%	10.00%	\$121.83	\$147.08	\$172.33
Lead Inspector Group 2*	\$ 54.39	119.32%	10.00%	\$131.22	\$158.41	\$185.61
Inspector Group 2*	\$ 52.33	119.32%	10.00%	\$126.25	\$152.41	\$178.58
Lead Inspector Group 3*	\$ 56.45	119.32%	10.00%	\$136.19	\$164.41	\$192.64
Inspector Group 3*	\$ 54.39	119.32%	10.00%	\$131.22	\$158.41	\$185.61
Project Administrator	\$ 32.48	109.92%	10.00%	\$75.00	NA	NA
QA Inspector (Group 1 Rate)*	\$ 50.50	119.32%	10.00%	\$121.83	\$147.08	\$172.33
Lab Technician	\$ 29.00	119.32%	10.00%	\$69.96	\$84.46	\$98.96

\*Indicates rates which are subject to Prevailing Wage.



# TWINING

## Schedule of Fees 2022 - 2023

Personnel Rates: Per Hour Unless Otherwise Noted

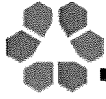
Task Code	Engineering and Consulting Personnel	Rate
10001	Principal Engineer/Geologist	\$ 133.90
70000	Registered Geotechnical Engineer	\$ 133.90
10010	Technical Advisor	\$ 173.23
10013	Project Engineer/Manager	\$ 162.62
10007	Staff Engineer/Geologist	\$ 133.90
98000	Lab Technician	\$ 69.96
10015	Project Administrator	\$ 75.00

Task Code	Field Inspection Personnel	Rate
10101	Concrete/Reinforced Steel Inspector	\$ 126.25
10103	Prestressed/Post Tensioned Inspector	\$ 126.25
10105	Concrete ICC Inspector	\$ 126.25
10109	Drilled-In-Anchor Inspector	\$ 126.25
10111	Guniting/Shotcrete Inspector	\$ 126.25
10113	Masonry Inspector	\$ 126.25
10201	Structural Steel/Welding Inspector	\$ 126.25
10203	AWS Certified Welding Inspector	\$ 126.25
10207	Fireproofing Inspector	\$ 126.25
10501	Lead Inspector	\$ 126.80
10115	Firestop Special Inspector - IFC Premier	\$ 142.00
10117	Firestop Special Inspector - IQP	\$ 187.00
70109	L.A. Deputy Grading Inspector	\$ 130.00
75001	Asphalt Field and Plant Inspector/Technician	\$ 121.83
70103	Pile Driving Inspector	\$ 121.83
70101	Soils Technician	\$ 121.83
10107	Concrete Quality Control (ACI/Caltrans Technician)	\$ 121.83

Task Code	Shop Inspection Personnel	Rate
10301	Structural Steel Fabrication Inspector	\$ 131.22
10309	Batch Plant Quality Control Technician/Inspector	\$ 126.25
10325	Glue-Laminated Fabrication Inspector	Quotation
10328	Pre-Cast Concrete/Pipe Fabrication Inspector	\$ 126.25

Task Code	Nondestructive Testing Personnel	Rate
10401	NDE Ultrasonic Testing Technician	\$ 130.00
10403	NDE Magnetic Particle Testing Technician	\$ 130.00
10405	NDE Dye Penetrant Testing Technician	\$ 130.00
10305	Combination NDE Technician/Welding Inspector	\$ 130.00
10409	Radiographic Testing (crew of 2)	\$ 350.00
10020	NDE Engineer	\$ 200.00

