

# Conundrum Holdings Pty Ltd Product Specification

## McKenzie Creek Quarry 14/10mm Class GP Aggregate

**PRODUCT CODE:** 0805

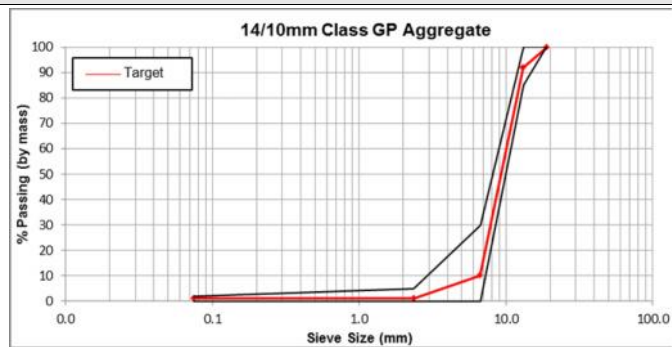
**SOURCE ROCK TYPE:** Quartzite

**CUSTOMER:** Standard Product

### Product Grading

AS1141.11 (washed)

Sieve Size AS (mm)	Limits of Grading (% Passing)	Limits of Deviation %	Target Grading (% Passing)
19.0	100	-	100
13.2	85 – 100	±10	92
6.70	0 – 30	±15	10
2.36	0 – 5	-	1
0.075	0 – 2	-	1



### Tests Carried Out For Product Quality Control Purposes

Sampling Method: AS1141.3.1

Test	Method	Frequency	Requirements	Reference
Unit Mass Density	AS1141.4	1 per 3 Years	N/A – For reference purposes only	N/A
Particle Density (Coarse Agg)	AS1141.6	1 per 3 Years	2.1t/m <sup>3</sup> , <3.2t/m <sup>3</sup>	AS2758.1.7.1
Particle Shape by Proportional Calliper	AS1141.14	1 per year	10% using 3:1 ratio	AS2758.1.8.3
Flakiness Index (FI)	AS1141.15	1 per 9,600t	35%	AS2758.1.8.3
Unsound stone count by visual assessment	AS1141.30 / RC372.01	1 per 4,800t	Unsound 5% Marginal + Unsound 10%	AS2758.1.9.3.4
Particle size distribution (Grading)	AS1141.11 (washed)	1 per 2,400t	See table above	AS2758.1.8.1.2

### Relevant Tests Carried Out On Source Rock

Test	Method	Frequency	Requirements	Reference
Los Angeles (LA) Value	AS1141.23	VicRoads Issue	30	AS2758.1.9.3.3
Alkali-Silica Reactivity (ASR) Value	RC376.03	VicRoads Issue	0.1%	VicRoads 610
Preparation of Reference Specimens	AS1141.30 Appendix A	VicRoads Issue	See below for sound and marginal classifications	VicRoads 801
Degradation Factor – Source Rock	AS1141.25.1	VicRoads Issue	Sound 40% Marginal 20-39%	VicRoads 801
Soundness by exposure to Sodium Sulphate	AS1141.24	VicRoads Issue	weighted average loss 6%	AS2758.1.9.3.3

Date issued: TBC

Previous issue date: 25 Aug 2016

Date of first issue: 4 Dec 2006

Issue number: 3

Max review interval: 5 years

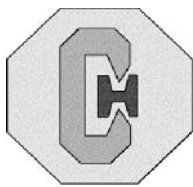
Authorised by: David Kerr

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Date printed: 24 May 2019

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Form: 2005.08



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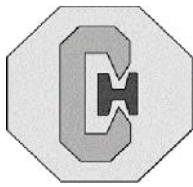
## McKenzie Creek Quarry 7mm Class SS Aggregate

**PRODUCT CODE:** 0815      **SOURCE ROCK TYPE:** Quartzite  
**CUSTOMER:** Standard Product

Product Grading AS1141.11 (washed)			
Sieve Size AS (mm)	Limits of Grading (% Passing)	Limits of Deviation %	Target Grading (% Passing)
9.50	100	-	100
6.70	85 – 100	±10	92
4.75	-	±10	50
2.36	0 – 20	±10	10
0.075	0 – 2	-	1

Tests Carried Out For Product Quality Control Purposes				
Sampling Method: AS1141.3.1				
Test	Method	Frequency	Requirements	Reference
Unit Mass Density	AS1141.4	On initial introduction of product	N/A – For reference purposes only	N/A
Unsound stone count by visual assessment	AS1141.30 / RC372.01	1 per 6 months	Unsound 5% Marginal + Unsound 10%	AS2758.1.9.3.4
Particle size distribution (Grading)	AS1141.11 (washed)	1 per 6 months	See table above	AS2758.1.8.1.2

