

***COFFS HARBOUR CITY COUNCIL***



**DEVELOPMENT SPECIFICATION  
DESIGN**

***1113 Stabilisation***

***Version 1      01 January 2009***

<b>1113 STABILISATION</b>
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## 1 SCOPE AND GENERAL

### 1.1 SCOPE

This worksection defines the materials requirements for stabilised materials provided by stationary plant production as well as materials and process requirements for in-situ stabilisation.

The work to be executed under this worksection consists of the supply and incorporation of stabilising binders with material in a nominated pavement course or subgrade layer (including materials for the selected material zone and selected backfill) at specified locations in the work and the spreading, compaction, trimming and curing of such materials.

This worksection provides the requirements for stabilisation of the types of pavement courses and subgrade zones or layers as shown in Table 1.1.

The pavement course or subgrade zone or layer to be stabilised shall be as specified in 1141 *Flexible pavements*.

**Table 1.1 Types of pavement courses, subgrade zones or layers and stabilising binder**

Pavement course or subgrade zone or layer	Stabilising binder
<b>Pavement course</b>	
Base and subbase	Cement Blended Stabilising Agent Hydrated Lime (pugmill) Quicklime (in-situ)
<b>Subgrade zone or layer</b>	
Selected Material Zone	Cement Blended Stabilising Agent Quicklime (in-situ) Hydrated Lime (pugmill)
Other Subgrade Layers	Cement Blended Stabilising Agent Quicklime (in-situ) Hydrated Lime (pugmill)
Selected Backfill Zone	Cement Hydrated Lime (pugmill)

### 1.2 QUALITY

Requirements for quality control and testing, including maximum lot sizes and minimum test frequencies, are given in 0161 *Quality (Construction)*.

### 1.3 CONTROL OF TRAFFIC

#### General

The Contractor shall provide for traffic in accordance with 1101 *Control of traffic* while undertaking the work and shall take all necessary precautions to protect the work from damage until such time as the new work has developed sufficient strength to carry normal traffic without damage.

#### Minimise traffic delays

The Contractor shall take all necessary steps to avoid or minimise delays and inconvenience to road users during the course of the work. Where adequate detours or side tracks are included in the contract or are otherwise available, traffic shall be temporarily diverted while the work is in progress.

### 1.4 REFERENCED DOCUMENTS

The following documents referred to in this worksection shall be deemed as the latest edition of the Australian Standards, including amendments and supplements. **Worksections**

0161 Quality (Construction)

1101 Control of traffic

1112 Earthworks (Roadways)

1141 Flexible pavements

1351 Stormwater drainage (Construction)

#### Standards

AS 1141	Methods for sampling and testing aggregates
AS 1141.11	Particle size distribution by sieving
AS 1289	Methods of testing soils for engineering purposes
AS 1289.4.2.1	Soil chemical tests—Determination of the sulfate content of a natural soil and the sulfate content of the groundwater—Normal method
AS 1289.5.7.1	Soil compaction and density tests—Compaction control test—Hilf density ratio and Hilf moisture variation (rapid method)
AS 1289.5.8.1	Soil compaction and density tests—Determination of field density and field moisture content of a soil using a nuclear surface moisture-density gauge—Direct transmission mode
AS 1289.6.1.1	Soil strength and consolidation tests—Determination of the California Bearing Ratio of a soil—Standard laboratory method for a remoulded specimen
AS 2350	Methods of testing Portland and blended cements
AS 2350.9	Determination of residue on the 45 µm sieve
AS 3582	Supplementary cementitious materials for use with portland and blended cement
AS 3582.1	Fly ash
AS 3582.2	Slag—Ground granulated iron blast-furnace
AS 3583	Methods of test for supplementary cementitious materials for use with portland cement
AS 3583.3	Determination of loss on ignition
AS 3583.6	Determination of relative water requirement and relative strength
AS 3583.12	Determination of available alkali
AS 3583.13	Determination of chloride ion content
AS 3583.14	Determination of insoluble residue content
AS 3972	Portland and blended cements
AS/NZS 2350	Methods of testing Portland and blended cements
AS/NZS 2350.4	Setting time of Portland and blended cements

#### Other publication

NSW RTA Test Methods T432 Rate of slaking of quicklime

## 2 INSPECTION, SAMPLING AND TESTING

### 2.1 MATERIALS PROPOSED FOR USE IN THE WORK

The Contractor shall provide a certificate from a laboratory with appropriate NATA registration stating that the stabilisation mix(s) submitted and the mix constituents comply with the mix nominated in Annexure A, and that the stabilised material meets the requirements of *1141 Flexible pavements* if incorporated into the works as a pavement layer or, alternatively, *1112 Earthworks (Roadways)* or *1351 Stormwater drainage*.

