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Aggregate Material Testing



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Quality Testing

Construction Sciences provides comprehensive aggregate testing services from quarry inception through to project completion, ensuring materials are assessed for suitability at every stage of the supply chain.

Our NATA-accredited laboratories test aggregates used in concrete production, road and rail base construction, drainage applications, and pavement works. Aggregate materials, including crushed rock, sand, gravel, and recycled concrete, must meet precise physical and mechanical specifications to perform reliably in their intended application. Inconsistent or non-conforming material introduces risk at every stage of a project, making independent, technically rigorous testing essential.

Quality Service

Many of our laboratories are situated adjacent to quarry operations, allowing our experienced technicians to deliver dedicated on-site testing with consistent daily output and rapid turnaround of results. Our team works to relevant Australian Standards, State and Territory transport authority specifications, providing clients with the reporting accuracy and technical credibility required for compliance and quality assurance.

Our aggregate testing scope includes: particle size distribution, particle density and water absorption, particle shape, wet/dry strength, ACV, 10% fines value, durability, soundness, Los Angeles abrasion, CBR, contaminants, weak particles, and Washington degradation.





Test Method	Name	Melbourne Laboratory	Traralgon Laboratory	SC Specialised Testing*	CS Lab Network	CS Wollongong	TaT days
AS1141.3.1	Sampling - Aggregates	●	●				
AS1141.4	Bulk density of aggregate	●	●	●		●	5
AS1141.5	Particle density and water absorption of fine aggregate	●	●	●		●	5
AS1141.6.1	Particle density and water absorption of coarse aggregate - Weighing-in-water method	●	●	●		●	5
AS1141.11.1	Particle size distribution - Sieving method	●	●	●		●	4
AS1141.12	Materials finer than 75 µm in aggregates (by washing)	●	●	●		●	4
AS1141.14	Particle shape, by proportional caliper	●	●	●		●	5
AS1141.15	Flakiness index	●	●	●		●	5
AS1141.20.1	Average least dimension - Direct measurement (nominal size 10 mm and greater)		●	●		●	5
AS1141.20.2	Average least dimension - Direct measurement (nominal sizes 5 mm and 7 mm)		●			●	5
AS1141.20.3	Average least dimension - Calculation (nomograph)		●	●			
AS1141.21	Aggregate crushing value	●		●		●	5
AS1141.22	Wet/dry strength variation	●		●		●	10
AS1141.23	Los Angeles value	●	●			●	5
AS1141.24	Aggregate soundness - Evaluation by exposure to sodium sulphate solution	●		●		●	15
AS1141.25.1	Degradation factor - Source rock			●			
AS1141.25.2	Degradation factor - Coarse aggregate	●	●	●			
AS1141.25.3	Degradation factor - Fine aggregate	●	●			●	5
AS1141.27	Resistance to wear by attrition	●				●	5
AS1141.29	Accelerated Soundness Index				●		
AS1141.30.1	Coarse aggregate quality by visual comparison	●	●				
AS1141.31	Light Particles				●	●	5
AS1141.32	Weak particles (including clay lumps, soft and friable particles) in coarse aggregates	●	●	●		●	5
AS1141.33	Clay and fine silt (settling method)	●	●	●		●	5
AS1141.34	Organic impurities other than sugar	●	●	●		●	5
AS1141.66	Methylene Blue Value				●	●	5
AS1289.2.1.1	Soil moisture content tests - Determination of the moisture content of a soil - Oven drying method	●	●	●		●	3
AS1289.2.1.6	Soil moisture content tests - Determination of the moisture content of a soil - Hotplate drying method	●	●	●		●	3
AS1289.3.1.1	Soil classification tests - Determination of the liquid limit of a soil - Four point Casagrande method	●	●	●		●	7
AS1289.3.1.2	Soil classification tests - Determination of the liquid limit of a soil - One point Casagrande method	●	●	●		●	7
AS1289.3.2.1	Soil classification tests - Determination of the plastic limit of a soil	●	●	●		●	7
AS1289.3.3.1	Soil classification tests - Calculation of the plasticity index of a soil	●	●	●		●	7
AS1289.3.4.1	Soil classification tests - Determination of the linear shrinkage of a soil	●	●	●		●	7
AS1289.3.5.1	Soil classification tests - Determination of the soil particle density of a soil	●		●			
AS1289.3.6.1	Soil classification tests - Determination of the particle size distribution of a soil - Standard method of analysis by sieving	●	●	●		●	5
AS1289.3.7.1	Soil classification tests - Determination of the sand equivalent of a soil using a power-operated shaker	●	●				
AS1289.3.8.1	Soil classification tests - Dispersion - Determination of Emerson class number of a soil	●	●	●		●	5
AS1289.4.1.1	Soil chemical tests - Determination of the organic matter content of a soil				●	●	5
AS1289.4.3.1	Soil chemical tests - Determination of the pH value of a soil - Electrometric method	●		●		●	5
AS1289.4.4.1	Soil chemical tests - Determination of the electrical resistivity of a soil - Method for fine granular materials			●	●	●	5
AS1289.5.1.1	Soil compaction and density tests - Determination of the dry density/moisture content relation of a soil using standard compactive effort	●	●	●		●	5
AS1289.5.2.1	Soil compaction and density tests - Determination of the dry density/moisture content relation of a soil using modified compactive effort	●	●	●		●	5
AS1289.5.5.1	Soil compaction and density tests - Determination of the minimum and maximum dry density of a cohesionless material	●		●		●	5
AS1289.6.1.1	Soil strength and consolidation tests - Determination of the California Bearing Ratio of a soil	●	●	●		●	5 plus soak
AS1289.6.7.1/2	Soil strength and consolidation tests - Determination of permeability of a soil	●	●	●			
AS5101.3.3	Cement content of cement stabilized materials	●	●				
AS5101.4	Unconfined compressive strength of compacted materials	●	●				
NT Build Method 492	Nordtest Chloride level in hardened concrete			●		●	5 plus curing
NT Build Method 443	Nordtest Chloride penetration resistance			●			
ASTM C295	Petrographic Analysis				●		
RC376.03	Accelerated Mortar Bar Test - Alkali-silica reactivity of aggregate				●	●	35
Q181C	Effective angle of internal friction at constant volume conditions for granular materials - coarse grained	●					

Contact your nearest Construction Sciences laboratory to discuss your Aggregate Material Testing requirements.

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* Sunshine Coast