Relevant Tests Carried Out On Source Rock				
Test	Method	Frequency	Requirements	Reference
Los Angeles (LA) Value	AS1141.23	VicRoads Issue	30	AS2758.1.9.3.3
Alkali-Silica Reactivity (ASR) Value	RC376.03	VicRoads Issue	0.1%	VicRoads 610
Preparation of Reference Specimens	AS1141.30 Appendix A	VicRoads Issue	See below for sound and marginal classifications	VicRoads 801
Degradation Factor – Source Rock	AS1141.25.1	VicRoads Issue	Sound 40% Marginal 20-39%	VicRoads 801
Soundness by exposure to Sodium Sulphate	AS1141.24	VicRoads Issue	weighted average loss 6%	AS2758.1.9.3.3



# Conundrum Holdings Pty Ltd Product Specification

## McKenzie Creek Quarry 40mm Class 3 Crushed Rock

**PRODUCT CODE:** 0819

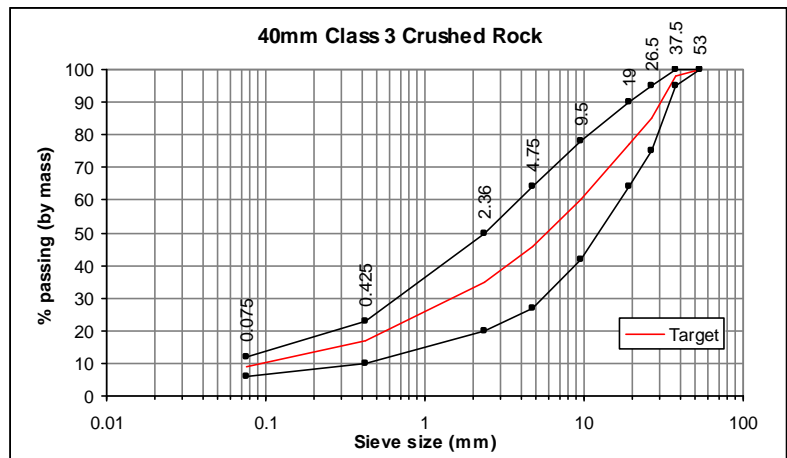
**SOURCE ROCK TYPE:** Quartzite

**CUSTOMER:** Standard Product

### Product Grading

AS1141.11 (washed)

Sieve Size AS (mm)	Limits of Grading (% Passing)	Target Grading (% Passing)
53.0	100	100
37.5	95 – 100	98
26.5	75 – 95	85
19.0	64 – 90	77
9.50	42 – 78	60
4.75	27 – 64	46
2.36	20 – 50	35
0.425	10 – 23	17
0.075	6 – 12	9



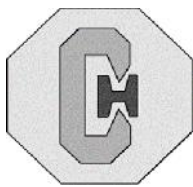
### Tests Carried Out For Product Quality Control Purposes

Sampling Method: AS1141.3.1

Test	Method	Frequency	Requirements	Reference
Unit Mass Density	AS1141.4	On initial introduction of product	N/A - For reference purposes only	N/A
Maximum Dry Density / Optimum Moisture Content	AS1289.5.2	As per customer requirements	N/A - For reference purposes only	N/A
Plastic Index (PI)	AS1289.3.3.1	As per customer requirements	0-10	VicRoads 812
Liquid Limit (as part of PI test)	AS1289.3.3.1	As per customer requirements	35%	VicRoads 812
Unsound stone count by visual assessment	AS1141.30 / RC372.01	As per customer requirements	Unsound 10% Marginal + Unsound 20%	VicRoads 812
Moisture Content (MC) – Dry Product	AS1289.2.1.6 (Hotplate method)	As per customer requirements	5%	VicRoads 812
MC – Wet Mixed (WM) or Cement Treated (CT) Product	AS1289.2.1.6 (Hotplate method)	As per customer requirements	-1.0% to +0.5% of MC nominated by customer	VicRoads 812
Particle size distribution (Grading)	AS1141.11 (washed)	As per customer requirements	See table and graph above	VicRoads 812

### Relevant Tests Carried Out On Source Rock

Test	Method	Frequency	Requirements	Reference
Los Angeles (LA) Value	AS1141.23	VicRoads Issue	35	VicRoads 801
Preparation of Reference Specimens	AS1141.30 Appendix A	VicRoads Issue	See below for sound and marginal classifications	VicRoads 801
Accelerated Soundness by Reflux	AS1141.29	VicRoads Issue	Sound 94% Marginal 90-93%	VicRoads 801
Secondary Mineral Content	AS1141.26	VicRoads Issue	Sound 25% Marginal 26-30%	VicRoads 801



