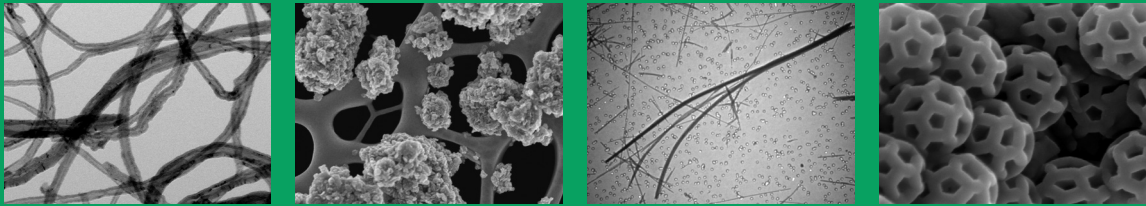
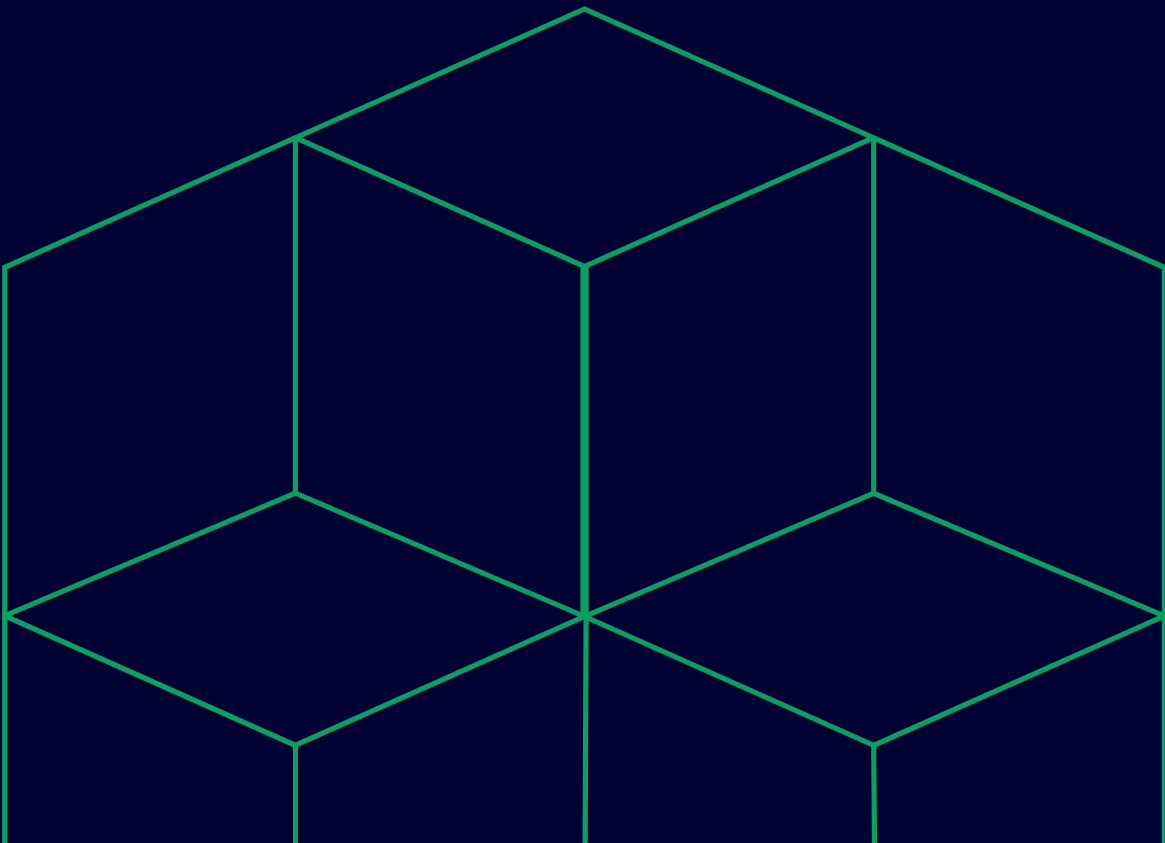


RJ Lee Group

2024 Laboratory Testing Guide



Concrete Materials Testing Services



Concrete Materials Testing - Laboratory Testing Guide 2024

RJ Lee Group is a leader in the forensic evaluation of cementitious materials for identification of root cause failure. We routinely conduct testing and evaluation of concrete materials including concrete, stucco and aggregate using petrographic techniques, chemical analyses and physical tests according to the standard methods listed below. We have significant experience in conducting small and large-scale analytical programs to assess concrete defects and premature product failures, or routine quality assurance and mix design evaluation.