Task Code	Concrete Tests (Field Made Specimens)	Rate
20201	6" x 12" Cylinder: Compression Strength (ASTM C39)	\$ 40.00
20202	4" x 8" Cylinder: Compression Strength (ASTM C39)	\$ 35.00
20203	Density of Structural Lightweight Concrete Equilibrium or Oven Dry Method (ASTM C567)	\$ 85.00
20205	Core Compression including Trimming (ASTM C42)	\$ 75.00
20207	6" x 6" x 18" Flexural Beams Not Exceeding Referenced Size (ASTM C78, C293 or CTM 523)	\$ 100.00
20209	Splitting Tensile Strength (ASTM C496)	\$ 95.00
20211	Modulus of Elasticity Test (ASTM C469)	\$ 275.00
80003	Rapid Chloride Permeability Test: Cylinders or Cores (ASTM C1202)	\$ 520.00
80006	Density, Absorption, and Voids in Hardened Concrete (ASTM C642)	\$ 520.00



# TWINING

Task Code	Concrete Tests (Field Made Specimens), Continued	Rate
40005	Flexural Toughness (ASTM C1609, Formerly ASTM C1018)	\$ 800.00
40007	Flexural Toughness (ASTM C1550)	\$ 500.00
40006	Double Punch Strength of Fiber Reinforced Concrete	\$ 500.00
40009	Coefficient of Thermal Expansion of Concrete (CRD 39, AASHTO T336)	\$ 600.00
40012	Bulk Electrical Resistivity (ASTM C1876)	\$ 120.00

Task Code	Concrete Specimen Preparation	Rate
20151	Sawing of Specimens (Each)	\$ 40.00
20157	Coring of Specimens in Lab (Each)	\$ 40.00
20159	Grinding of Concrete Below 6000 psi Strength (Each)	\$ 60.00
20160	Grinding of Concrete 6000 psi Strength and Above (Each)	\$ 90.00

Task Code	Laboratory Trial Batch: Concrete, Cement and Mortar	Rate
30216	Compression Test 4"x8" Cylinders Made and Tested in Laboratory (ASTM C192, C35)	\$ 50.00
30217	Compression Test 6"x12" Cylinders Made and Tested in Laboratory (ASTM C192, C35)	\$ 60.00
30219	6" x 6" x 18" Flexural Beams Made and Tested in Laboratory (ASTM C192, C78)	\$ 100.00
30223	Splitting Tensile Strength Cylinders Made and Tested in Laboratory (ASTM C192, C496)	\$ 115.00
30225	Modulus of Elasticity Test Cylinders Made and Tested in Laboratory (ASTM C192, C469)	\$ 285.00
30227	Density of Structural Lightweight Concrete Made in the Laboratory, Equilibrium or Oven Dry Method (ASTM C567)	\$ 105.00
30237	Bulk Electrical Resistivity (ASTM C1876)	\$ 140.00
30201	Laboratory Trial Batch (ASTM C192)	\$ 525.00
30203	Laboratory Trial Batch: Packaged Dry Concrete Including Verification of Slump, Air Content, Plastic Unit Weight, Six Cylinders for Compressive Strength (ASTM C387 and C192)	\$ 950.00
30205	Drying Shrinkage Up to 28 Days: Three 3" x 3" or 4" x 4" Bars, Five Readings up to 28 Dry Days (ASTM C157)	\$ 500.00
30230	Additional Reading, Per Set of Three Bars	\$ 45.00
30231	Storage over Ninety (90) Days, Per Set of Three Bars, Per Month	\$ 30.00
30207	Setting Time Up to 7 Hours (ASTM C403)	\$ 180.00
30209	Bleeding (ASTM C232)	\$ 150.00
30229	Concrete Restrained Expansion (ASTM C878)	\$ 600.00
30211	Mix, Make and Test Mortar or Grout Specimens for Compressive Strength: Set of 8 (ASTM C878)	\$ 550.00
20263	Non-Shrink Grout: Height Change after Final Set (ASTM C1090)	\$ 550.00
20265	Non-Shrink Grout: Height Change at Early Age (ASTM C827)	\$ 800.00
30232	Cracking Resistance, Set of Three Rings, Laboratory Trial Batching, Test Until Cracking or up to 28 Days (ASTM 1581)	\$ 5,500.00
30233	Evaluation of Pre-Packaged Masonry Mortars (ASTM C270)	\$ 1,150.00
30234	Creep (ASTM C512) (One Age of Loading, 12 Months Duration of Testing)	\$ 8,000.00

