

Fyshwick Laboratory
 Holcim (Australia) Pty Ltd
 ABN 87099732297
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 PHONE: (02) 6285 5314
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Material Test Report

Report No: MAT:QFYS12/00730
 Issue No: 1

This report replaces all previous issues of report no 'MAT:QFYS12/00730'.
 Accredited for compliance with ISO/IEC 17025.



Mery Uren
 Approved Signatory: Mery Uren
 NATA Accredited Laboratory Number: 327-455
 Date of Issue: 30/07/2012

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Client: COOMA RD QUARRY
 RMB 500 ROYALLA ROAD
 QUEANBEYAN NSW 2620
 Project: COMPLIANCE TESTING

Sample Details

Sample ID: QFYS12/00730
 Client Sample ID:
 Date Sampled: 21/06/2012
 Date Received: 21/06/2012
 Source: COOMA RD QUARRY
 Material: 20MM DOWNER EDI WORKS
 Specification: NCRQDEW20 - 20 mm Downer EDI Works (CRQ 017)
 Location: 91E
 Sampling Method: AS 1141.3.1 Clause 6.9.5 (Stockpile - loader)
 Sampled From: SALES STOCKPILE
 Lot No:
 Sampled By: James Stevens

Particle Size Distribution

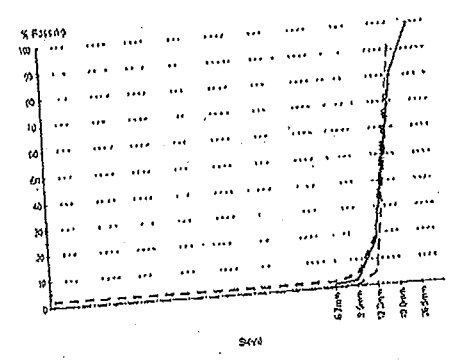
Method: AS 1141.11.1, AS 1141.12
 Drying by: Hotplate
 Note: Sample Washed

Sieve Size	% Passing	Limits
26.5mm	100	≥100
19.0mm	81	81 ≤ α ≤ 91
13.2mm	17	5 ≤ α ≤ 19
9.5mm	2	0 ≤ α ≤ 4
6.7mm	1	0 ≤ α ≤ 2
Finer 75µm	0	0 ≤ α ≤ 2

Other Test Results

Description	Method	Result	Limits
Uncompacted Bulk Density (t/m³)	AS 1141.4	1.45	
Compacted Bulk Density (t/m³)		1.53	
Aggregate Moisture Condition		Dried	
Nominal Size Of Sample (mm)		20	
Moisture Content (%)	AS 1289.2.1.1	0.0	
Apparent Particle Density - Coarse (t/m³)	AS 1141.6.1	2.71	
Particle Density Dry (t/m³)		2.69	
Particle Density SSD (t/m³)		2.69	
Water Absorption (%)		0.3	
Misshapen Particles (%)	AS 1141.14	14	≤25
Flat Particles (%)		10.8	
Elongated Particles (%)		3.2	
Flat & Elongated Particles (%)		0.1	
Calliper Ratio		2:1	
Misshapen Particles (%)	AS 1141.14	1	≤10
Flat Particles (%)		1.3	
Elongated Particles (%)		0.0	
Flat & Elongated Particles (%)		0.0	
Calliper Ratio		3:1	

Chart



Comments

N/A

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PHONE: (02) 6285 5314
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Report No: MAT:QFYS12/01063

Material Test Report

Client: COOMA RD QUARRY
 RMB 500 ROYALLA ROAD
 QUEANBEYAN NSW 2620

Project: COMPLIANCE TESTING

Sample Details

Sample ID: QFYS12/01063
 Client Sample ID:
 Date Sampled: 18/09/2012
 Date Received: 18/09/2012
 Source: COOMA RD QUARRY
 Material: 20MM DOWNER EDI WORKS
 Specification: NCRQDEW20 - 20 mm Downer EDI Works (CRQ 017)
 Location: 369A
 Sampling Method: AS 1141.3.1 Clause 6.9.5 (Stockpile - loader)
 Sampled From: SALES STOCKPILE
 Lot No:
 Sampled By: James Stevens

Particle Size Distribution

Method:
 Drying by:
 Date Tested:

Sieve Size	% Passing	Limits
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Other Test Results

Description	Method	Result	Limits
Apparent Particle Density - Coarse (t/m ³)	AS 1141.6.1	2.72	
Particle Density Dry (t/m ³)		2.70	
Particle Density SSD (t/m ³)		2.70	
Water Absorption (%)		0.3	