# Conundrum Holdings Pty Ltd Product Specification

## McKenzie Creek Quarry 20mm Class 3 Crushed Rock

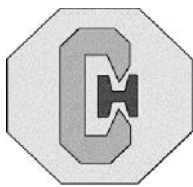
**PRODUCT CODE:** 0821      **SOURCE ROCK TYPE:** Quartzite  
**CUSTOMER:** Standard Product

Product Grading		
AS1141.11 (washed)		
Sieve Size AS (mm)	Limits of Grading (% Passing)	Target Grading (% Passing)
26.5	100	100
19.0	95 – 100	98
13.2	75 – 95	85
9.50	60 – 90	75
4.75	42 – 76	59
2.36	28 – 60	44
0.425	14 – 28	21
0.075	6 – 13	10

Tests Carried Out For Product Quality Control Purposes				
Sampling Method: AS1141.3.1				
Test	Method	Frequency	Requirements	Reference
Unit Mass Density	AS1141.4	1 per 3 Years	N/A - For reference purposes only	N/A
Maximum Dry Density / Optimum Moisture Content	AS1289.5.2	1 per Year	N/A - For reference purposes only	N/A
Plastic Index (PI)	AS1289.3.3.1	1 per 5,000t	0-10	VicRoads 812
Liquid Limit (as part of PI test)	AS1289.3.3.1	1 per 5,000t	35%	VicRoads 812
Permeability (Perm)	AS1289.6.7.1	As per customer requirements	$5 \times 10^{-8}$ m/sec	VicRoads 812
Unsound stone count by visual assessment	AS1141.30 / RC372.01	1 per 500t	Unsound 10% Marginal + Unsound 20%	VicRoads 812
Moisture Content (MC) – Dry Product	AS1289.2.1.6 (Hotplate method)	1 per 500t	5%	VicRoads 812
Particle size distribution (Grading)	AS1141.11 (washed)	1 per 500t	See table and graph above	VicRoads 812

Relevant Tests Carried Out On Source Rock				
Test	Method	Frequency	Requirements	Reference
Los Angeles (LA) Value	AS1141.23	VicRoads Issue	35	VicRoads 801
Preparation of Reference Specimens	AS1141.30 Appendix A	VicRoads Issue	See below for sound and marginal classifications	VicRoads 801
Degradation Factor – Source Rock	AS1141.25.1	VicRoads Issue	40% = Sound 20-39% = Marginal	VicRoads 801



# Conundrum Holdings Pty Ltd Product Specification

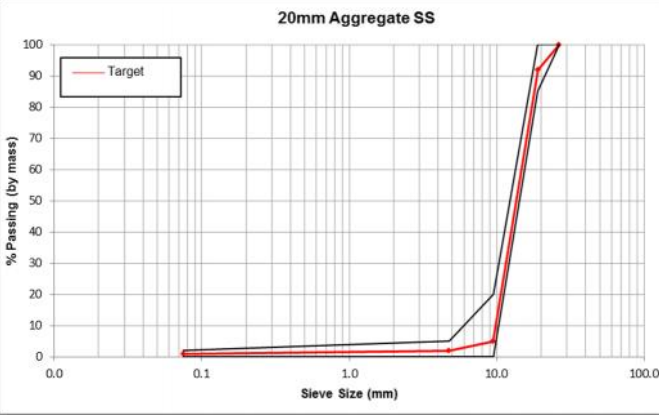
## McKenzie Creek Quarry 20mm Class SS Aggregate

**PRODUCT CODE:** 0845

**SOURCE ROCK TYPE:** Quartzite

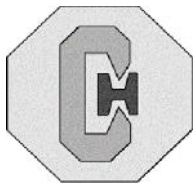
**CUSTOMER:** Standard Product

Product Grading			
AS1141.11 (washed)			
Sieve Size AS (mm)	Limits of Grading (% Passing)	Limits of Deviation %	Target Grading (% Passing)
26.5	100	-	100
19.0	85 – 100	±10	92
9.50	0 – 20	±10	5
4.75	0 – 5	-	2
0.075	0 – 2	-	1



