Code of Practice

Registration of Crushed Rock Mixes

RC 500.02

June 2017

1. Introduction

This Code of Practice describes the process to be undertaken when registering any crushed rock mix (including cement treated crushed rock) for use in conjunction with relevant VicRoads Standard Specification for Roadworks and Bridgeworks (including Sections 812, 815 and 818).

A crushed rock is a material composed of graded coarse and fine aggregate components produced by the crushing, scalping and screening of a raw rock feed source, Newer Basalt Surface Spalls (NBSS) and/or crushed concrete, and may also be a blend of components which includes limited quantities of supplementary materials.

A crushed rock mix must be registered for any crushed rock product supplied to VicRoads funded works. This includes Class 1, 2, 3 and 4 crushed rock and manufactured Type A material.

The registration of a crushed rock mix will not be permitted, where it is intended that different source rock types be combined during the primary or secondary crushing processes.

Registration in accordance with this Code of Practice does not warrant the adequacy of the production, delivery, placement or compaction processes and does not guarantee the handling properties or performance of the crushed rock mix.

Submitted mixes must comply with the relevant physical properties in Section 3 and any other specified requirements applicable for that particular class of crushed rock, unless otherwise approved by VicRoads.

Registration of a crushed rock or crushed concrete mix does not guarantee the handling properties or performance of the mix nor relieve the Contractor/Supplier of any contractual obligations in regard to rectification of defects. Contractors/Suppliers are reminded that all specified requirements for the crushed rock or crushed concrete product must still be consistently met.

2. Definitions

2.1. Classes of Crushed Rock

Table 1A provides a description of the crushed rock classes that are covered by this Code of Practice.

Table 1A - Classes of Crushed Rock

Material	Description
Class 1	A premium cohesive pavement base material for unbound pavements where a very high standard of surface preparation for a sprayed sealed or thin asphalt surfacing is required. It has a minimum plasticity index requirement and can have an additional requirement for maximum permeability when used for heavy duty unbound pavements.
Class 2	A high quality pavement base material for unbound flexible pavements in locations where a very high standard of surface preparation may not be required. Class 2 crushed rock does not have a minimum plasticity index or a maximum permeability requirement. Recycled materials are permitted for Class 2 crushed rock.
Class 3	A high quality upper subbase material for heavy duty unbound flexible pavements. It may have a minimum permeability requirement to provide positive drainage to the sub-surface drains and overlying unbound pavement layer. Where specified, Class 3 may be used as base for lightly trafficked pavements provided the material produces sufficient cohesive fines during compaction. It is also commonly used with the addition of cement as a subbase layer in deep strength asphalt pavements. Recycled materials are permitted for Class 3 crushed rock.
Class 4	A lower subbase material for heavy duty unbound and/or bound pavements or a subbase for most other types of pavements. It may have a maximum permeability requirement. Recycled materials are permitted for Class 4 crushed rock.

2.2. Other Definitions

Assigned Los Angeles Value (LAV)

The assigned Los Angeles Value is a hardness rating derived from Los Angeles Value test results on representative crushed rock products during VicRoads accreditation process. The value is assigned to each source by VicRoads on an annual basis.

Cement Treated Crushed Rock (CTCR)

CTCR is a registered mixture of crushed rock, cement and water produced at a controlled mixing plant to close tolerances of grading, moisture content and binder content.

Coarse & Fine Aggregates

For the purposes of this Code, fine aggregate shall be the portion of the crushed rock mixture passing the 4.75 mm AS sieve, and coarse aggregates shall be the portion of the crushed rock mixture retained on the 4.75 mm AS sieve.

Crushed Brick

A recycled crushed brick is a material which principally consists of crushed fired brick, but may also contain crushed concrete, aggregate and concrete paste. Mud brick or non fired brick shall not be used.

Electric Arc Furnace (EAF) Slag

EAF slag is a recycled slag by-product from the production of steel using an electric arc furnace. Once cooled, the slag by-product is crushed, graded and suitably conditioned (by weathering to reduce free lime content) to produce a non expansive aggregate.

Glass Fines

Glass fines are recycled glass cullet crushed to a cubic shape and passing the 4.75 mm AS sieve.

Light Duty Base Pavement

Light duty base pavement is the layer directly beneath the bituminous surfacing on lightly trafficked roads (i.e. roads carrying < 3500 Average Annual Daily Traffic (AADT) and < 10% heavy vehicles).

