

Technical Data Sheet Otaika Quarry

Basecourse Aggregates

Otaika Quarry Source Rock: Greywacke

Source Rock Characteristics	Test Method	Value
Crushing Resistance	NZS4407:1991 test 3.10	5.7% - 130kN
Weathering Resistance	NZS 4407:1991 test 3.11	AA
California Bearing Ratio	NZS4407:1991 test 3.15	> 250
Solid Density	NZS4407:1991 3.7.1	~2700 kg/m ³

Sub Basecourse Aggregate (GAP)

Test	Test Method	Value
Max Dry Density	NZS4402:1986 test 4.1.3	> 2.3 T/m ³
Optimum Water Content		4% - 5%

Basecourse Aggregate (TNZ40 M4)

Test	Test Method	Value
Max Dry Density	NZS4402:1986 test 4.1.3	> 2.3 T/m ³
Optimum Water Content		5% - 6%

Coarse Aggregate

Product	SE	63.0mm	37.5mm	19.0mm	9.5mm	4.75mm	2.36mm	0.075mm
GAP 65	>25	100%	70 – 85%	48 – 68%	31 – 54%	20 – 41%	13 – 32%	0 - 6%
GAP40	>25		100%	66 - 81%	43 – 57%	28 – 43%	19 – 33%	3 - 7%
TNZ 40	>40		100%	66 – 81%	43 – 57%	28 – 43%	19 – 33%	0 – 7%

Concrete Aggregate

Otaika Quarry Source Rock: Greywacke

Source Rock Characteristics	Test method	Value
Crushing Resistance	NZS3111 Section 14	>500kN to produce 10% Fines
Weathering Resistance	NZS3111 Section 15	AA

Coarse Aggregate

Test	Test Method	Value
Unit Mass -SSD*	NZS3111 Section 10	1430 Kg/m ³
-voids		46%
Absorption	NZS3111 Section 12	1%
Density -Dry		2670 Kg/m ³
-SSD*		2690 Kg/m ³

* Saturated Surface Dry

Fine aggregate

Test	Test Method	Value
Unit Mass	NZS3111 Section 10	1390 Kg/m ³
-voids		47%
Absorption	NZS3111 Section 16	1.3%
Density -Dry		2640 Kg/m ³
-SSD*		2680 Kg/m ³
Chloride Content		

* Saturated Surface Dry

Coarse Aggregate

Product	CV	26.5mm	19.0mm	16.0mm	13.2mm	9.5mm	6.7mm	4.75mm
19mm	89	100 %	100 – 95 %	70 – 50%	17 – 3%	2 - 0%		
13mm	87			100%	100 - 89%	56 - 43%	9 - 0%	0%
10mm	78				100%	98 - 92%	35 - 23%	7 – 1%

Fine Aggregate

Product	Moisture Content	SE	6.7mm	4.75m m	2.36m m	1.18m m	0.6mm	0.3mm	0.15m m	0.075 mm
Washed PAP	5%	75	100%	100 – 90%	71 – 55%	44 – 30%	25 – 16%	14 – 8%	6 - 2%	3 – 0%
Unwashed PAP	5%	60	100%	100 – 93%	70 – 60%	45 – 35%	31 – 23%	23 – 15%	16 – 12%	13 - 9%

Asphalt Aggregate

Otaika Quarry Source Rock: Greywacke

Source Rock Characteristics	Test Method	Value
Crushing Resistance	NZS4407:1991 test 3.10	2.8% - 230kN
Weathering Resistance	NZS 4407:1991 test 3.11	AA
Polished Stone Value	BS EN 1097-8:2009	>53

Coarse Aggregate

Test	Test Method	Value
Absorption	ASTM C127-07	< 1%
Density -Dry		2.68
-SSD*		2.70

* Saturated Surface Dry

Fine Aggregate

Test	Test Method	Value
Absorption	ASTM C128-07a	1.5%
Density -Dry		2.63
-SSD*		2.67

* Saturated Surface Dry

Coarse Aggregate

Product	CV	ALD	16.0 mm	13.2mm	9.5mm	6.7mm	4.75mm	2.36mm
Grade 3	>80	8.5 – 10mm	100 %	98 – 88%	17 – 7%	6 - 0%	0%	
Grade 4	>80	6 – 7mm		100%	95 – 85%	3 - 0%	0%	
Grade 5	>80	5 – 6mm		100%	100 - 95%	61 – 41	6 - 0%	3 - 0%
Grade 6	>80	4 - 5mm			100%	100 – 93%	30 -20%	6 - 0%

Fine Aggregate

Product	Moisture Content	SE	6.7mm	4.75m m	2.36m m	1.18m m	0.6mm	0.3mm	0.15m m	0.075 mm
PAP	< 4%	>35	100%	100 – 93%	70 – 60%	45 – 35%	31 – 23%	23 – 15%	16 – 12%	13 - 9%

Drainage Aggregate

Otaika Quarry Source Rock: Greywacke

Source Rock Characteristics	Test Method	Value
Crushing Resistance	NZS3111 Section 14	>500kN to produce 10% Fines

Drainage Aggregate

Product	CV	63.0mm	37.5mm	26.5mm	19.0mm	16.0mm	13.2mm	9.5mm	6.7mm
60-40	>80	100%	30%-65%	0%-25%	0%-5%		<5%		
20-7	>80				100%	90%-95%	50%-60%	35%-45%	<10%

All testing carried out at an IANZ accredited laboratory. Test results available upon request. All results correct at time of publication, July 2012.