Laboratory Accreditation Programmes

Schedule to

CERTIFICATE OF ACCREDITATION

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Stevenson Aggregates Limited **Client Number 6**

Private Bag 94000, Manukau City, Auckland, 2241
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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	Activities by Seconded Personnel
4.25	Cement Products

Key Technical Personnel

Mr Christopher Ashworth	4.01. 4.04, 4.25; selected
Mr Philip Johnstone	4.01, 4.08; selected
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 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	The 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

Methods 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 mode

The following tests in accordance with AS Standards

AS 1141.14	Particle shape, by proportional caliper
AS 1141.15	Flakiness index
AS 1141.22	Wet/dry strength variation

The following tests in accordance with ASTM Standards

C127-25	Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
C128-22	Relative Density (Specific Gravity) and Absorption of Fine Aggregate
C131/C131M-20	Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
C535-16(2024)	Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles
D4791-19(2023)	Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
D5874-24	Impact Value (IV) of a Soil

The following tests in accordance with other methods specified

NZTA T19	Indirect Tensile Strength Testing of Modified and Bound Pavement Materials
NZTA T20	Ethylene Glycol Accelerated Weathering Test

4.04 Concrete

The following tests in accordance with NZS 3112.1:1986

Section 3	Sampling freshly mixed concrete
Section 4	Density (unit mass), yield, cement content, and air content (gravimetric) of concrete
Section 5	Slump of concrete
Section 9	Air content of fresh concrete by the application of pressure
Section 11	Spread of concrete

The following tests in accordance with NZS 3112.2:1986

Section 3	Moulding and curing concrete test cylinders

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Section 4	Capping cylindrical concrete specimens
Section 5	Moulding and curing concrete beams for flexural tests
Section 6	Compressive strength of moulded concrete cylinders
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/C109M-26	Compressive Strength of Hydraulic Cement Mortars (Using 50 mm [2 in.] Cube Specimens)

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

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Soil Compaction tests

4.1		Determination of the dry density/water content relationship
	Test 4.1.1	NZ standard compaction test
	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 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 Activities by Seconded Personnel

(a) Sampling

(i) Aggregates

NZS 3111 Section 5	Sampling aggregate
NZS 4407 Section 2	Sampling road aggregates

(iii) Fresh concrete

NZS 3112.1 Section 3	Sampling freshly mixed concrete

(b) Field tests on fresh concrete

NZS 3112.1 Section 5	Slump of concrete
NZS 3112.1 Section 11	Spread of concrete
NZS 3112.2 Section 3	Moulding and curing concrete test cylinders

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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 4456:2003

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

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