Chart

Comments

N/A



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Report No: MAT:QFYS12/00818

Material Test Report

Client: COOMA RD QUARRY
 RMB 500 ROYALLA ROAD
 QUEANBEYAN NSW 2620

Project: QUALITY CONTROL CRQ

Sample Details

Sample ID: QFYS12/00818
 Client Sample ID:
 Date Sampled: 18/07/2012
 Date Received: 18/07/2012
 Source: COOMA RD QUARRY
 Material: 14MM DOWNER EDI WORKS
 Specification: NCRQDEW14 - 14 mm Downer EDI Works (CRQ 018)
 Location: 108A
 Sampling Method: AS 1141.3.1 Clause 6.9.5 (Stockpile - loader)
 Sampled From: SALES STOCKPILE
 Lot No:
 Sampled By: James Stevens

Particle Size Distribution

Method: AS 1141.11.1, AS 1141.12
 Drying by: Hotplate

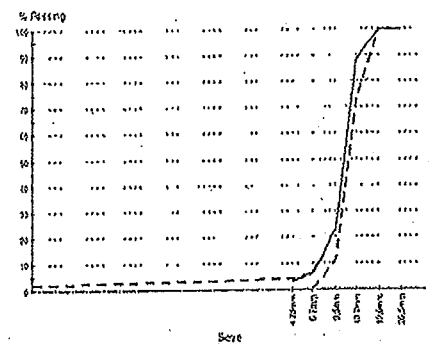
Note: Sample Washed

Sieve Size	% Passing	Limits
26.5mm	100	≥100
19.0mm	100	≥100
13.2mm	88	72 ≤ α ≤ 88
9.5mm	23	11 ≤ α ≤ 23
6.7mm	6	0 ≤ α ≤ 6
4.75mm	3	0 ≤ α ≤ 4
Finer 75µm	1	0 ≤ α ≤ 2

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	0.6	
Nominal Sample Size (mm)	AS 1141.22	14	
Nature of Sample		Crushed Rock	
Agg Size and Crush Details			
Fraction Size		-13.2 + 9.5 mm	
Wet Strength (kN)		174	
Dry Strength (kN)		225	
Wet/Dry Strength Variation (%)		23	
Breakdown Occured		No	
Cylinder Size (diameter in mm)		150	
Misshapen Particles (%)	AS 1141.14	0	≤10
Flat Particles (%)		0.0	
Elongated Particles (%)		0.0	
Flat & Elongated Particles (%)		0.0	
Calliper Ratio		3:1	
Misshapen Particles (%)	AS 1141.14	12	≤25
Flat Particles (%)		9.9	
Elongated Particles (%)		1.4	
Flat & Elongated Particles (%)		1.0	
Calliper Ratio		2:1	

Chart



Comments

N/A

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PHONE: (02) 6285 5314
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Report No: MAT:QFYS12/01064

Material Test Report

Client: COOMA RD QUARRY
 RMB 500 ROYALLA ROAD
 QUEANBEYAN NSW 2620

Project: COMPLIANCE TESTING

Sample Details

Sample ID: QFYS12/01064
 Client Sample ID:
 Date Sampled: 18/09/2012
 Date Received: 18/09/2012
 Source: COOMA RD QUARRY
 Material: 14MM DOWNER EDI WORKS
 Specification: NCRQDEW14 - 14 mm Downer EDI Works (CRQ 018)
 Location: 369C
 Sampling Method: AS 1141.3.1 Clause 6.9.5 (Stockpile - loader)
 Sampled From: SALES STOCKPILE
 Lot No:
 Sampled By: James Stevens

Particle Size Distribution

Method:
 Drying by:
 Date Tested:

Sieve Size	% Passing	Limits
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Other Test Results

Description	Method	Result	Limits
Apparent Particle Density - Coarse (t/m ³)	AS 1141.6.1	2.70	
Particle Density Dry (t/m ³)		2.67	
Particle Density SSD (t/m ³)		2.68	
Water Absorption (%)		0.4	

Chart

Comments
 N/A



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PHONE: (02) 6285 5314
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Report No: MAT:QFYS12/01183

Material Test Report

Client: COOMA RD QUARRY
 RMB 500 ROYALLA ROAD
 QUEANBEYAN NSW 2620

Project: QUALITY CONTROL CRQ

Sample Details

Sample ID: QFYS12/01183
 Client Sample ID:
 Date Sampled: 24/10/2012
 Date Received: 24/10/2012
 Source: COOMA RD QUARRY
 Material: 10MM DOWNER EDI WORKS
 Specification: NCRQDEW10 - 10 mm Downer EDI Works (CRQ 019)
 Location: 392A
 Sampling Method: Sampled by Client - Tested as received
 Sampled From: SALES STOCKPILE
 Lot No:
 Sampled By: EXTERNAL