Task Code	Chemical Analysis and Petrographic Examination of Concrete	Rate
80123	Chemical Analysis for Acid Soluble Chlorides (ASTM C1152) (includes sample prep)	\$ 145.00
80126	Chemical Analysis for Water Soluble Chlorides (ASTM C1218) (includes sample prep)	\$ 170.00
80193	Chloride Diffusion Coefficient of Cementitious Mixtures by Bulk Diffusion (ASTM C1556)	\$ 2,600.00
80129	Petrographic Examination of Hardened Concrete, Level II (ASTM 856) (Comprehensive)	
	Each, One Sample	\$ 2,400.00
	Each, Two or More Samples	\$ 2,100.00

Task Code	Physical and Chemical Analysis of Cement	Rate
80195	Physical Testing and Chemical Analysis of Portland Cement per Standard Requirements (ASTM C150)	\$ 1,300.00
80100	Chemical Analysis of Portland Cement per Standard Requirements (ASTM C150)	\$ 675.00
80103	Physical Testing of Portland Cement per Standard Requirements (ASTM C150)	\$ 675.00

Task Code	Physical and Chemical Analysis of Cement, Continued	Rate
80194	Physical Testing of Type K Cement, Mortar Expansion (ASTM C806)	\$ 675.00
80106	Partial Analysis or Specific Physical Tests	Quotation
80110	Sulfates Resistance of Hydraulic Cement (ASTM C1012), 6 months	\$ 2,700.00
80111	Sulfates Resistance of Hydraulic Cement (ASTM C1012), 12 months	\$ 3,000.00

Task Code	Physical and Chemical Analysis of Fly Ash	Rate
80140	Chemical Analysis of Fly Ash per Standard Requirements (ASTM C618)	\$ 675.00
80143	Physical Testing of Fly Ash per Standard Requirements (ASTM C618)	\$ 675.00
80146	Partial Analysis or Specific Physical Tests	Quotation
80147	Chemical Analysis and Physical Testing of Fly Ash per Standard Requirements (ASTM C1618)	\$ 1,300.00

Task Code	Physical Testing of Chemical Admixtures for Concrete	Rate
80196	Qualification of Admixture per ASTM C494	Quotation