Plant Mixed Wet Mix Crushed Rock (PMWMCR)

Plant mixed wet mix crushed rock is a mixture of crushed rock and water, produced at a controlled mixing plant to close tolerances of moisture content based on the modified Optimum Moisture Content (OMC) of the material.

Reclaimed Asphalt Pavement (RAP)

Reclaimed asphalt pavement is asphalt removed from an existing asphalt pavement, and re-processed by crushing and/or screening for recycling into new asphalt.

Recycled Material

Materials obtained from a construction and/or demolition site which are crushed and re-processed to produce a crushed rock or a supplementary material.

Supplementary Material

A durable material added to a crushed rock to improve its workability and physical properties. A recycled material may be used as a supplementary material.

3. Crushed Rock Mix

Crushed rock mixes nominated for use on VicRoads funded projects shall be registered and current prior to the commencement of the supply to any works.

Sources used in crushed rock mixes must conform to the applicable requirements in VicRoads Standard Section 801 - *Source Rock for the Production of Crushed Rock and Aggregates.*

Crushed rock mixes submitted for registration must comply with the applicable requirements of this Code (refer Section 3) and where relevant, any other requirements contained in VicRoads Standard Sections 801, 812, 815, and 204, unless otherwise approved by VicRoads.

Crushed rock mixes submitted using accredited quarry sources will be registered for all classes of crushed rock. Those mixes which contain appreciable recycled material components (including NBSS) will be registered only for Class 2 crushed rock or lesser products and conditions may apply.

Class 2 crushed rock containing recycled materials (> 10% in total) will be generally registered for light duty pavements only.

Any component of a crushed rock mix which is imported from either a different source or location within a quarry/recycling facility, or manufactured from a different sources to that of the primary coarse aggregate source will be regarded as a supplementary material.

Crushed rock products may contain crushed or appropriately processed supplementary materials (such as concrete, brick, recycled glass, RAP, EAF slag, clayey sand, clay filler, etc) provided the permitted maximum percentage (by mass) of supplementary material for that class of crushed rock and that registered mix is adhered to.

Components of crushed rock blends must individually comply with the relevant requirements of Section 3, prior to blending, unless otherwise approved by VicRoads.

Where an accredited quarry source produces a manufactured Type A material, the material produced shall meet the requirements for Type A material in VicRoads Standard Section 204 and any contract specific requirements.

> *Note: Any blend of recycled materials proposed for use as earthworks fill material on VicRoads contracts shall be registered to meet VicRoads Standard Section 204 requirements.*

All testing associated with crushed rock mixes, crushed rock products and crushed rock components shall be undertaken in accordance with the relevant test method(s) for the application as listed in VicRoads Codes of Practice (including RC 500.16 - *Selection of Test Methods for the Testing of Materials and Work)*, and any referenced VicRoads Standard Specification Sections and Test Methods as specified in VicRoads Standard Section 175 at the time of contract award.

In some cases, the registration of a crushed rock mix may only apply to a specific project or pavement construction application, e.g. where requirements, such as permeability, are specified.

A crushed rock mix can be registered with or without submitting permeability values. However, where a crushed rock mix is proposed for use on a VicRoads contract with specified permeability requirements, the Supplier will be required to submit test reports with conforming permeability values to VicRoads Technical Services.

VicRoads shall be notified promptly of any changes to the components of a registered mix. VicRoads will assess whether the registered mix can be amended or if the registration of a new mix will be required. No more than two amendments can be made to any particular mix design before that design is considered to be no longer valid.

4. Frequency of Testing

4.1. Default Testing

The frequency of testing of crushed rock products shall be in accordance with the requirements of VicRoads Standard Section 812, Clause 812.12 (Table 812.121) and VicRoads Standard Section 815, Clause 815.14 (Table 815.141).

Testing undertaken at this frequency for material which is shown to meet specification requirements is considered to have demonstrated that the specified physical properties of the registered crushed rock mix have been consistently met by the supplier.

4.2. Reduced Testing

The supplier may elect to halve the frequency of testing for specified tests in accordance with the above clauses, where 10 successive passes are achieved. If any subsequent test result fails, refer to VicRoads Standard Sections 812.12 or 815.14, as applicable for process requirements.