Tests Carried Out For Product Quality Control Purposes				
Sampling Method: AS1141.3.1				
Test	Method	Frequency	Requirements	Reference
Unit Mass Density	AS1141.4	1 per 3 Years	N/A – For reference purposes only	N/A
Particle Density (Coarse Agg)	AS1141.6	1 per 3 Years	2.1t/m <sup>3</sup> , <3.2t/m <sup>3</sup>	AS2758.1.7.1
Particle Shape by Proportional Calliper	AS1141.14	1 per year	10% using 3:1 ratio	AS2758.1.8.3
Flakiness Index (FI)	AS1141.15	1 per 9,600t	35%	AS2758.1.8.3
Unsound stone count by visual assessment	AS1141.30 / RC372.01	1 per 4,800t	Unsound 5% Marginal + Unsound 10%	AS2758.1.9.3.4
Particle size distribution (Grading)	AS1141.11 (washed)	1 per 2,400t	See table above	AS2758.1.8.1.2

Relevant Tests Carried Out On Source Rock				
Test	Method	Frequency	Requirements	Reference
Los Angeles (LA) Value	AS1141.23	VicRoads Issue	30	AS2758.1.9.3.3
Alkali-Silica Reactivity (ASR) Value	RC376.03	VicRoads Issue	0.1%	VicRoads 610
Preparation of Reference Specimens	AS1141.30 Appendix A	VicRoads Issue	See below for sound and marginal classifications	VicRoads 801
Degradation Factor – Source Rock	AS1141.25.1	VicRoads Issue	Sound 40% Marginal 20-39%	VicRoads 801
Soundness by exposure to Sodium Sulphate	AS1141.24	VicRoads Issue	weighted average loss 6%	AS2758.1.9.3.3



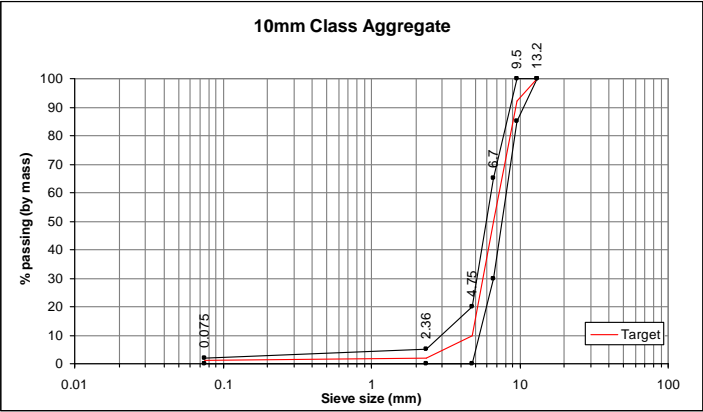
# Conundrum Holdings Pty Ltd Product Specification

## McKenzie Creek Quarry 10mm Class SS Aggregate

**PRODUCT CODE:** 0855      **SOURCE ROCK TYPE:** Quartzite

**CUSTOMER:** Standard Product

Product Grading			
AS1141.11 (washed)			
Sieve Size AS (mm)	Limits of Grading (% Passing)	Limits of Deviation %	Target Grading (% Passing)
13.2	100	-	100
9.50	85 – 100	±10	92
6.70	-	±10	50
4.75	0 – 20	±10	10
2.36	0 – 5	-	2
0.075	0 – 2	-	1



Tests Carried Out For Product Quality Control Purposes				
Sampling Method: AS1141.3.1				
Test	Method	Frequency	Requirements	Reference
Unit Mass Density	AS1141.4	On initial introduction of product	N/A – For reference purposes only	N/A
Particle Shape by Proportional Calliper	AS1141.14	1 per year	10% using 3:1 ratio	AS2758.1.8.3
Flakiness Index (FI)	AS1141.15	1 per year	35%	AS2758.1.8.3
Unsound stone count by visual assessment	AS1141.30 / RC372.01	1 per 6 months	Unsound 5% Marginal + Unsound 10%	AS2758.1.9.3.4
Particle size distribution (Grading)	AS1141.11 (washed)	1 per 6 months	See table above	AS2758.1.8.1.2

Relevant Tests Carried Out On Source Rock				
Test	Method	Frequency	Requirements	Reference
Los Angeles (LA) Value	AS1141.23	VicRoads Issue	30	AS2758.1.9.3.3
Alkali-Silica Reactivity (ASR) Value	RC376.03	VicRoads Issue	0.1%	VicRoads 610
Preparation of Reference Specimens	AS1141.30 Appendix A	VicRoads Issue	See below for sound and marginal classifications	VicRoads 801
Degradation Factor – Source Rock	AS1141.25.1	VicRoads Issue	Sound 40% Marginal 20-39%	VicRoads 801
Soundness by exposure to Sodium Sulphate	AS1141.24	VicRoads Issue	weighted average loss 6%	AS2758.1.9.3.3