Task Code	Soils and Aggregate Tests	Rate
30503	Abrasion: LA Rattler (ASTM C131)	\$ 200.00
30505	Abrasion: LA Rattler (ASTM C535)	\$ 210.00
70301	Atterberg Limits/Plasticity Index (ASTM D4318, CTM 204)	\$ 160.00
70303	California Bearing Ratio Excluding Maximum Density (ASTM D1883): Soil	\$ 550.00
70304	California Bearing Ratio Excluding Maximum Density (ASTM D1883): Cement-Treated Soil	\$ 650.00
70344	Cement-Treated Soil/Base Mix Design: includes three trial cement contents with three unconfined compressive strength specimens per cement content	\$ 3,500.00
70305	Chloride and Sulfate Content (CTM 417, CTM 422)	\$ 175.00
30403	Clay Lumps and Friable Particles (ASTM C142)	\$ 200.00
30321	Cleaness Value: 1" x #4 (CTM 227)	\$ 175.00
30322	Cleaness Value: 1.5" x .75" (CTM 227)	\$ 275.00
70393	Collapse Potential/Index (ASTM D5333)	\$ 225.00
70396	Compressive Strength of Molded Soil-Cement Cylinders (ASTM D1633)	\$ 105.00
70309	Consolidation Test: Full Cycle (ASTM 2435, CTM 219)	\$ 195.00
70311	Consolidation Test: Time Rate per Load Increment (ASTM D2435, CTM 219)	\$ 45.00
70313	Corrosivity Series: Sulfate, Cl, pH, Resistivity (CTM 643, 417, and 422)	\$ 245.00
70315	Crushed/Fractured Particles (ASTM D5821, CTM 205)	\$ 175.00
70317	Direct Shear Test: Remolded and/or Residual (ASTM D3080)	\$ 245.00
70319	Direct Shear Test: Undisturbed - Slow [CD] (ASTM D3080)	\$ 225.00
70321	Direct Shear Test: Undisturbed - Fast [CU] (ASTM D3080)	\$ 195.00
70378	Durability Index: Per Method - A,B,C, or D (ASTM D3744, CTM 229)	\$ 210.00
70325	Expansion Index (ASTM D4829, UBC 18-2)	\$ 170.00
75004	Fine Aggregate Angularity (ASTM C1252, CTM 234, AASHTO T304)	\$ 190.00
30507	Flat and Elongated Particle (ASTM D4791)	\$ 240.00
30508	Flat or Elongated Particle (ASTM D4791)	\$ 210.00
70331	Maximum Density: Methods A/B/C (ASTM D1557, D698, CTM 216)	\$ 190.00
70333	Maximum Density: Check Point (ASTM D1557, D698)	\$ 65.00
70335	Maximum Density: AASHTO C [Modified] (AASHTO T-180)	\$ 195.00
70336	Maximum Index Density: Vibratory Table (ASTM D4253)	\$ 345.00
70337	Moisture Content (ASTM D2216, CTM 226)	\$ 25.00
70339	Moisture and Density: Ring Sample (ASTM D2937)	\$ 30.00
70341	Moisture and Density: Shelby Tube Sample (ASTM D2937)	\$ 40.00
70340	Moisture-Density Relations of Soil-Cement Mixtures Premixed in the Field (ASTM D558)	\$ 275.00
70342	Moisture-Density Relations of Soil-Cement Mixtures Mixed in the Lab (ASTM D558)	\$ 350.00
30401	Organic Impurities (ASTM C40, CTM 213)	\$ 90.00
70343	Permeability (ASTM D5084)	Quotation
80001	Potential Reactivity: Chemical Method (ASTM C289 - Discontinued Method)	\$ 625.00
70394	Potential Reactivity: Mortar Bar Expansion Method, 14-Day Exposure (ASTM C1260)	\$ 850.00



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Task Code	Soils and Aggregate Tests, Continued	Rate
70391	Potential Reactivity: Mortar Bar Expansion Method, 28-Day Exposure (ASTM C1260)	\$ 900.00
70398	Potential Reactivity: Concrete Bar Expansion Method (ASTM C1293), 12 month	\$ 2,700.00
70399	Potential Reactivity: Concrete Bar Expansion Method (ASTM C1293), 24 month	\$ 2,900.00
70397	Potential Reactivity of Aggregate Combination, non-standard method; 14-Day Exposure, Mortar (after ASTM C1567)	\$ 1,000.00
70392	Potential Reactivity of Aggregate Combination, non-standard method; 28-Day Exposure, Mortar (after ASTM C1567)	\$ 1,050.00
70345	R-Value: Soil (ASTM D2844, CTM 301)	\$ 440.00
70347	R-Value: Aggregate Base (ASTM D2844, CTM 301)	\$ 490.00
70349	Sand Equivalent (ASTM D2419, CTM 217)	\$ 125.00
70351	Sieve #200 Wash Only (ASTM D1140, CTM 202)	\$ 90.00
70353	Sieve with Hydrometer: 3/4" Gravel to Clay (ASTM D422, D7928, CTM 203)	\$ 250.00
70355	Sieve with Hydrometer: Sand to Clay (ASTM D422, D7928, CTM 203)	\$ 240.00
70357	Sieve Analysis Including Wash (ASTM C136, CTM 202)	\$ 150.00
70359	Sieve Analysis Without Wash (ASTM C136, CTM 202)	\$ 120.00
70360	Sieve Analysis: Split Sieve (ASTM C136, CTM 202)	\$ 240.00
70361	Sieve Analysis Without Wash: With Cobbles (ASTM C136, CTM 202)	\$ 235.00
70363	Soundness: Sodium or Magnesium Sulfate, 5 Cycles (ASTM C88)	\$ 450.00
70365	Specific Gravity and Absorption: Coarse (ASTM C127, CTM 206)	\$ 100.00
70367	Specific Gravity and Absorption: Fine (ASTM C128, CTM 207)	\$ 165.00
70369	Swell/Settlement Potential: One Dimensional (ASTM D4546)	\$ 150.00
70371	Triaxial	Quotation
70373	Unconfined Compression (ASTM D2166, CTM 221)	\$ 190.00
30317	Unit Weight Per Cubic Foot (ASTM C29, CTM 212)	\$ 125.00
30319	Voids in Aggregate with Known Specific Gravity (ASTM C29, CTM 212)	\$ 125.00
30411	Lightweight Particles: Coarse, with Two Solutions (ASTM C123)	\$ 410.00
30412	Lightweight Particles: Fine, with One Solution (ASTM C123)	\$ 205.00