### 2.2 MATERIALS USED IN THE WORK

Regular inspection, sampling and testing of pavement and subgrade materials shall be undertaken by the Contractor while stabilisation is in progress in accordance with this worksection.

### 3 MATERIALS

#### 3.1 CEMENT

##### Type

The type of cement used as the stabilising agent or a constituent in a blended stabilising agent shall comply with AS 3972.

##### NSW QA scheme

Cement shall be from a source included in the New South Wales Government Quality Assurance Scheme at time of production.

##### Nominated brand and source

The Contractor shall nominate the brand and source of all cementitious materials.

##### Proof of quality

Documentary evidence of the quality and source of the cement shall be furnished by the Contractor to the Superintendent upon request at any time.

##### Storage in excess of 3 months

If the Contractor proposes to use cement which has been stored for a period in excess of three months from the time of manufacture, the Contractor shall arrange a re-test, to ensure the cement still complies with AS 3972, before the cement is used in the work.

The cost of retesting cement, which has been stored for a period in excess of three months, shall be borne by the Contractor.

Test results shall be forwarded to the Superintendent for approval at least 2 days in advance of usage of the material.

#### 3.2 QUICKLIME

##### Properties

Quicklime, consisting essentially of calcium oxide in a highly reactive form, shall have the following properties at the point of spread:

**Available lime** The content of calcium oxide, determined by AS 3583.12, shall not be less than 85 per cent.

**Slaking rate** The active slaking time shall not be greater than twenty minutes and the temperature rise on slaking, determined from the average of four samples tested in accordance with Test Method T432, shall not be less than 40 °C in six minutes.

##### Particle size

The particle size distribution of the quick lime determined by AS 1141.11 shall comply with the following requirements in Table 3.1.

**Table 3.1 Particle size distribution of quicklime**

AS Sieve	Per cent passing
13.2 mm	100
9.5 mm	96–100
4.75 mm	70–100
2.36 mm	0–90

#### 3.3 HYDRATED LIME

##### Properties

Hydrated lime, consisting essentially of calcium hydroxide, whether used as the sole stabilising agent or blended with other additives, shall have the following properties:

- Available lime: The content of calcium hydroxide, determined by AS 3583.12, shall not be less than 80 per cent.
- Form: The material shall be in powder form.
- Residue on sieving (Particle Size): The residue on a 300 micron sieve, determined by AS 3583.14, shall not exceed 2 per cent.

The properties which characterise the particular hydrated lime to be used in the stabilising agent submitted as part of the mix design are:

- Percentage of calcium hydroxide
- Fineness—Percentage by mass passing the 45 micron sieve (AS 2350.9).
- Source.

### **3.4 GROUND GRANULATED BLAST FURNACE SLAG**

The ground granulated blast furnace slag shall conform to AS 3582.2.

The properties which characterise the particular ground blast furnace slag to be used in the stabilising agent submitted as part of the mix design are:

- Fineness—percentage by mass passing the 45 micron sieve (AS 2350.9).
- Relative strength (28 days) (AS 3583.6).
- Source.

### **3.5 FLYASH**

Flyash shall conform to AS 3582.1.

The properties which characterise the particular flyash to be used in the stabilising agent submitted as part of the mix design are:

- Fineness—percentage by mass passing the 45 micron sieve (AS 2350.9).
- Loss on ignition (AS 3583.3).
- Source.

### **3.6 BLENDED STABILISING AGENTS**

#### **Requirements**

The Contractor may utilise a blended stabilising agent.

The Contractor shall obtain mill and batch information which will make the blended stabilising agent traceable to the supplier's test results.

Handling and storage requirements of the Supplier shall be complied with by the Contractor who shall also arrange for sampling of the agent as required by the Superintendent.

The mass of components of the nominated blended stabilising agent shall not vary by more than  $\pm 3$  per cent from the blend percentages nominated in the mix design described in Annexure A.

