

Technical Data Sheet Whitehall Quarry

Basecourse Aggregate

Whitehall Quarry Source Rock: Greywacke

Source Rock Characteristics	Test Method	Value
Crushing Resistance	NZS4407:1991 test 3.10	@ 130kN < 5% @200kN < 10%
Weathering Resistance	NZS 4407:1991 test 3.11	AA – BA
Solid Density	NZS4407:1991 3.7.1	~2700 kg/m ³
California Bearing Ratio	NZS 4407:1991 Part 3.15	> 100
Los Angeles Abrasion (LAA)	ASTM C535-09	< 20

Manufactured General All Passing Aggregate (WHAP 40/65)

Test	Test Method	Value
Max Dry Density	NZS4402:1986 test 4.1.3	> 2.10 T/m ³
Optimum Water Content		6% -8%

Basecourse Aggregate (TNZ40 M4)

Test	Test Method	Value
Max Dry Density	NZS4402:1986 test 4.1.3	> 2.2 T/m ³
Optimum Water Content		5% -76%

Coarse Aggregate

Product	SE	63.0mm	37.5mm	19.0mm	9.5mm	4.75mm	2.36mm	0.075mm
GAP 65	>30	100%	80% - 55%	65% - 35%	50% - 20%	35% - 10%	30% - 15%	< 6%
GAP40	>30		100%	80% - 60%	65% - 35%	45% - 25%	33% - 14%	< 7%
TNZ 40	>40		100%	66 – 81%	43 – 57%	28 – 43%	19 – 33%	< 7%

Concrete Aggregate

Whitehall Quarry Source Rock: Greywacke

Source Rock Characteristics	Test Method	Value
Crushing Resistance	NZS3111 Section 14	>400 kN to produce 10% Fines
Weathering Resistance	NZS3111 Section 15	AA

Coarse Aggregate

Test	Test Method	Value
Unit Mass Loose Poured - SSD*	NZS3111 Section 10	> 1350 Kg/m ³
Compacted -SSD*		> 1500 Kg/m ³
-voids		40-50%
Absorption	NZS3111 Section 12	< 1%
Density -Dry		> 2650 Kg/m ³
-SSD*		> 2700 Kg/m ³

* Saturated Surface Dry

Fine Aggregate (AP7) Dry

Test	Test Method	Value
Unit Mass	NZS3111 Section 10	1390 Kg/m ³
-voids		47%
Absorption	NZS3111 Section 16	2 %
Density -Dry		> 2550 Kg/m ³
-SSD*		> 2600 Kg/m ³

* Saturated Surface Dry

Coarse Aggregate

Product	Cleanliness Value	26.5mm	19.0mm	13.2mm	9.5mm	4.75mm	2.36mm
20mm	>75	100%	100% - 85%	25% - 5%	10% - 0%	0%	
13mm	>75		100%	100% - 85%	60% - 40%	10% - 0%	0%
10mm	>75				100%	<10%	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
AP7 Dry	< 4%	> 35	100%	100% - 90%	70% - 50%	45% - 30%	30% - 20%	20% - 10%	20% - 10%	< 15%

Asphalt Aggregate

Whitehall Quarry Source Rock: Greywacke

Source Rock Characteristics	Test Method	Value
Crushing Resistance	NZS4407:1991 test 3.10	< 5% - 230kN
Weathering Resistance	NZS 4407:1991 test 3.11	AA
Polished Stone Value	BS EN 1097-8:2009	>53
Weak Particles	AS1141.32:1995	<1%

Coarse Aggregate

Test	Test Method	Value
Absorption	ASTM C127-07	< 1%
Density -Dry		> 2.68 T/m ³
-SSD*		> 2.70 T/m ³

* Saturated Surface Dry

Fine Aggregate

Test	Test Method	Value
Absorption	ASTM C128-07a	< 2%
Density -Dry		>2.50 T/m ³
-SSD*		>2.60 T/m ³
Micro-Deval (% loss)	WI Lab 088	< 10%

* Saturated Surface Dry

Coarse Aggregate

Product	CV	ALD	19.0 mm	13.2mm	9.5mm	6.7mm	4.75mm	2.36mm
Grade 2	>80	9.5–12.0mm	100 %	30% - 15%	< 5%	0%		
Grade 3	>80	8.5 – 10.0mm	100 %	100% - 80%	25% - 5%	<5%	0%	
Grade 4	>80	6.0 – 7.0mm		100%	90% - 70%	<15%	<5%	0%
Grade 5	>80	5.0 – 6.0mm		100%	100% - 95%	80% - 60%	10% - 0%	5% - 0%
Grade 6	>80	4.0 – 5.0mm			100%	100% - 95%	80% - 60%	15% - 0%

Fine Aggregate

Product	Moisture Content	SE	9.5mm	4.75m m	2.36m m	1.18m m	0.6mm	0.3mm	0.15m m	0.075 mm
PAP	< 4%	>40	100%	100% – 80%	70% – 60%	50% – 40%	40% – 25%	30% – 15%	20% – 10%	15% - 10%

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