Task Code	Asphalt Concrete Tests	Rate
75031	HMA Mixing and Preparation	\$ 125.00
75032	HMA Mixing and Preparation with Aggregate Treatment	\$ 175.00
75033	Bulk Specific Gravity of Compacted Sample or Core: SSD (ASTM D2726, CTM 308C)	\$ 55.00
75036	Bulk Specific Gravity of Compacted Sample or Core: Paraffin Coated (ASTM D1188 and CTM 308A)	\$ 80.00
75040	Emulsion Residue, Evaporation (ASTM D244)	\$ 160.00
75024	Extraction: % Bitumen (ASTM D6307, CTM 382)	\$ 160.00
75027	Extraction: % Bitumen and Gradation (ASTM D5444, D6307, CTM 202, 382)	\$ 215.00
75028	Extraction: % Bitumen, Correction Factor (ASTM D6307, CTM 382)	\$ 350.00
75030	Chemical Extraction: % Bitumen and Sieve Analysis (ASTM D2172 Method A or B, ASTM D5444)	\$ 245.00
75042	Lab Tested Maximum Density: Hveem, 3 briquettes (ASTM D1561, D1188, CTM 304, 308)	\$ 215.00
75057	Hveem Stabilometer Test, Premixed, 3 briquettes (ASTM D1560, D1561, CTM 304, 366)	\$ 215.00
75048	Lab Tested Maximum Density: Marshall, 3 briquettes (ASTM D6926, D2726)	\$ 210.00
75049	Lab Tested Maximum Density: Marshall 6" Specimen, 3 briquettes (ASTM D5581, D2726)	\$ 215.00
75050	Lab Tested Maximum Density: Superpave Gyrotory Compacted Briquette, SSD, 1 briquette (ASTM D6925, D2726)	\$ 80.00
75052	Lab Tested Maximum Density: Superpave Gyrotory Compacted Briquette, Paraffin, 1 briquette (ASTM D1188, D6925)	\$ 90.00
75051	Maximum Theoretical Specific Gravity [RICE] (ASTM D2041, CTM 309)	\$ 160.00
75066	Marshall Stability and Flow, Cored Sample, each (ASTM D6927)	\$ 80.00
75069	Marshall Stability and Flow, Premixed, 3 briquettes (ASTM D6926, D6927)	\$ 230.00
75106	Marshall Stability and Flow, Gyrotory Compacted Specimen Pre-Mixed, 3 briquettes (ASTM D5581, D6925)	\$ 230.00

