

QUEENSLAND

CONSTRUCTION
SPECIFICATION

C242

FLEXIBLE PAVEMENTS

Amendment Record for this Specification Part

This Specification is Council's edition of the AUS-SPEC generic specification part and includes Council's primary amendments.

Details are provided below outlining the clauses amended from the Council edition of this AUS-SPEC Specification Part. The clause numbering and context of each clause are preserved. New clauses are added towards the rear of the specification part as special requirements clauses. Project specific additional script is shown in the specification as italic font.

The amendment code indicated below is 'A' for additional script 'M' for modification to script and 'O' for omission of script. An additional code 'P' is included when the amendment is project specific.

Amendment Sequence No.	Key Topic addressed in amendment	Clause No.	Amendment Code	Author Initials	Amendment Date
1	Reference to QDMR Standard Specification for Unbound Pavements	C242.03	A		Nov 02
2	Reference material by Type rather than by Traffic Category	C242.07	M		Nov 02
3	Pavement material to be as defined in Qld Main Roads Standard Specification MRS 11.05	C242.07 C242.08	M O/A		Nov 02
4	Lime modified base and subbase materials to comply with Qld Main Roads Standard Specification MRS 11.08 "Plant-Mixed Stabilised Pavements"	C242.09	O/A		Nov 02
5	Bound base and subbase materials to comply with Qld Main Roads Standard Specification MRS 11.08 "Plant-Mixed Stabilised Pavements"	C242.10	O/A		Nov 02
6	Moisture content of underlying pavement layers to comply with Qld Main Roads Standard Specification MRS 11.05	C242.14	M		Nov 02
7	"HOLD POINT" added	C242.18 C242.25	A		Nov 02
8	Base and subbase level tolerance increased from +10mm to +15mm	C242.22 C242.27	M		Nov 02
9	Include grading envelope in Material Types	C242.07	A	GH	May 07
10	Include requirement for minimum UCS for bound base and sub-base materials	C242.10	A	GH	May 07

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SPECIFICATION 242 : FLEXIBLE PAVEMENTS

GENERAL

C242.01 SCOPE

1. The work to be executed under this Specification consists of the supply, spreading, compaction and trimming of base and subbase courses of flexible and semi-rigid (bound) pavements to the specified levels and thicknesses as shown on the Drawings.
2. Requirements for quality control and testing, including maximum lot sizes and minimum test frequencies, are cited in the Specification Part for Quality Requirements.

Quality

C242.02 TERMINOLOGY

- (a) Materials designated as 'base' require the provision of a wearing surface comprising either a sprayed bituminous seal or asphalt up to 50mm thick.
- (b) Materials designated as 'subbase' require a covering course of 'base'. The subbase may consist of one or more layers.
- (c) A flexible pavement consists of a base and a subbase constructed of unbound materials. For the purpose of this Specification it also includes "semi-rigid" pavements.
- (d) A semi-rigid pavement is one where the base and/or the subbase are constructed of bound materials.
- (e) Bound material incorporates a binder to produce structural stiffness.
- (f) Modified material incorporates small amounts of stabilising binder to improve the properties of the material without significantly affecting structural stiffness.

Definitions

C242.03 REFERENCE DOCUMENTS

1. Documents referenced in this Specification are listed in full below whilst being cited in the text in the abbreviated form or code indicated.

**Documents
Standards Test
Methods**

(a) Council Specifications

- | | | |
|------|---|------------------------------|
| C241 | - | Stabilisation |
| C244 | - | Sprayed Bituminous Surfacing |

(b) Australian Standards

- | | | |
|---------------|---|--|
| AS 1141.14 | - | Particle shape, by proportional calliper. |
| AS 1141.22 | - | Wet/dry strength variation. |
| AS 1289.3.1.1 | - | Determination of the liquid limit of a soil - Four point Casagrande method. |
| AS 1289.3.3.1 | - | Calculation of the plasticity index of a soil. |
| AS 1289.3.6.1 | - | Determination of the particle size distribution of a soil - Standard method of analysis by sieving. |
| AS 1289.3.6.3 | - | Determination of the particle size distribution of a soil - Standard method of fine analysis using a hydrometer. |
| AS 1289.5.1.1 | - | Determination of the dry density/moisture content relation of a soil using standard compactive effort. |
| AS 1289.5.3.1 | - | Determination of the field density of a soil - Sand replacement method using a sand-cone pouring apparatus. |

- AS 1289.5.4.1 - Compaction control test - Dry density ratio, moisture variation and moisture ratio.
- AS 1289.5.8.1 - 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 - Determination of the California bearing ratio of a soil - Standard laboratory method for a remoulded specimen.