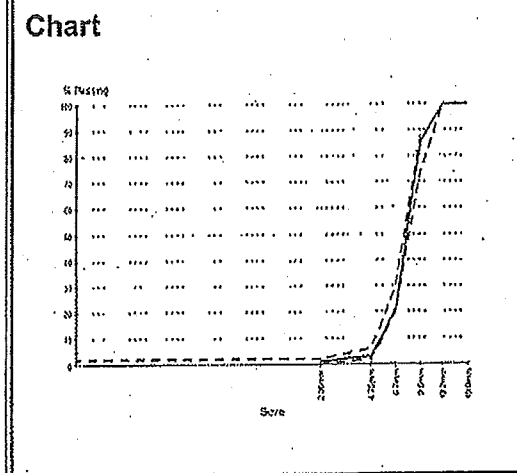
Other Test Results

Description	Method	Result	Limits
Misshapen Particles (%)	AS 1141.14	2	≤10
Flat Particles (%)		2.3	
Elongated Particles (%)		0.0	
Flat & Elongated Particles (%)		0.0	
Calliper Ratio		3:1	
Moisture Content (%)	AS 1289.2.1.1	1.6	
Misshapen Particles (%)	AS 1141.14	20	≤25
Flat Particles (%)		18.7	
Elongated Particles (%)		1.0	
Flat & Elongated Particles (%)		0.0	
Calliper Ratio		2:1	

Particle Size Distribution

Method: AS 1141.11.1, AS 1141.12
 Drying by: Oven
 Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	≥100
13.2mm	100	≥100
9.5mm	85	74 ≤ α ≤ 88
6.7mm	21	20 ≤ α ≤ 30
4.75mm	3	2 ≤ α ≤ 6
2.36mm	1	0 ≤ α ≤ 3
Finer 75µm	0	<1



Comments
 N/A

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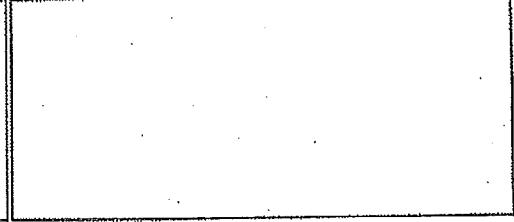
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Report No: MAT:QFYS12/01065

Material Test Report

Client: COOMA RD QUARRY
 RMB 500 ROYALLA ROAD
 QUEANBEYAN NSW 2620

Project: COMPLIANCE TESTING



Sample Details

Sample ID: QFYS12/01065
Client Sample ID:
Date Sampled: 18/09/2012
Date Received: 18/09/2012
Source: COOMA RD QUARRY
Material: 10MM DOWNER EDI WORKS
Specification: NCRQDEW10 - 10 mm Downer EDI Works (CRQ 019)
Location: 369B
Sampling Method: AS 1141.3.1 Clause 6.9.5 (Stockpile - loader)
Sampled From: SALES STOCKPILE
Lot No:
Sampled By: James Stevens

Particle Size Distribution

Method:
Drying by:
Date Tested:

Sieve Size	% Passing	Limits
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Other Test Results

Description	Method	Result	Limits
Apparent Particle Density - Coarse (t/m ³)	AS 1141.6.1	2.71	
Particle Density Dry (t/m ³)		2.68	
Particle Density SSD (t/m ³)		2.68	
Water Absorption (%)		0.6	

Chart

Comments

N/A



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Report No: MAT:QFYS12/01202

Material Test Report

Client: COOMA RD QUARRY
 RMB 500 ROYALLA ROAD
 QUEANBEYAN NSW 2620

Project: QUALITY CONTROL CRQ

Sample Details

Sample ID: QFYS12/01202
 Client Sample ID:
 Date Sampled: 26/10/2012
 Date Received: 26/10/2012
 Source: COOMA RD QUARRY
 Material: 7MM DOWNER EDI WORKS
 Specification: NCRQDEW7 - 7mm Downer EDI Works (CRQ 020)
 Location: 392C
 Sampling Method: Sampled by Client - Tested as received
 Sampled From: UNKNOWN
 Lot No:
 Sampled By: EXTERNAL