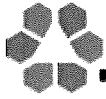
Task Code	Asphalt Concrete Tests, Continued	Rate
75107	Marshall Stability and Flow 6" Specimen, Premixed, 3 briquettes (ASTM D5581)	\$ 230.00
75063	Moisture Content (CTM 370)	\$ 85.00
75005	Wet Track Abrasion Test (ASTM D3910)	\$ 165.00
75093	Hveem Mix Design (Excluding Aggregate Quality Tests)	\$ 5,200.00
75096	Hveem Mix Design, with RAP (Excluding Aggregate Quality Tests, RAP Qualification)	\$ 5,645.00
75099	Hveem Mix Design, with Lime (Excluding Aggregate Quality Tests)	\$ 6,000.00
75094	Hveem Mix Design Caltrans Untreated Mix (Including Aggregate Quality Tests)	\$ 6,200.00
75095	Hveem Mix Design Caltrans Lime Treated Mix (Including Aggregate Quality Tests)	\$ 7,200.00
75084	Marshall Mix Design (Excluding Aggregate Quality Tests)	\$ 5,200.00
75087	Marshall Mix Design with RAP (Excluding Aggregate Quality Tests)	\$ 5,645.00
75090	Marshall Mix Design with Lime (Excluding Aggregate Quality Tests)	\$ 6,200.00
75083	Open Grade Asphalt Concrete Mix Design (ASTM D7064, CTM 368)	\$ 3,000.00
75109	Superpave Mix Design (Excluding Aggregate Quality Tests)	\$ 10,600.00
75113	Superpave Mix Design, with RAP (Excluding Aggregate Quality Tests)	\$ 11,200.00
75114	Superpave Mix Design, with Rubber (Excluding Aggregate Quality Tests)	\$ 11,200.00
75115	Superpave Mix Design, with Additives (Excluding Aggregate Quality Tests)	\$ 11,500.00
75075	Effect of Moisture on Asphalt Paving Mixtures, Pre-Mixed (ASTM D4867, AASHTO T283)	\$ 1,000.00
75111	Hamburg Wheel Track Test, 20,000 passes, 4 briquettes (AASHTO T324)	\$ 1,100.00
75039	Raveling Test of Cold Mixed Emulsified Asphalt (ASTM D7196)	\$ 200.00
75067	Marshall Stability, wet set, 3 replicates (AASHTO T245)	\$ 350.00
75068	Marshall Stability, dry set, 3 replicates (AASHTO T245)	\$ 300.00
75070	Cold Recycled Asphalt Mix Design: 2 gradings each, 3 emulsion content (Caltrans LP-8)	\$ 10,500.00

Task Code	Brick Masonry Tests, ASTM C67	Rate
20301	Modulus of Rupture: Flexural	\$ 95.00
20303	Compression Strength	\$ 60.00
20305	Absorption: 5 Hour or 24 Hour	\$ 65.00
20307	Absorption (Boil): 1, 2 or 5 Hours	\$ 95.00
20309	Initial Rate of Absorption	\$ 55.00
20311	Efflorescence	\$ 75.00
20313	Cores: Compression	\$ 70.00
20315	Shear Test on Brick Cores: 2 Faces	\$ 95.00

Task Code	Concrete Block, ASTM C140	Rate
20321	Compression	\$ 90.00
20323	Absorption/Moisture Content/Oven Dry Density	\$ 90.00
20327	Linear Shrinkage (ASTM C426)	\$ 250.00
20335	Web and Face Shell Measurements	\$ 50.00
20329	Tension Test	\$ 160.00
20331	Core Compression	\$ 70.00
20333	Shear Test of Masonry Cores: 2 Faces	\$ 95.00
20339	Efflorescence Tests	\$ 75.00

Task Code	Masonry Prisms, ASTM C1314	Rate
20341	Compression Test: Composite Masonry Prisms Up To 8" x 16"	\$ 190.00
20343	Compression Test: Composite Masonry Prisms Larger Than 8" x 16"	\$ 250.00
20346	Prism Cord Modulus of Elasticity	\$ 540.00
20347	Prism Cord Modulus of Elasticity with Transverse Strain (for double-wythe specimen)	\$ 665.00