4.3. Further Reduced Testing

A supplier may apply for a further reduction in test frequency for “grading” and/or “unsound rock content” for a specific crushed rock mix to 1 test per 2,000 tonnes or part thereof if it can be demonstrated that the supplier can consistently produce within two thirds of the allowed “grading” and/or “unsound and marginal” range as specified in Tables 2, 3, 4, 5, 6 and 8 of this document. The application for this further reduction is to be submitted with the registration of the crushed rock mix, unless otherwise approved by VicRoads.

To demonstrate this process capability, the supplier must submit:

- a minimum of 50 consecutive results complying with the specification limits of Tables 2, 3, 4, 5, 6 and 8; and
- the most recent 25 consecutive results, all falling within two thirds of the allowed “grading” and “unsound” range as specified in Tables 2, 3, 4, 5, 6 and 8.

For gradings, the supplier shall nominate a range within two thirds of the allowed range for each sieve size, as demonstrated by the most recent 25 consecutive test results. The middle (average) of this nominated range need not be the middle of the allowed range as specified in Tables 2, 3, 4, 5, and 6, provided that:

- all results conform within the limits of these tables; and
- the averages of the test results for each specified sieve size consistently lie either towards the coarser or the finer limit of the specified grading envelope, i.e. do not vary from coarser to finer for different sieve sizes.

4.4. Departures from Limits

If any subsequent test result falls within the specification limits, but outside the nominated two thirds of the specified limits, this shall be considered a **minor departure.**

If any subsequent test result falls outside the specification limits, this shall be considered a **major departure.**

Table 1B outlines the actions to take if a minor or major departure occurs.

Table 1B – Actions to take in case of minor or major departures

Departure	Action	Result of Retest	Resulting Test Frequency
Minor	Retest	Pass	Continue
		Minor Departure	Revert to 1 test per 1000 tonnes #
		Major Departure	Revert to 1 test per 500 tonnes ##
Major	Retest	Pass	Continue
		Minor Departure	Revert to 1 test per 500 tonnes ##
		Major Departure	Revert to 1 test per 500 tonnes ##

\# the supplier shall not return to one test per 2,000 tonnes until a further 25 successive test results fall within the nominated two thirds of the allowed range

the supplier shall not return to one test per 1,000 tonnes until a further ten successive test results comply with the specified requirements

5. Grading of Uncompacted Crushed Rock & PMWMCR

After completion of production, but before compaction, Class 1, 2, 3 and 4 crushed rock products and PMWMCR must comply with the relevant grading requirements of Tables 2, 3, 4, 5 and 6 corresponding to the assigned LAV of the material source.

5.1. Class 1 and 2 Crushed Rock

The grading of 20 mm Class 1 and Class 2 crushed rock with an assigned Los Angeles Value ≤ 25 shall comply with the requirements of Table 2, and all other sources with LAV ≥ 26 shall comply with Table 3.

Table 2 – Grading Limits for 20 mm Class 1 or 2 CR for sources with a LAV ≤ 25

Sieve Size AS (mm)	Test Value before Compaction	
	Limits of Grading (% Passing by Mass)	Retained between Sieves (% by Mass)
26.5	100	
19.0	95 - 100	0 - 5
13.2	78 – 92	7 – 18
9.5	63 – 83	10 – 16
4.75	44 – 64	14 – 24
2.36	30 – 48	10 – 20
0.425	14 - 22	14 – 28
0.075	7 – 11	6 - 13

Table 3 – Grading Limits for 20 mm Class 1 or 2 CR for sources with a LAV ≥ 26

Sieve Size AS (mm)	Test Value before Compaction	
	Limits of Grading (% Passing by Mass)	Retained between Sieves (% by Mass)
26.5	100	
19.0	95 - 100	0 - 5
13.2	78 – 92	7 – 18
9.5	63 – 83	10 – 16
4.75	44 – 64	14 – 24
2.36	29 – 48	10 – 20
0.425	13 - 21	15 – 29
0.075	5 – 9	7 - 14

5.2. Class 3 Crushed Rock

The grading of 20 mm Class 3 crushed rock shall comply with Table 4.

Table 4 – Grading Limits for 20 mm Class 3 CR

Sieve Size AS (mm)	Test Value before Compaction – Limits of Grading (% Passing by mass)	
	LAV ≤ 25	LAV ≥ 26
26.5	100	100
19.0	95 – 100	95 – 100
13.2	75 – 95	75 – 95
9.5	60 – 90	60 – 90
4.75	42 – 76	42 – 76
2.36	28 – 60	28 – 60
0.425	14 – 28	10 – 28
0.075	6 – 13	2 - 10

The grading of 40 mm Class 3 crushed rock shall comply with Table 5.