Particle Size Distribution

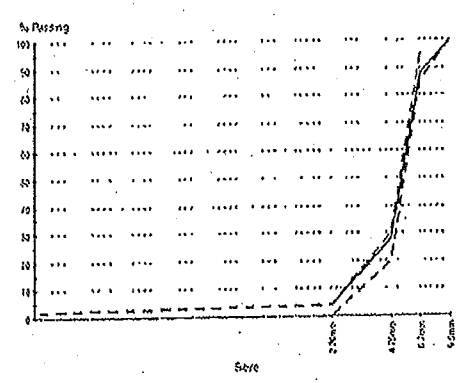
Method: AS 1141.11.1, AS 1141.12
 Drying by: Oven
 Note: Sample Washed

Sieve Size	% Passing	Limits
9.5mm	100	≥100
6.7mm	88	85 ≤ α ≤ 95
4.75mm	28	20 ≤ α ≤ 30
2.36mm	4	0 ≤ α ≤ 4
Finer 75µm	1	0 ≤ α ≤ 2

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	3.1	

Chart



Comments
 N/A

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PHONE: (02) 6285 5314
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Report No: MAT:QFYS12/01066

Material Test Report

Client: COOMA RD QUARRY
 RMB 500 ROYALLA ROAD
 QUEANBEYAN NSW 2620

Project: COMPLIANCE TESTING

Sample Details

Sample ID: QFYS12/01066
 Client Sample ID:
 Date Sampled: 18/09/2012
 Date Received: 18/09/2012
 Source: COOMA RD QUARRY
 Material: 7MM DOWNER EDI WORKS
 Specification: NCRQDEW7 - 7mm Downer EDI Works (CRQ 020)
 Location:
 Sampling Method: AS 1141.3.1 Clause 6.9.5 (Stockpile - loader)
 Sampled From: SALES STOCKPILE
 Lot No:
 Sampled By: James Stevens

Particle Size Distribution

Method:
 Drying by:
 Date Tested:

Other Test Results

Description	Method	Result	Limits
Apparent Particle Density (t/m ³)	AS 1141.5	2.69	
Particle Density Dry (t/m ³)		2.65	
Particle Density SSD (t/m ³)		2.66	
Water Absorption (%)		0.6	
Apparent Particle Density - Coarse (t/m ³)	AS 1141.6.1	2.69	
Particle Density Dry (t/m ³)		2.64	
Particle Density SSD (t/m ³)		2.66	
Water Absorption (%)		0.6	

Sieve Size	% Passing	Limits
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Chart

Comments

N/A



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Report No: MAT:QFYS12/00879

Material Test Report

Client: COOMA RD QUARRY
 RMB 500 ROYALLA ROAD
 QUEANBEYAN NSW 2620

Project: QUALITY CONTROL CRQ

Sample Details

Sample ID: QFYS12/00879
 Client Sample ID:
 Date Sampled: 01/08/2012
 Date Received: 01/08/2012
 Source: COOMA RD QUARRY
 Material: DUST DOWNER EDI WORKS
 Specification: NCRQDEWDust - Dust Downer EDI Works (CRQ 007)
 Location: E86A
 Sampling Method: AS 1141.3.1 Clause 6.9.5 (Stockpile - loader)
 Sampled From: SALES STOCKPILE
 Lot No:
 Sampled By: James Stevens

Other Test Results

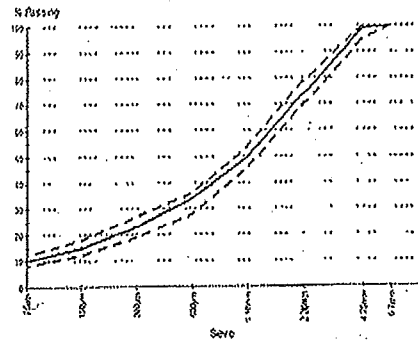
Description	Method	Result	Limits
Fineness Modulus		3.1	
Moisture Content (%)	AS 1289.2.1.1	1.3	

Particle Size Distribution

Method: AS 1141.11.1, AS 1141.12
 Drying by: Hotplate
 Note: Sample Washed

Sieve Size	% Passing	Limits
6.7mm	100	≥ 100
4.75mm	99	$95 \leq \alpha \leq 100$
2.36mm	74	$70 \leq \alpha \leq 79$
1.18mm	50	$46 \leq \alpha \leq 54$
600µm	34	$28 \leq \alpha \leq 36$
300µm	23	$19 \leq \alpha \leq 27$
150µm	15	$12 \leq \alpha \leq 18$
75µm	10	$8 \leq \alpha \leq 12$
Finer 75µm	9	

Chart



Comments
 N/A

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PHONE: (02) 6285 5314
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Report No: MAT:QFYS12/01067