Task Code	Mortar and Grout	Rate
20351	Compression: 2" x 4" Mortar Cylinders (ASTM C780)	\$ 55.00
20353	Compression: 3" x 3" x 6" Grout Prisms, Includes Trimming (ASTM C1019)	\$ 40.00
20355	Compression: 2" Cubes (ASTM C109)	\$ 55.00
20357	Compression: Cores Includes Trimming (ASTM C42)	\$ 75.00



# TWINING

Task Code	Masonry Specimen Preparation	Rate
20155	Cutting of Cubes or Prisms	\$ 75.00

Task Code	Fireproofing Tests	Rate
20401	Oven Dry Density (ASTM E605)	\$ 70.00

Task Code	Gunite and Shotcrete Tests	Rate
20361	Core Compression Including Trimming (ASTM C42)	\$ 75.00
20365	Compression: Cubes (Includes Saw Cutting)	\$ 95.00

Task Code	Concrete Roof Fill: Gypsum, Vermiculite, Perlite, Lightweight Insulating Concrete, Etc.	Rate
20371	Compression Test (ASTM C495 and C472)	\$ 65.00
20373	Air Dry Density (ASTM C472)	\$ 50.00
20379	Oven Dry Density (ASTM C495)	\$ 75.00

Task Code	Reinforcing Steel, ASTM A615, A706	Rate
20501	Tensile Test: # 11 or Smaller	\$ 65.00
20503	Bend Test: # 11 or Smaller	\$ 60.00
20504	Bend Test #14 or #18	\$ 375.00
20505	Tensile Test: # 14	\$ 260.00
20507	Tensile Test: # 18	\$ 360.00

Task Code	Reinforcing Steel - Welded or Coupled Specimens	Rate
20521	Tensile Test: Welded/Coupled #11 and Smaller	\$ 75.00
20523	Tensile Test: Welded/Coupled #14	\$ 270.00
20525	Tensile Test: Welded/Coupled #18	\$ 395.00
20529	Weld: Macroetch	\$ 90.00
20531	Slippage Test - Caltrans (CTM 670)	\$ 200.00
20532	Tensile Test: Welded Hoops #11 and Smaller	\$ 150.00

Task Code	Metal and Steel Testing	Rate
20601	Tensile Strength: Up to 100K Pounds (Each)	\$ 70.00
20603	Tensile Strength: Up to 200K Pounds (Each)	\$ 80.00
20605	Tensile Strength: Up to 300K Pounds (Each)	\$ 100.00
20607	Tensile Strength: Up to 400K Pounds (Each)	\$ 150.00
20609	Tensile Strength: 400K to 600K Pounds (Each)	\$ 360.00
20611	Tensile Strength: Stress-Strain Percent Offset	\$ 200.00
20545	Weld: Macroetch	\$ 90.00
20547	Weld: Fracture	\$ 45.00
20615	Bend Test	\$ 70.00
20617	Flattening Test	\$ 70.00
20619	Hardness Test (ASTM E18)	\$ 80.00
20630	Bolt: Axial Tensile Test (Up to 7/8" diameter)	\$ 55.00
20631	Bolt: Wedge Tensile Test (Up to 7/8" diameter)	\$ 70.00
20632	Bolt: Axial Tensile Test (Greater than 7/8" up to 1" diameter)	\$ 75.00
20633	Bolt: Wedge Tensile Test (Greater than 7/8" up to 1" diameter)	\$ 95.00
20634	Bolt: Axial Tensile Test (Greater than 1" diameter)	Quotation
20635	Bolt: Wedge Tensile Test (Greater than 1" diameter)	Quotation
20636	Bolt: Proof Load Test (Up to 7/8")	\$ 80.00
20637	Bolt: Proof Load Test (Greater than 7/8" up to 1" diameter)	\$ 100.00
20638	Bolt: Proof Load Test (Greater than 1")	Quotation
20639	Nut: Proof Load Test (Up to 7/8")	\$ 60.00
20640	Nut: Proof Load Test (Greater than 7/8" up to 1" diameter)	\$ 80.00
20641	Nut: Proof Load Test (Greater than 1")	Quotation