Table 5 – Grading Limits for 40 mm Class 3 CR

Sieve Size AS (mm)	Test Value before Compaction – Limits of Grading (% Passing by mass)	
	LAV ≤ 25	LAV ≥ 26
53.0	100	100
37.5	95 – 100	95 - 100
26.5	75 – 95	75 – 95
19.0	64 - 90	64 - 90
9.5	42 - 78	42 - 78
4.75	28 – 64	28 – 64
2.36	20 – 50	20 – 50
0.425	10 – 23	7 – 23
0.075	6 – 12	2 - 9

5.3. Class 4 Crushed Rock

Class 4 crushed rock of nominal size differing from that specified may be accepted for registration provided it meets the grading requirements of Table 6 corresponding to a nominal size adjacent to that specified.

Table 6 – Grading Limits for Class 4 CR

Sieve Size AS (mm)	Test Value before Compaction – Limits of Grading (% Passing by mass)				
	Nominal Size (mm)				
	40	30	25	20	14
75.0					
53.0	100				
37.5		100	100		
26.5				100	
19.0	64-90				100
9.5		48-70	54-75		
4.75				42-76	54-75
2.36					
0.425	7-23	9-24	10-26	10-28	15-32
0.075	2-12	2-12	2-13	2-14	6-17

6. Physical Property Requirements of Class 1, 2, 3 & 4 Crushed Rock

The registered crushed rock mix shall comply with the physical property requirements listed in Table 7, where applicable, for that class of crushed rock.

Additional testing of the crushed rock mix may also be specified as part of the conditions for registration of the submitted crushed rock mix.

These typical physical properties include Liquid Limit, Plasticity Index, California Bearing Ratio (CBR) and Flakiness Index as per Table 7.

Table 7 – Crushed Rock Requirements

Test	Test Value			
	Class 1	Class 2	Class 3	Class 4
Liquid Limit % (max)	30	30	35	40
Plasticity Index (range)	2 - 6 (1)	0 - 6	0 - 10	0 - 20
California Bearing Ratio (%) (min) (3)	-	100 (2)	80 (2)	20
Flakiness Index (%) (max)	35	35	-	-
PI x % passing 0.425 mm sieve (max)	-	-	-	450
Maximum Percentage of Supplementary Materials permitted (4)	5%	10%	15%	50%

Notes:

(1) Unless otherwise advised as a part of the Crushed Rock mix design registration process, the Plasticity Index shall be targeted to the lower end of the range.

(2) Value applicable to Crushed Rock containing crushed concrete.

(3) Value applicable to material passing 19.0 mm sieve: initially at optimum moisture content and 98% of maximum dry density as determined by test using Modified compactive effort, but then soaked for four days prior to the CBR test. (Refer AS1289.6.1.1)

(4) Maximum permitted clay filler ≤ 2.0% of total dry mass, however a higher % of supplementary materials may be permitted in a specific crushed rock mix.

7. Unsound Rock & Foreign Materials Content

(a) Unsound rock and marginal rock in that fraction of the crushed rock product retained on a 4.75 mm AS sieve shall not exceed the percentages specified in Table 8.

Table 8 - Unsound and Marginal Rock Content

Class	Total of Marginal and Unsound Rock % (max)	Unsound Rock % (max)
1	10	5
2	10	7
3	20	10
4	N/A	N/A

(b) Foreign materials in that fraction of the crushed rock product retained on a 4.75 mm sieve shall not exceed the percentages by mass specified in Table 9.

Table 9 – Foreign Material Content

Foreign Material Type	Class 2	Class 3	Class 4
	Allowable % (max)		
High density materials such as metal, brick (1), ceramic whiteware, masonry materials, glass(1) and RAP(1)	2	3	5
Low density materials such as plastic, rubber, plaster, clay lumps and other friable material	0.5	1	3
Wood and other vegetable or decomposable matter	0.1	0.2	0.5

(1) Higher percentages of crushed brick, glass, and/or RAP may be permitted as a supplementary material in a registered crushed rock mix.

(c) Blended Crushed Rock - where a Crushed Rock is a blend of crushed rock and crushed concrete, both of the above tests shall be undertaken on the individual components prior to blending.

Where a registered mix allows a higher percentage of crushed brick or glass fines to be used; the percentage of unsound rock or foreign materials is to be determined on the total dry mass of the test sample, and exclude the brick and glass components.