(c) QLD DMR Test Methods

- Q110C - Dry Density - Moisture Relationship of Cement Treated Material (standard compaction).
- Q115 - Unconfined Compressive Strength.
- Q701 - Benkelman Beam Deflection.

(d) NSW RTA Test Methods

- T114 - Maximum Dry Compressive Strength of Road Materials
- T171 - Modified Texas Triaxial Compression Test

(e) QLD DMR STANDARD SPECIFICATIONS

- MRS 11.05 - Unbound pavements

C242.04 PAVEMENT STRUCTURES

1. Flexible or semi-rigid pavement material types and layer thicknesses shall be as shown on the Drawings.

***Material Types
and Layer
Thickness***

C242.05 INSPECTION, SAMPLING AND TESTING

1. Inspection, sampling and testing of the pavement shall be undertaken by the Contractor in accordance with the requirements of this Specification before, during and after the construction of the pavement. Testing shall be carried out by a NATA registered laboratory with appropriate accreditation and suitably qualified personnel.

***Contractor's
Responsibility***

2. The Contractor shall provide the Superintendent with written notice when testing is being carried out and copies of all test reports for approval to proceed.

Written Notice

3. Field density tests shall be carried out in accordance with AS 1289.5.3.1, or, with the Superintendent's concurrence, with a Nuclear Density Meter in accordance with Clause C242.19.

Density Tests

MATERIALS**C242.06 GENERAL**

1. The Contractor shall submit details of all constituents of the proposed base and subbase materials, including sources of supply and the proposed type and proportion of any binder. These details shall be submitted to the Superintendent, supported with test results from a nominated NATA registered laboratory confirming that the constituents comply with the requirements of this Specification. If the proposed base or subbase is a bound material, the Contractor shall submit a completed Annexure C241A contained in the Specification for STABILISATION.

***Details of
Proposed
Base and
Subbase to be
Submitted***

- 2. No material shall be delivered until the Superintendent has approved the source of supply.

Source of Supply
- 3. If, after the Contractor's proposals have been approved, the Contractor wishes to make changes in any of the material constituents the Contractor shall inform the Superintendent in writing of the proposed changes. No delivery of material produced under the altered proposal shall take place without the approval of the Superintendent. The cost of testing associated with any altered proposal shall be borne by the Contractor.

Variations by Contractor

Contractor's Cost
- 4. At least fourteen days before placement of the material on site, the Contractor shall submit a Certificate from a laboratory with appropriate NATA registration demonstrating and stating that the unbound material or the mix and its constituents comply with the requirements of this Specification.

NATA Certificate
- 5. Ongoing testing of materials during delivery and construction shall be undertaken on samples taken from the site.

Sampling on-site

C242.07 MATERIAL TYPE

- 1. Pavement materials are specified in terms of the Material Type given in Table C242.1 for the calculated design traffic of the pavement.

Pavement Material Type
- 2. The Material Type (or Design Traffic) for the pavement materials shall be as shown on the Drawings.

Drawings

Pavement Material Type	Description
2.1(Base) Grading C or D	Roads with design traffic equal to or exceeding 10 ⁶ equivalent standard axle (ESA) repetitions.
2.2(Base) Grading C or D	Roads with design traffic less than 10 ⁶ ESAs.
2.3(SubBase) Grading C or D	Roads with design traffic equal to or exceeding 10 ⁶ .
2.4(SubBase) Grading C or D	Roads with design traffic less than 10 ⁶ ESAs.
2.5(Lower SubBase) Grading C or D	Roads with design traffic less than 10 ⁶ ESAs.

Table C242.1 - Pavement Material Types

(Note: All references to material type in Table C242.1 refer to types as defined within the Qld Main Roads Standard Specification MRS 11.05 "Unbound Pavements")

C242.08 UNBOUND BASE AND SUBBASE

C242.09 LIME MODIFIED BASE AND SUBBASE MATERIALS

- 1. Where the use of lime modified base and/or subbase materials is approved by the Superintendent, such approval shall apply, in the first instance, to plant mixed stabilised

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materials, prepared, delivered and incorporated within the Works in accordance with Qld Main Roads Standard Specification MRS 11.08 "Plant-Mixed Stabilised Pavements".