Task Code	Chemical Testing of Metal and Steel	Rate
80170	Steel Chemical Analysis	\$ 175.00
80173	Weight of Galvanized Coating (ASTM A90)	\$ 80.00
80176	Epoxy Coating Thickness	\$ 90.00

Task Code	Machining and Preparation of Tensile and Bend Sample: Carbon Steel	Rate
20751	Machinist: Initial Preparation from Mock-up, Etc. (Per Hour)	\$ 105.00

20753	Sawcut to Overall Width (Per 0.5" Thickness or Fraction Thereof)	\$ 55.00
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20755	Machine to Test Configuration: Milled Specimens	\$ 75.00
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20757	Machine to Test Configuration: Turned Specimens (Per 0.5" Thickness or Fraction Thereof)	\$ 145.00
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20759	Prepare Subsize Specimens (Per 0.5" Thickness or Fraction Thereof)	\$ 95.00
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Task Code	Charpy Impact	Rate
20621	Charpy Impact Ambient Temperature	\$ 95.00
20623	Charpy Impact Reduced Temperature	\$ 125.00

Task Code	Machining of Charpy Samples: Carbon Steel	Rate
20780	Cutting and Milling (Per 0.5" or Fraction Thereof)	\$ 85.00
20783	Final Machining to Sample Configuration	\$ 95.00

Task Code	Prestressing Wires and Tendons, (ASTM A416)	Rate
20701	Stress-Strain Analysis: Wire or Strands (Including Chart and Percent Offset)	\$ 200.00
20703	Tensile Test Only	\$ 145.00
20705	Tendons	Quotation

Task Code	Polymer Matrix Composite Materials (Fiberwrap)	Rate
20706	Tensile Strength - Set of 5 Specimens/batch/ direction (ASTM D3039)	\$ 1,350.00
20707	Tensile Strength - Additional Specimens (ASTM D3039)	\$ 250.00
20708	Heating Chamber Time - Per 24 hr period	\$ 95.00

Task Code	Calibration Services and Universal Machine Usage	Rate
20801	Calibration/Verification Services	Quotation
20803	Universal Test Machine Usage (Per Hour)	\$ 400.00

### Ceramic Tile Testing Division

The Ceramic Tile Institute of America (CTIOA) and Twining worked together to advance and develop technology designed to enhance the quality of materials and workmanship in the ceramic tile industry. A separate schedule of fees for these services is available upon request.

Cyclic and Fatigue Testing Programs on Special Products/Parts	Quotation
Engineering and Technical supports/Design of Prototypes and Special Test Set-Up	Quotation
Fastener/Coupling Full Testing Program Per New Regulations: Tension, Tension/Bend, Shear, Double Shear, 8 Compressions	Quotation
Fiberglass/Composite Materials Field Testing Program (ASTM D1143 D1242, D2584, D4065, D4476, D4923, D7901, D7921, and D732)	Quotation
Field Testing of Structures and Structural Elements	Quotation
In-Place Shear Testing	Quotation
Materials and/or Product Evaluation Per Specifications	Quotation
Structural Dynamic Testing and Durability Analysis	Quotation





## General Conditions

NOTE: Field inspection work conditions are established by contract with Operating Engineers, Local 12.

NOTE: For projects subject to a Project Labor Agreement (PLA), if terms/conditions of the PLA are more restrictive those terms/conditions will apply.

### Minimum Charges (Inspection and Technician Personnel Only - Other Personnel Charged on Portal to Portal Basis)

2-Hour Minimum: Inspector arrives at jobsite, no work to perform.

4-Hour Minimum: 1 to 4 hours of inspection

8-Hour Minimum: Over 4 to 8 hours of inspection