8. Supplementary Materials

Supplementary materials may be included into a crushed rock mix to improve its workability and physical properties. Supplementary materials must be durable and not subject to appreciable breakdown.

Where supplementary materials are included as a component in a crushed rock mix, the maximum limits set out in Table 7 shall apply, unless otherwise approved by VicRoads. A higher percentage of supplementary materials may be permitted as a part of a registered crushed rock mix.

Clayey sands and clay filler used as supplementary materials must comply with the requirements of Table 10.

Table 10 – Grading & Other Requirements for Clayey Sand and Clay Filler

Sieve Size AS (mm)	Supplementary Material	
	Clayey Sand (% Passing by Mass)	Clay Filler (% Passing by Mass)
9.5	100	100
4.75	90 - 100	100
2.36	75 - 95	95 - 100
0.425	45 – 65	70 - 100
0.075	30 – 50	50 - 100
Plasticity Index	10 – 20	30 - 55
Emerson Class No.	N/A	>6

The amount of any clay filler added must not exceed 2% of the total dry mass of the crushed rock product.

Glass fines are recycled glass cullet crushed to a cubic shape and passing the 4.75 mm AS sieve. Glass cullet shall be primarily container glass and shall not include glass from ceramics, cathode ray tubes, fluorescent light fittings and laboratory glassware. Glass fines shall:

- be cubical in shape, not sharp edged or elongated
- be generally free of contaminants such as paper, corks, metals, and other harmful materials (maximum limit of 2% by mass)

Recycled crushed products which contain higher percentages of crushed brick and glass than those specified in Table 9 shall have a wet strength not less than 100 kN and a wet/dry strength variation not greater than 45 when tested in accordance with AS 1141.22.

9. Cement Treated Crushed Rock

Registration of mixes will require the applicable requirements of the Code to be met prior to the addition of any binder.

The submission of cement treated crushed rock mixes containing supplementary materials such as crushed brick and glass fines shall be limited to light duty pavements only.

10. Mix Registration

Applications to register a crushed rock mix shall be submitted by the Supplier to VicRoads (Technical Services, 12 Lakeside Drive Burwood East) at least two weeks prior to the proposed date for the commencement of supply of the mix and shall be accompanied by the information listed in Clause 6 - Submission of Mix for Registration.

The Supplier shall nominate a mix identification number for each mix and this number shall be used to identify the mix for all future job records and communications.

Registered crushed rock mixes nominated for use on VicRoads funded projects shall appear on the VicRoads Crushed Rock

Mixes database current at the time of the commencement of the supply of the mix to the project.

The registration of the crushed rock mix shall remain current for a period of two years subject to there being no changes to the source or grading of the aggregate components or the source or nature of any supplementary material. Registration can be extended beyond two years with the agreement of VicRoads Technical Services.

New crushed rock mixes shall be submitted for registration where it is proposed to change the source, grading or nature of the components; and current registered crushed rock mixes are more than two years old.

The Supplier will be advised in writing of the result of the application to register a crushed rock mix and any conditions attached to the registration.

If a registered mix has unsatisfactory handling or field performance, the Supplier or Contractor using the product may request VicRoads to withdraw the mix. Alternatively, VicRoads may withdraw the mix pending a review of its field performance and immediately advise the Contractor of action taken.

11. Mix Status

All crushed rock mixes registered with VicRoads are issued a status according to compliance as:

General
A crushed rock mix which fully complies with the requirements of this Code of Practice.

Conditional
A crushed rock mix which does not comply in all respects with the requirements of this Code of Practice, but is considered appropriate for use subject to conditions attached to the registration.

Expired
A crushed rock mix that has passed its expiry date or a mix that has not been re-registered.

Withdrawn
A crushed rock mix that has been withdrawn from use due to unsatisfactory field performance, but whose details are retained for record purposes.

12. Submission of Mix for Registration

12.1. Compliance Requirements

All components of the crushed rock mix shall comply with the relevant requirements of the Code and where applicable the requirements VicRoads Standard Specification Sections.

Section 801 - Source Requirements for Crushed Rock and Aggregates.

Section 812 - Production of Crushed Rock for Pavement Base and Subbase.

Section 815 - Production of Cementitious Treated Crushed Rock for Pavement Subbase.

Section 818 - Crushed Scoria for Pavement Base and Subbase.

The required tests and the testing frequency for supplementary materials incorporated in any crushed rock mix shall be as specified in the individual registered crushed rock mix.

