



Stevenson Aggregates Limited

Client Number 6

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Authorised Representative

Mr Trevor Whitmore
Laboratory Manager

Programme

Mechanical Testing Laboratory

Accreditation Number 17

Initial Accreditation Date 13 October 1975

Conformance Standard

ISO/IEC 17025:2017

General requirements for the competence of testing and calibration laboratories

Laboratory Services Summary

4.01	Aggregates
4.04	Concrete
4.08	Soils
4.15	Seconded Sampling
4.25	Cement Products
4.99	Other Specified Tests

Approved Signatories

Mr Blake Buckland	4.01, 4.04, 4.08
Mr James Robinson	4.99
Mr Trevor Whitmore	4.01, 4.04, 4.08, 4.15, 4.25

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4.01 Aggregates

The following tests in accordance with NZS 3111:1986

- Section 5 Sampling aggregate
- Section 6 Sieve analysis of aggregate and calculation of fineness modulus
- Section 7 The moisture content of aggregate by drying
- Section 8 Aggregate performance in concrete
- Section 9 Lightweight particles in aggregate
- Section 10 Unit Mass and voids content of aggregate
- Section 12 The density and absorption of coarse aggregate
- Section 13 The cleanness of coarse aggregate
- Section 14 Crushing resistance of coarse aggregate
- Section 15 Weathering resistance of coarse aggregate
- Section 16 Density and absorption of sand
- Section 17 Presence of organic impurities in sand
- Section 18 Sand equivalent value
- Section 19 Voids content, flow time, and percentage oversize material in sand


The following tests in accordance with NZS 4407:2015 - Section 2

Method of Sampling Road Aggregates

The following tests in accordance with NZS 4407:2015 - Section 3

Methods of Testing Road Aggregates – Laboratory Tests

- 3.1 The water content of aggregate
- 3.2 The cone penetration limit
- 3.3 The plastic limit
- 3.4 The plasticity index
- 3.5 The clay index
- 3.6 The sand equivalent
- 3.7 The solid density of aggregate particles
 - 3.7.1 Pycnometer method for particles passing the 19.0 mm test sieve
 - 3.7.2 Immersion in water method for coarse aggregate
- 3.8 Particle size distribution
 - 3.8.1 Preferred method by wet sieving
 - 3.8.2 Subsidiary method by dry sieving
- 3.9 The cleanness value of coarse aggregate
- 3.10 The crushing resistance of coarse aggregate under a specified load
- 3.11 The weathering quality index of coarse aggregate
- 3.12 The abrasion resistance of aggregate by use of the Los Angeles machine
- 3.13 The size and shape of aggregate particles
- 3.14 The broken faces content of aggregate
- 3.15 The California bearing ratio (CBR)

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The following tests in accordance with NZS 4407:2015 - Section 4

Methods of Testing Road Aggregates - Field Tests

- 4.1 The density of compacted aggregate – sand replacement method
- 4.2 The field water content and field dry density of compacted materials - method using a nuclear moisture-density gauge – direct transmission
- 4.3 The field water content and field dry density of compacted materials - method using a nuclear moisture-density gauge – backscatter

The following tests in accordance with AS Standards

- AS 1141.14 Proportional calliper
- AS 1141.15 Methods for sampling and testing aggregates - Flakiness index

The following tests in accordance with ASTM Standards

- C127-15 Density, relative density (specific gravity) and absorption of coarse aggregate
- C128-15 Standard Test Method for Relative Density (Specific Gravity) and Absorption of Fine Aggregate
- C131-20 Resistance to degradation of small-size coarse aggregate by abrasion and impact in the Los Angeles machine
- C535-16 Resistance to degradation of large-size coarse aggregate by abrasion and impact in the Los Angeles machine
- D4791-19 Flat particles, elongated particles or flat and elongated particles in coarse aggregate
- D5874-16 Determination of the impact value of a soil


4.04 Concrete

The following tests in accordance with NZS 3112.1:1986

- Section 3 Sampling fresh mixed concrete
- Section 4 Density (unit mass), yield, cement content, and air content (gravimetric) of concrete
- Section 5 Slump of concrete
- Section 9 Determination of the air content of fresh concrete by the application of pressure

The following tests in accordance with NZS 3112.2:1986

- Section 3 Moulding and curing concrete test cylinders
- Section 4 Capping cylindrical concrete specimens
- Section 5 Moulding and curing concrete beams for flexural tests
- Section 6 Compressive strength of moulded concrete cylinders