#### **Properties**

When a blended stabilising agent is produced from a combined grinding of components the following properties will characterise the particular stabilising agent blend:

- Source of each component.
- Fineness—percentage by mass passing the 45 micron sieve (AS 2350.9).
- Setting time (AS 2350.4).

### **3.7 WATER**

Water shall be free from harmful amounts of materials such as oils, salts, acids, alkalis and vegetable substances. The water shall not contain more than:

- 600 parts per million of chloride ion, determined by AS 3583.13.
- 400 parts per million of sulphate ion, determined by AS 1289.4.2.1.
- 1 per cent by mass of undissolved solids.

Water accepted as potable and fit for human consumption will not require testing to confirm suitability.

## **4 STABILISATION PROCESSES**

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### **4.1 GENERAL**

#### **Proposed equipment and procedures**

The Contractor shall submit details of the proposed equipment (including the mixing plant) and stabilisation procedures to be used in the work 14 days prior to commencement of the work.

This submission, hereafter called the Work Plan, will nominate the sequence of operations, widths of stabilisation passes and provision for traffic if appropriate.

Submission of a Work Plan constitutes a HOLD POINT.

Superintendent's inspection of the Work Plan and approval is required to release the hold point.

#### **Specification and statutory requirements**

Notwithstanding submission to the Superintendent of the Contractor's equipment and stabilisation procedures, the work shall meet all the Worksection requirements and Statutory Requirements for Occupational Health and Safety and the Contractor shall perform such tests as specified as the work proceeds, to ensure compliance.

Costs of such tests shall be borne by the Contractor.

#### **Weather conditions**

Stabilisation of pavement materials shall not proceed during wet weather or if rain is imminent and likely to occur during any stage of the stabilisation process so as to significantly influence the resultant moisture content and uniformity of moisture content in the mix.

## **4.2 APPLICATION OF STABILISING AGENT**

### **Stationary mixing plant**

Application rate: Application rate of stabilising agent shall be monitored at the pug mill or equivalent plant utilised as approved by the Superintendent.

Measurement: Application rate measured in kilograms per tonne of product shall be monitored and recorded for every 100 tonnes of production. The achieved accuracy of application rate shall be  $\pm 10$  per cent of the rate nominated in Annexure A.

Excessive application: The application rate shall not be allowed to exceed the nominated rate by more than 10 per cent. The stabilising agent incorporated in excess of the nominated rate shall be at no cost to the Principal.

### **In-situ**

Application process: The incorporation of stabilising agent is to follow a process where stabilising agent is spread on the pavement in advance of the specialist mixing equipment.

Where special processes are proposed by the Contractor involving supply of stabilising agent within the mixing bowl of equipment, the approval of the Superintendent is required and a demonstration of the process at the Contractor's expense may be requested.

Spreading rate: Spreading shall be carried out using the mechanical spreader nominated in the Work Plan and subsequently approved by the Superintendent. Annexure A nominates the spread rate.

Tolerances: The actual spread rate shall be within  $\pm 10$  per cent of the nominated rate. The Contractor shall verify this by testing the spread rate for each lot or 500 m<sup>2</sup> of pavement treated (whichever is less) in each application of binder. Spread rate testing shall be performed by weighing the contents of a suitable 4 sided tray placed on the pavement and between the wheels of the mechanical spreader. The rate of stabilising agent spread shall be calculated by dividing the mass collected (kg) by the area of the tray (m<sup>2</sup>).

Load cells: Where spreading vehicles are fitted with load cells, the Contractor shall ascertain the average spreading rate of the stabilising agent by dividing the mass of the stabilising agent spread per run by the area of the run. The Contractor shall record this data for each run and make it available to the Superintendent promptly. Such action will not cancel the Contractor's obligation to undertake prescribed testing of spread rate if required by the Superintendent.

Over spread: The actual spread rate shall not exceed the nominated rate by more than 10 per cent.

The stabilising agent spread in excess of the nominated rate shall be at no cost to the Principal.

Wind: Spreading shall not proceed during windy conditions which may cause loss of stabilising agent or cause nuisance or danger to people or property.

Construction traffic: Traffic or equipment not involved in spreading or mixing of the stabilising agent shall not pass over the spread material until it has been mixed into the layer to be stabilised.

Spillage: Any spillage of the stabilising agent on site or at any loading location related to the site shall be removed as soon as possible and within the same work shift of such spillage.