Contact our Client Services team to discuss your needs and obtain a cost estimate.

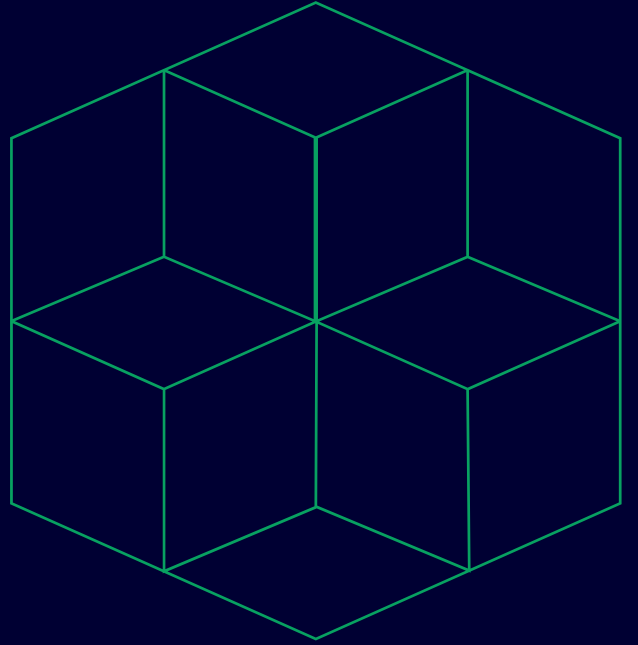
Aggregate Testing

Type of Analysis/Service	Type of Analysis/Service
Petrographic Examination of Aggregates for Concrete	ASTM C295
Petrographic Examination of Concrete Aggregate for identification and relative content of pyrite, pyrrhotite and other iron sulfide minerals	Specialized Metallographic Reflected Light Microscopy Procedure
Total Sulfur Content in Aggregate	LECO Sulfur Analyzer, X-ray Fluorescence (XRF)
Sulfur Speciation in Aggregate	LECO, wet chemistry
Aggregate Sieve Analysis	ASTM C136, ASTM C117
Crystalline Mineral Identification and Quantification	X-ray Diffraction (XRD)
Iron Staining in Light Weight Concrete Aggregates	ASTM C641
Slag Characterization for use as Aggregate Fill or Road Base	Multiple Techniques Including XRF, XRD and SEM/EDS
Sulfur Content and Speciation	Multiple Techniques

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Concrete Testing

Type of Analysis/Service	Method
Petrographic Examination of Concrete	ASTM C856 with ASTM C1723
Water-Cement Ratio Estimation	ASTM C856
Concrete Coating Failure Investigation	ASTM C856 with Organic Chemistry Analyses (FTIR and/or GCMS)
Mix Design Confirmation	ASTM C457, Procedure B
Air Void Parameters in Hardened Concrete	ASTM C457, Procedure C
Scanning Electron Microscopy of Hardened Concrete (SEM/EDS)	ASTM C1723
Hardened Masonry Mortar Characterization	ASTM C1324
Water Soluble Chloride in Mortar and Concrete	ASTM C1218
Acid Soluble Chloride in Mortar and Concrete	ASTM C1152 // AASHTO T260
Chemical Analysis of Cements and Flyash	ASTM C114 // AASHTO T105, ASTM C618 -XRF
Cement Content	ASTM C1084 or C457
Phase Identification & Quantification using Thermal Methods	TGA and DSC
Rapid Chloride Permeability Test (RCPT)	ASTM C1202
Concrete Contaminant Identification & Analysis	Organic Chemistry and Microscopy
Density, Absorption, and Voids in Hardened Concrete	ASTM C642
Freeze/Thaw Durability	ASTM C666
Non-destructive Concrete Testing Services	Multiple Techniques
Pyrite or Pyrrhotite induced corrosion in Concrete	ASTM C856/C1723



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