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- Section 7 Flexural tensile strength of concrete
- Section 8 Splitting tensile strength of moulded concrete cylinders
- Section 9 Strength in compression of drilled concrete cores
- Section 10 Statistical analysis of strength test results

The following tests in accordance with NZS 3112.3:1986

- Section 5 Density of hardened concrete specimens

The following tests in accordance with NZS 3112.4:1986

- Section 5 Moulding, curing and testing grout test cylinders

The following tests in accordance with ASTM Standards

- C109 Compressive Strength of Cement Mortars (50-mm Cubes)

4.08 Soils

The following tests in accordance with NZS 4402:1986

Soil Classification tests


- Test 2.1 Determination of the water content
- Test 2.2 Determination of the liquid limit
- Test 2.3 Determination of the plastic limit
- Test 2.4 Determination of the plasticity index
- Test 2.5 Determination of the cone penetration limit
- Test 2.6 Determination of the linear shrinkage
- 2.7 Determination of the solid density of soil particles
 - Test 2.7.1 Method for coarse medium and fine soils
 - Test 2.7.2 Method for medium and fine soils
- 2.8 Determination of the particle-size distribution
 - Test 2.8.1 Standard method by wet sieving
 - Test 2.8.2 Subsidiary method by dry sieving
 - Test 2.8.4 Subsidiary method for fine soils (hydrometer method)

Soil Chemical Tests

- 3.1 Determination of the organic matter content
 - Test 3.1.2 Subsidiary method by ignition
- 3.4 Detection of presence of allophane in soils

Soil Compaction tests

- 4.1 Determination of the dry density/water content relationship
 - Test 4.1.1 NZ standard compaction test

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- Test 4.1.2 NZ heavy compaction test
- Test 4.1.3 NZ vibrating hammer compaction test

Soil Density tests

- 5.1 Determination of the density of soil
 - Test 5.1.1 Sand replacement method for the determination of the in situ density
 - Test 5.1.3 Sampling tube method for the determination of the in situ density

Soil Strength tests

- 6.1 Determination of the California Bearing Ratio (CBR)
 - Test 6.1.1 Standard laboratory method for remoulded specimens
 - Test 6.1.2 Standard laboratory method for undisturbed specimens
- 6.3 Determination of the unconfined compressive strength of cohesive soil
 - Test 6.3.1 Standard method using laboratory apparatus

The following tests in accordance with NZS 4402:1988

Soil Strength tests

- 6.5 Determination of the penetration resistance of a soil
 - Test 6.5.2 Hand method using a dynamic cone penetrometer

The following tests in accordance with other methods specified

NZGS Guideline for hand held shear vane test – 2001 Vane shear strength of a cohesive soil using hand held shear vane

4.15 Seconded Sampling

(a) Sampling

- (i) Aggregates
- (iii) Fresh concrete


4.25 Cement Products

The following tests in accordance with BS 6319

Part 2:1983 Compressive Strength

The following tests in accordance with AS/NZS 4456

- Method 1 Sampling for compliance testing
- Method 2 Assessment of mean and standard deviation
- Method 3 Determining dimensions

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- Method 4 Determining compressive strength of masonry units
- Method 5 Determining breaking load of segmental pavers and flags
- Method 8 Determining moisture content, dry density and ambient density
- Method 9 Determining abrasion resistance
- Method 16 Determining permeability to water
- Method 19 Determining bow

4.99 Other Specified Tests

The following tests in accordance with NZS 4402:1988

Soil strength tests

- 6.5 Determination of the penetration resistance of a soil
- Test 6.5.2 Hand method using a dynamic cone penetrometer

The following tests in accordance with other methods specified

- NZGS Guideline for hand held shear vane test – 2001 Vane shear strength of a cohesive soil using hand held shear vane

The following tests in accordance with ASTM Standards

- D5874-16 Determination of the impact value of a soil

The following tests in accordance with NZS 4407:2015 - Section 4


Methods of Testing Road Aggregates - Field Tests

- 4.1 The density of compacted aggregate – sand replacement method
- 4.2 The field water content and field dry density of compacted materials - method using a nuclear moisture-density gauge – direct transmission
- 4.3 The field water content and field dry density of compacted materials - method using a nuclear moisture-density gauge – backscatter

The following tests in accordance with NZS 4407:2015 - Section 3

Methods of Testing Road Aggregates – Laboratory Tests

- 3.1 The water content of aggregate

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