### 4.3 MIXING

#### Stationary mixing plant

Equipment: The stationary mixing plant shall be purpose built for the process of mixing road making materials. All equipment shall be maintained and calibrated so as to provide a uniformly mixed product without segregation of the aggregate material.

Control of water: The plant shall provide for the controlled and metered inclusion of water into the mix.

Uniform mixture: The stationary mixing equipment shall incorporate a delivery system for mix materials capable of producing a uniform mixture to design requirements. This performance shall be confirmed by monitoring of unconfined compressive strength of production, in accordance with AS 1289.6.1.1, with a pair of test specimens tested for each 100 tonnes of production and at full cost to the Contractor.

#### In-situ

Equipment: Mixing equipment shall be purpose built for the process of in-situ mixing of road making materials. It shall be capable of mixing to the depth specified for the layer to be stabilised and of distributing the stabilising agent uniformly through the full depth and over the whole area of the layer to be stabilised. A minimum of 2 passes of the mixing equipment is required. As mixing blades or tynes wear they shall be replaced so as to maintain mixing efficiency consistent with that demonstrated during the trial section. The mixing equipment will be capable of supplying a calibrated amount of water to the mixing bowl in a such manner as to provide a uniformly moist mix to a target moisture content.

Uniform mixture: The resultant mix shall be uniform over the full depth so that there are no lenses, pockets, lumps or granules of stabilising agent present in the layer or adjacent to it.

The procedure nominated in the Work Plan shall minimise disturbance of the distribution of stabilising agent spread in advance of the mixing process. The Contractor shall carry out visual inspections during mixing to ensure uniform mixing is being achieved in the layer. Inspection results shall be recorded as cited in the worksection Part for Quality Requirements.

Additional mixing: The Superintendent may require that additional passes by the mixing equipment be carried out to improve the visual uniformity of the mix and/or the moisture content. Such additional work shall be carried out at no cost to the Principal.

### 4.4 FIELD WORKING PERIOD

#### Definition

The time period from addition of water during the mixing process until the completion of compaction is nominated as the Field Working Period. This period may vary significantly with variations in the type of stabilising agent.

#### Based on laboratory tests

The nominated Field Working Period shall be provided in Annexure 241A for the stabilising agent approved for the works. The Nominated Field Working Period shall be based on laboratory tests determining the time from mixing until such time as the calculated Wet Density for modified compaction procedures decreases by more than 2 percentage points.

This testing shall be undertaken utilising AS 1289.5.7.1 and samples of the materials representative of those to be utilised in the works.

#### Compaction within field working period

The Contractor will complete the compaction process within the Nominated Field Working Period unless specific approval is provided by the Superintendent to an adjustment for site and seasonal conditions.

### 4.5 TRIMMING AND COMPACTION

#### Level tolerance

After mixing the layer shall be trimmed and compacted in accordance with 1141 *Flexible pavements* to produce a tight dense surface parallel with the finished wearing surface so that the levels do not vary from the design levels beyond the tolerance for primary trimming specified in **Tolerances**.

#### Secondary trimming

Subsequent secondary trimming may be undertaken on one or more occasions in preparation for primer seal and with the objective of meeting shape and level requirements. Secondary trimming shall involve cutting to waste.

Work methods that lead to the development of laminations in the pavement will not be allowed and surface slurring will not be accepted.

The Contractor's survey control methods as stated in the Work Plan will be adequate to ensure that the pavement layer thickness is not reduced during secondary trimming to an extent such that it fails to comply with the requirement for layer thickness in accordance with the tolerance specified in

**Tolerances.**

When required by the Superintendent survey results shall be provided to confirm that the pavement layer thickness remains within tolerance after secondary trimming. This survey will be at no cost to the Principal.

**Trimmed material**

All trimmed material having been cut to waste shall be used as fill or spoiled as directed by the Superintendent. The material shall be owned by the Principal.

**Straight edge test**

Measurements with a 3 metre straight edge shall be taken at a minimum of 10 randomly selected stations so as to represent each 200 metre lane length or part thereof. Deviation of the surface from the bottom of a 3 metre straight edge placed in any direction will meet the tolerance shown in

**Tolerances.**

This testing will be undertaken immediately prior to sealing or prior to agreed practical completion for any work component.

**Compaction**

The stabilised layer shall be compacted over the entire area and depth so that the relative compaction determined by AS 1289.5.7.1 is not less than as detailed in *1141 Flexible pavements, 1112 Earthworks (Roadways)* or *1351 Stormwater drainage (Construction)*, as appropriate.