12.2. Information Required

The following information shall be submitted for each new crushed rock mix (The Supplier may use Appendix A to provide a guide to the information to be submitted):

1. Supplier Identification;
2. Crushed Rock Class;
3. Supplier's crushed rock mix number;
4. Proposed date of commencement of supply if applicable;
5. Components proposed and source of each component including supplementary materials;
6. Assigned Los Angeles Value (Hardness) of source rocks from which components are to be supplied;
7. Proportion of each component in the mix;
8. Unsound and marginal rock content and/or foreign materials content of the coarse aggregate components;
9. Grading and Plasticity Index of the combined mix;
10. CBR values for the proposed mix where applicable;
11. Binder type, target binder content and Unconfined Compressive Strength results for cement treated crushed rock mixes;
12. Flakiness Index of coarse aggregate fraction of 10mm and above;
13. For crushed river gravels, the proportion of crushed particles in coarse aggregate;
14. Degradation Factor and Plasticity Index for crusher fines components;
15. Grading and Plasticity Index of any supplementary material component;
16. Where specified, the permeability of the mix;
17. Maximum Dry Density and Optimum Moisture Content of crushed rock product using the combined mix and modified compactive effort; and
18. Post compaction grading and PI results, if applicable.

All test results shall be current (not more than 3 months old) at the time of submission of the crushed rock mix.

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VicRoads Code of Practice - Revision Summary

RC 500.02 - Registration of Crushed Rock Mixes

Date	Clause	Description of Revision	Authorised by
June 2017	4	Clause added detailing conditions for further reduced testing frequency	Principal Advisor – Pavements, Geotech. & Materials
July 2016	Full Document 1 2 3, 4, 5, 6, 7, 8	Full revision and addition of requirements from Sections 812 and 815, which have had corresponding text removed, and from Sections 820 and 821 which are to be discontinued. Revised to reflect changes Added relevant definitions Added requirements for Classes 1, 2, 3, 4 crushed rock.	Principal Advisor – Pavements, Geotech. & Materials
December 2012	Full document 2.1 6.1 & Appendix A	Re-styled with minor corrections made Added Class 4 and descriptive text Added Appendix A (informative)	Principal Advisor – Pavements and Materials
July 2009	Full document	Initial Release	

Appendix A - Crushed Rock Mix Registration Form (informative)

vicroads	CRUSHED ROCK MIX REGISTRATION FORM *Complete one form sheet for every product to be registered*

SUPPLIER DETAILS	
Supplier Name & Date Submitted (e.g. XY Resources P/L)	
Quarry / Site Location	
Product to be Registered (e.g. 20mm Cl3 CR)	
Crushed Rock Mix Number (your reference number to identify this product)	
Name of Person Completing Form	
Contact Phone No.	
Contact Email Address	

CRUSHED ROCK DETAILS#	
Optimum Moisture Content & Maximum Dry Density	Test Report Attached? Yes ☐ No ☐
Proposed Target Grading*	Test Reports Attached? Yes ☐ No ☐
Proposed Target Plasticity Index (PI)*	Test Reports Attached? Yes ☐ No ☐
Degradation Factor Crusher Fines (if applicable)	Test Report Attached? Yes ☐ No ☐
Class 1 / Class 2 Flakiness Index	Test Report Attached? Yes ☐ No ☐
Unsound and Marginal Rock Content and/ or Foreign Materials* as applicable.	Test Reports Attached? Yes ☐ No ☐
CBR Strength Values (if specified / applicable)	Test Report Attached? Yes ☐ No ☐
Permeability (if specified / applicable)	Test Report Attached? Yes ☐ No ☐
Proposed Binder Type and Binder Content for CTCR (if specified / applicable)	Test Report Attached? Yes ☐ No ☐
Unconfined Compressive Strength @ 7days (if specified / applicable)	Test Report Attached? Yes ☐ No ☐

SUPPLEMENTARY MATERIALS	
Are any supplementary materials added?	Yes ☐ No ☐
If yes, please supply proposed percentage and description of any supplementary materials	
Supplementary Material Grading	Test Report Attached? Yes ☐ No ☐
Supplementary Material PI	Test Report Attached? Yes ☐ No ☐
Wet & Dry Strength Variation on Final Product (if applicable)	Test Report Attached? Yes ☐ No ☐

*These should be realistic targets for production. Attach available test reports as supporting evidence.
Test results must be less than 3 months old at the time of submission