2. The lime treated material shall yield an unconfined compressive strength not exceeding 1.0 MPa, when tested in accordance with Test Method Q115 where sampling is undertaken within 24 hours of adding the lime and testing is after 7 days accelerated curing. **Unconfined Compressive Strength**

3. For DGB20 material, prior to being treated with lime, the material shall comply with the requirements of DGS20 in Table C242.4, except that the aggregate wet strength shall not be less than 80kN and the wet/dry strength variation shall not exceed 60 per cent. **DGB20**

4. For DGB20, the lime treated material shall yield a CBR value of not less than 100 when tested in accordance with AS 1289.6.1.1, where sampling is undertaken within 24 hours of adding the lime and testing is after 7 days of accelerated curing. **CBR Value**

C242.10 BOUND BASE AND SUBBASE MATERIALS

1. Where the use of cement or blended cement modified base and/or subbase materials is approved by the Superintendent, such approval shall apply, in the first instance, to plant mixed stabilised materials, prepared, delivered and incorporated within the Works in accordance with Qld Main Roads Standard Specification MRS 11.08 "Plant-Mixed Stabilised Pavements".

2. The unconfined compressive strength (UCS) of the material after 28 days curing as determined by Test Method Q115 shall be not less than 3.0 MPa for stabilised pavements and not less than 1.0MPa for modified pavements. Sampling and test specimen compaction of the material shall be undertaken within one hour of the incorporation of the stabilising agent.

DELIVERY, STOCKPILING AND PROCESSING OF PAVEMENT MATERIAL

C242.11 DELIVERY TO SITE

1. Materials shall be supplied sufficiently damp to avoid segregation and loss of fines during transit. **Damp Condition**

C242.12 STOCKPILING OF UNBOUND MATERIALS

1. Stockpile sites shall be located as shown on the Drawings or as approved by the Superintendent. **Stockpile Sites**

2. Stockpile sites, which shall be cleared of all vegetation and extraneous matter, shall be shaped to form a crown so as to be free draining and compacted over the whole area to provide a relative compaction, determined by AS 1289.5.4.1 for standard compactive effort, of not less than 95 per cent. **Compacted and Free Draining**

3. Stockpiles and stockpile sites shall be maintained so as to prevent the stockpiled materials from becoming intermixed or contaminated with foreign material. **Stockpile Requirements**

4. The total height of any stockpile shall not exceed 3m. **Height**

5. Stockpiles shall be of uniform shape with side slopes neither steeper than 1.5h to 1v nor flatter than 3h to 1v. **Shape**

6. The worked face of any stockpile shall be the full face of the stockpile. The stockpiled material shall be maintained at a moisture content sufficiently damp to avoid loss of fines.

***Maintained
Damp***

7. At the completion of the works, stockpile sites shall be cleared of all surplus material and left in a clean and tidy condition.

***Completion of
Work***

C242.13 DELIVERY OF MODIFIED OR BOUND MATERIALS

1. Modified or bound materials shall be delivered in vehicles fitted with covers of canvas or other suitable material to prevent loss of moisture during transport.

***Vehicle
Deliveries***

2. The time between mixing and conveyance by delivery trucks to the site, shall be such as to allow incorporation into the works including trimming and compaction within the nominated field working period.

Time Limit

3. Each truck load of bound material shall be identified by delivery dockets, indicating the time and date of mixing and registration or fleet number of the delivery truck, and such dockets shall be made available to the Superintendent at the point of delivery.

***Delivery
Dockets***

4. Bound materials shall comply with the requirements of the Specification for STABILISATION.

SPREADING OF PAVEMENT MATERIAL

C242.14 SPREADING PAVEMENT MATERIALS

1. Unbound materials shall not be spread upon an underlying pavement layer which has a moisture content exceeding the limits of MRS 11.05 Clause 9.1.2.1 or which has become rutted or mixed with foreign matter. The underlying layer shall be corrected to comply with this Specification before spreading of the next layer of pavement.

***Underlying
Layer Quality***

2. Where the underlying layer was constructed by the Contractor, or where the Contractor's activities caused the underlying layer constructed by others to become non-complying with this Specification, the cost of correcting the underlying layer to comply shall be borne by the Contractor.