**Test method**

To provide true relative compaction assessments the lots shall be sampled and tested within the nominated field working period in accordance with AS 1289.5.7.1.

**Wet Density**

The maximum wet density (modified compaction) will be determined by sampling immediately after the determination of field density and testing will be undertaken within 2 hours of sampling.

A determination of maximum wet density (modified compaction) representing the full layer depth is required for each sampling location when calculation of relative compaction is undertaken.

**In-situ dry density**

The field density may be determined by in-situ sand replacement testing or by single probe Nuclear Density Meter in direct transmission mode in accordance with AS 1289.5.8.1.

## 4.6 JOINTS

**Joint type**

Joints are defined in this worksection to comprise interfaces between work episodes that are separated in time by more than the nominal field working period for the nominated stabilisation mix design.

A longitudinal joint shall be considered to be a joint generally parallel to the road centreline.

A transverse joint occurs when a length of work is terminated and extended at a later time after a period which exceeds the nominated field working period.

**Cutting back**

All longitudinal and transverse joints shall be formed by cutting back into the previously stabilised and fully compacted sections.

A minimum longitudinal overlap of mixing runs shall be 75 mm.

Transverse joints shall be overlapped by a minimum of 2 metres.

The material disturbed during cutting back shall be remixed at full depth and incorporated into the new work.

No longitudinal joints shall be allowed within 0.5 metre of the centreline of a typical wheelpath.

**Finish**

The level and shape of the joints shall be within the limits specified in **Tolerances.**



## 4.7 TOLERANCES

### Levels and surface trim

Primary trimming: The surface level after primary trimming shall be within a tolerance of +30 mm and +10 mm of the levels shown on the Drawings.

Secondary trimming: The surface level after secondary trimming shall be within a tolerance of +15 mm and -15 mm of the levels shown on the Drawings. The pavement surface after secondary trimming and immediately prior to sealing shall be of a quality such that deviation under a 3 metre straight edge does not exceed 12 mm.

### Layer thickness

Minimum thickness: The final thickness of the stabilised layer at any point shall be within a tolerance of +20 mm and -10 mm of the nominated layer thickness.

Average thickness: The average thickness of the layer in a lot shall be determined from measurements of six randomly selected locations over any 200 m length of a lot. The average thickness shall not be less than that required to meet the specified final thickness tolerances after trimming.

Method of measurement: The layer thickness shall be measured at the edges of the stabilising run before compaction commences. The layer thickness shall be measured relative to the finished design level.

### Width

Minimum width: The width measured at any point of the stabilised layer shall be not less than the specified width as shown in the Drawings by more than 50 mm.

Average width: The average width of the layer shall be determined from measurements at 3 sites selected at random by the Superintendent over any 200 m length of a lot and shall be not less than the specified width.

## 4.8 CURING

### Notice

The Contractor shall submit to the Superintendent details of the proposed method of curing as part of the Work Plan.

### Water curing

The stabilised work shall be protected against rapid drying out by keeping it continuously wet or damp during the period prior to the provision of a subsequent layer or the application of a prime or primer-seal. Water curing shall consist of frequent light uniform spraying that will not produce significant run off or flooding on sections of the area. Slurrying of the surface or leaching of the stabilising agent shall be avoided.

### Curing Period

Under this Worksection provision for curing up to the period indicated in Annexure A shall be the responsibility of the Contractor at cost to the Contractor

## 5 LIMITS AND TOLERANCES

The limits and tolerances applicable to the various clauses of this worksection are summarised in the table below:

**Table 5.1 Summary of Limits and Tolerances**

Activity	Limits/Tolerances	Worksection Clause reference
<b>Quicklime</b>		
- Available lime	>85% Calcium Oxide content	<b>Quicklime</b>
- Slaking rate	Active Slaking time < twenty minutes, and temperature rise on slaking not less than 40oC in six minutes (for an average of four samples).	<b>Quicklime</b>
- Particle distribution	Fraction passing AS Sieve:	<b>Quicklime</b>