Material Test Report

Client: COOMA RD QUARRY
 RMB 500 ROYALLA ROAD
 QUEANBEYAN NSW 2620

Project: COMPLIANCE TESTING

Sample Details

Sample ID: QFYS12/01067
 Client Sample ID:
 Date Sampled: 18/09/2012
 Date Received: 18/09/2012
 Source: COOMA RD QUARRY
 Material: DUST DOWNER EDI WORKS
 Specification: NCRQDEWDust - Dust Downer EDI Works (CRQ 007)
 Location: E69A
 Sampling Method: AS 1141.3.1 Clause 6.9.5 (Stockpile - loader)
 Sampled From: SALES STOCKPILE
 Lot No:
 Sampled By: James Stevens

Particle Size Distribution

Method:
 Drying by:
 Date Tested:

Sieve Size	% Passing	Limits
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Other Test Results

Description	Method	Result	Limits
Apparent Particle Density (t/m^3)	AS 1141.5	2.72	
Particle Density Dry (t/m^3)		2.64	
Particle Density SSD (t/m^3)		2.67	
Water Absorption (%)		1.1	

Chart

Comments

N/A



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Report No: MAT:QFYS12/00681

Material Test Report

Client: BUNGENDORE SAND PLANT
 TARAGO ROAD
 BUNGENDORE NSW 2621

Project: QUALITY CONTROL

Sample Details

Sample ID: QFYS12/00681
 Client Sample ID:
 Date Sampled: 06/06/2012
 Date Received: 06/06/2012
 Source: BUNGENDORE SAND PLANT
 Material: DOWNER EDI WORKS C/S
 Specification: NBUNDEWCS - Coarse Sand Downer Edi works (BSP005)
 Location: 2ADC
 Sampling Method: AS 1141.3.1 Clause 6.9.4 (Stockpile - sample tube)
 Sampled From: PRODUCTION; S/P 02A
 Lot No:
 Sampled By: James Stevens

Other Test Results

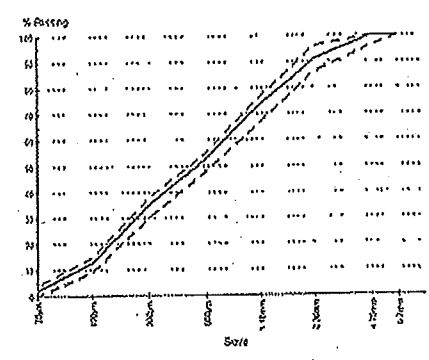
Description	Method	Result	Limits
Fineness Modulus		2.3	
Moisture Content (%)	AS 1289.2.1.1	12.3	
Clay and Fine Silt (%)	AS 1141.33	4	

Particle Size Distribution

Method: AS 1141.11.1, AS 1141.12
 Drying by: Hotplate
 Note: Sample Washed

Sieve Size	% Passing	Limits
6.7mm	100	≥100
4.75mm	100	96 ≤ x ≤ 100
2.36mm	91	86 ≤ x ≤ 96
1.18mm	74	67 ≤ x ≤ 77
600µm	53	48 ≤ x ≤ 55
300µm	35	30 ≤ x ≤ 38
150µm	13	9 ≤ x ≤ 15
75µm	2	0 ≤ x ≤ 4
Finer 75µm	2	

Chart



Comments
N/A

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PHONE: (02) 6285 5314
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Report No: MAT:QFYS12/01069

Material Test Report

Client: BUNGENDORE SAND PLANT
 TARAGO ROAD
 BUNGENDORE NSW 2621

Project: COMPLIANCE TESTING

Sample Details

Sample ID: QFYS12/01069
Client Sample ID:
Date Sampled: 18/09/2012
Date Received: 18/09/2012
Source: BUNGENDORE SAND PLANT
Material: DOWNER EDI WORKS C/S
Specification: NBUNDEWCS - Coarse Sand Downer Edi works (BSP005)
Location: 2AD
Sampling Method: AS 1141.3.1 Clause 6.9.4 (Stockpile - sample tube)
Sampled From: PRODUCTION; S/P 02A
Lot No:
Sampled By: James Stevens

Other Test Results

Description	Method	Result	Limits
Apparent Particle Density (t/m ³)	AS 1141.5	2.64	
Particle Density Dry (t/m ³)		2.61	
Particle Density SSD (t/m ³)		2.62	
Water Absorption (%)		0.5	

Particle Size Distribution

Method:
Drying by:
Date Tested:

Sieve Size	% Passing	Limits
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Chart

Comments

N/A