***Contractor's
Costs***

3. Each layer of material shall be deposited and spread in a concurrent operation and, after compaction, the finished surface levels on the base and subbase courses shall be within the permitted tolerances stated in Clause C242.22(c) without subsequent addition of material. The thickness of each compacted layer shall be neither less than 100mm nor more than 200mm for all pavement layer types, unless otherwise approved by the Superintendent.

Tolerances

4. At all work boundaries in bound materials the Contractor shall provide vertical faces to provide for transverse and longitudinal joints.

Joints

5. When spread for compaction processes the moisture content of the base or subbase materials shall be in the range of 60-90 per cent of laboratory optimum moisture content in accordance with AS 1289.5.1.1.

6. Bound materials shall not be spread when the ambient air temperature in shade is either below 5°C or above 35°C.

TRIMMING AND COMPACTION

C242.15 GENERAL REQUIREMENTS

- | | |
|--|--|
| <p>1. Each layer of the base and subbase courses shall be uniformly compacted over its entire area and depth to satisfy the requirements of relative compaction set out in Clauses C242.19 and C242.20.</p> | <p>Uniform
Compaction</p> |
| <p>2. On sections of pavement with one-way crossfall, compaction shall begin at the low side of the pavement and progress to the high side. On crowned sections, compaction shall begin at the sides of the pavement and progress towards the crown. Each pass of the rollers shall be parallel with the centreline of the roadway and uniformly overlap each preceding pass. The outer metre of both sides of the pavement shall receive at least two more passes by the compaction plant than the remainder of the pavement.</p> | <p>Compaction
Procedure</p> |
| <p>3. At locations where it would be impracticable to use self propelled compaction plant, the pavement material shall be compacted by alternative hand-operated plant approved by the Superintendent.</p> | <p>Hand Operated
Plant</p> |
| <p>4. Watering and compaction plant shall not be allowed to stand on the pavement being compacted.</p> | <p>Plant
Movement
Restrictions</p> |
| <p>5. If any unstable areas develop during rolling, the unstable material shall be rejected. The rejected material shall be removed for the full depth of the layer, disposed of and replaced with fresh material in accordance with Clause C242.24. This operation will be at cost to the Contractor.</p> | <p>Unstable
Areas
Contractor's
Cost</p> |
| <p>6. The placement of subsequent layers shall not be allowed until the requisite testing has been completed and the test results for each layer have been accepted by the Superintendent.</p> | <p>Placing
Subsequent
Layers</p> |
| <p>7. Any unbound material in a layer that has attained the specified relative compaction but subsequently becomes wetted up shall be dried out and, if necessary, uniformly recompacted and trimmed to meet the specified density requirements and level tolerances.</p> | <p>Excessive
Moisture
Content</p> |

C242.16 CURING OF BOUND MATERIALS

- | | |
|--|---------------------------------------|
| <p>1. The curing of the surface layer of a lot shall commence after compaction is completed.</p> | <p>Commence-
ment Time</p> |
| <p>2. 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.</p> | <p>Water Curing</p> |
| <p>3. 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.</p> | <p>Caution</p> |

ACCEPTANCE OF COMPACTED LAYERS

C242.17 LOTS FOR ACCEPTANCE

1. Acceptance of work, as far as compaction is concerned, shall be based on density testing of the work in lots. A lot shall be nominated by the Contractor, but shall conform to the following:

**Lot
Requirements**

- (a) cover only a single layer of work which has been constructed under uniform conditions in a continuous operation and not crossing any transverse construction joints;
- (b) for unbound materials it may equal a day's output using the same material.

C242.18 COMPACTION ASSESSMENT

1. The Superintendent shall assess compaction for each lot based on random sampling of test locations for in-situ dry density testing.

**Density
Testing**

2. The Contractor shall arrange for testing to assess compaction on the basis of ten tests per 5000 sq m with a minimum of three (3) tests per lot, and present the results to the Superintendent for approval.

Sampling

HP

3. The cost of all testing for compaction assessment of any layer in an area of pavement shall be borne by the Contractor.

**Contractor's
Costs**

4. Alternatively, when agreed by the Principal and Council, acceptance of lots may be determined according to the elastic rebound deflection. The elastic rebound deflection shall be taken as the maximum deflection in accordance with Test Method Q701 utilising the Benkelman Beam or equivalent. The average maximum deflection for any lot shall not exceed 1.0mm, and the co-efficient of variation (CV) in recorded deflections shall not exceed 30 per cent. Measurements shall be taken at the rate of 4 per 1000 square metres, with a minimum of ten measurements per lot.