Activity	Limits/Tolerances	Worksection Clause reference
	100% for 13.2 mm Sieve 96-100% for 9.5 mm Sieve 70-100% for 4.75 mm Sieve 0-90% for 2.36 mm Sieve	
<b>Hydrated lime</b> - Available lime - Particle size	>80% Calcium Hydroxide <2% residue on a 300 micron Sieve	<b>Hydrated lime</b> <b>Hydrated lime</b>
<b>Blended stabilising agents</b>	Blend percentages shall not vary by more than $\pm 3\%$ from those nominated in Annexure A	<b>Blended stabilising agents</b>
<b>Water</b> - Chloride ion content - Sulphate ion content - Undissolved solids	<600 PPM Chloride ion <400 PPM Sulphate ion <1 percent by mass of undissolved solids	<b>Water</b> <b>Water</b> <b>Water</b>
<b>Application of stabilising agent</b> - Spread rate or incorporation rate for in-situ plant.	Actual spread rate shall be within $\pm 10\%$ of the nominated rate	<b>Application of stabilising agent</b>
<b>Trimming and compaction</b> - Surface level - Layer thickness - Shape	After primary trimming be within +30 mm and +10 mm of levels shown on Drawings After secondary trimming be within $\pm 15$ mm of levels shown on Drawings Final thickness of layers shall not vary more than +20 mm and -10 mm of required thickness Shall not deviate more than 12 mm under a 3 m straight edge immediately prior to first sealing	<b>Trimming and compaction &amp; Tolerances</b> <b>Trimming and compaction &amp; Tolerances</b> <b>Trimming and compaction &amp; Tolerances</b>
<b>Joints</b> - Longitudinal overlap - Transverse overlap - Longitudinal joints	> 75 mm overlap of mixing runs > 2 m overlap of transverse joints Shall not be allowed within 0.5 m of the centreline of a typical wheelpath	<b>Joints</b> <b>Joints</b> <b>Joints</b>
<b>Width</b> - Width of stabilised layer	At any point, the width shall be not less than 50 mm short of the width shown on the Drawings with an average width always greater than that shown on the Drawings	<b>Tolerances</b>

## 6 MEASUREMENT AND PAYMENT

### 6.1 MEASUREMENT

Payment shall be made for the activities associated with completing the work detailed in this workstation for on-site stabilisation in accordance with Pay Items 1113.1 to 1113.2 inclusive.

Except that where stabilisation is provided by use of stationary plant the supply of the material including the stabilisation service and stabilising agent is measured and paid in accordance with *1141 Flexible pavements* or *1112 Earthworks (Roadways)*, as appropriate, for supply of the material as a pre-mix product. Supply in these circumstances includes all testing.

A lump sum price for any of these items shall not be accepted.

Supply, spread and compact subbase, or base material is measured and paid in accordance with *1141 Flexible pavements*.

Supply, spread and compact select material is measured and paid in accordance with *1112 Earthworks (Roadways)*.

Control of traffic is measured and paid in accordance with *1101 Control of traffic*.

If any item for which a quantity of work is listed in the Schedule of Rates has not been priced by the Contractor, it shall be understood that due allowance has been made in the prices of other items for the cost of the activity which has not been priced.

### 6.2 PAY ITEMS

#### 1113.1 Supply and spread stabilising agent (in situ mixing only)

The unit of measurement shall be the square metre.

The area shall be determined by the length and width of work as specified on the Drawings or as directed by the Superintendent.

No account shall be taken of allowable tolerances.

The schedule rate under this Pay Item shall include all the activities associated with the supply, delivery and spreading of the stabilising agent including testing in accordance with this worksection.

#### 1113.2 Mixing of stabilising agent

The unit of measurement shall be the square metre.

The area shall be determined by the length and width of work as specified on the Drawings or as directed by the Superintendent.

No account shall be taken of the allowable tolerances.

The schedule rate under this Pay Item shall include all the activities associated with the mixing of the stabilising agent with the designated materials in-situ and to the nominated depth in accordance with this worksection.

## 7 ANNEXURE A

### 7.1 STABILISATION MIX DESIGN

Type of stabilising agent .....

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Nominal percentage of stabilising agent by mass ..... %

Spread rate of stabilising agent for contractual purposes ..... (kg/m<sup>2</sup>)

Depth of compacted layer to be stabilised ..... (mm)

Nominated field working period ..... (hrs)

Nominated target unconfined compressive strength (UCS)  
(7 day accelerated curing) ..... MPa

Nominated target CBR value (4 day soaked) for stabilised  
modified subgrade ..... %

Period for contractor's curing ..... (days)

Nominated granular material(s) ..... (type)

Source of nominated granular material .....