**Benkelman
Beam Testing**

C242.19 RELATIVE COMPACTION

1. The relative compaction of pavement material at each location tested for in-situ dry density shall be calculated in accordance with AS 1289.5.4.1 as follows:

Calculation

$$\text{Relative Compaction (per cent)} = \frac{\text{In-situ dry density}}{\text{Comparative dry density}} \times 100$$

NOTE: The comparative dry density shall be the maximum dry density determined in the laboratory.

2. The Council may approve some or all of the in-situ dry density testing to be carried out with a single probe Nuclear Density Meter in the direct transmission mode in accordance with AS 1289.5.8.1.

**In-Situ Dry
Density
Testing**

3. Each day that material is produced for placement in a layer or layers, a sample of the material shall be taken by the Contractor for maximum dry density testing to represent that day's production.

Daily Samples

4. For unbound layers, the sample shall be tested in accordance with AS 1289.5.1.1 to determine the maximum dry density (standard compactive effort) for the material.

**Maximum Dry
Density**

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5. For bound layers the sample shall be tested within two hours after the addition of stabilising agent to the mix in accordance with Test Method Q110C to determine the maximum dry density (standard compactive effort) for the material. This test method shall also be used to determine the standard optimum moisture content.

Time for Testing

6. The maximum dry density so determined shall be used as the comparative dry density in relative compaction calculations for all like material from that lot or day's production placed in a single layer of work whichever is the lesser.

Comparative Dry Density

C242.20 COMPACTION REQUIREMENTS AND ACCEPTANCE

1. A lot shall be accepted for compaction if:

- (a) The minimum value of all calculated relative compaction for standard compactive effort is not less than 100 per cent within the lot or the area of pavement being assessed.
- (b) In the case of bound layers an area of pavement presented for compaction assessment has within that area a zone or zones with relative compaction less than 100 per cent (standard compactive effort) but equal to or greater than 98 per cent may be accepted by the Superintendent provided such zone or zones shall not comprise more than 5 per cent of the area presented.
- (c) In the case of bound layers of target final depth in excess of 250mm, the top 150mm shall meet the requirements of paragraph 1(b) in this clause whilst the bottom 150mm shall have a relative compaction equal to or greater than 95 per cent.

2. Lots or areas of pavement not achieving these specified values shall be rejected. Unbound layers may be reworked as provided by Clause C242.21, but the bound materials in rejected layers/courses shall be removed and replaced with fresh materials in accordance with Clause C242.24.

Rejection of Lots

C242.21 REWORKING OF REJECTED UNBOUND LAYERS

1. Lots or areas of pavement that have been rejected in regard to compaction shall be reworked before resubmission for compaction assessment.

Reworking

2. Material that has become degraded, segregated or otherwise reduced in quality by reworking shall be rejected. The rejected material shall be removed, disposed of and replaced with fresh material complying with this Specification in accordance with Clause C242.24. When a lot or area of pavement is resubmitted for compaction assessment, testing shall be carried out in accordance with Clauses C242.18 and C242.19.

Rejected Material

3. All costs associated with corrective work carried out before the resubmission of a lot for compaction assessment, including rewatering, rerolling, removal and replacement of material as well as reworking shall be borne by the Contractor.

Contractor's Costs

C242.22 TOLERANCES

a) General

1. The tolerances stated are the acceptable limits of departure from the dimensions shown on the Drawings, which may occur during construction.

Tolerances

2. Areas for assessment of conformity with tolerance requirements shall be divided into lots and presented to the Superintendent together with survey reports covering line and level.

Lots for Assessment of Conformity

b) Width

1. At any cross section without kerb and/or guttering, and for pavement layers extending under the kerb and/or guttering, the horizontal dimension measured from the design centre line to the edge of the constructed pavement surface shall be neither less than 50mm less than the dimension nor more than 300 mm greater than the dimension shown on the Drawings.

Horizontal Dimensions

2. The average width of the layer determined from measurements at three sites selected at random by the Superintendent over any 200 metre road length, or part thereof, shall be not less than the specified width.

Average Width**c) Levels and Surface Trim**

1. The levels of the finished surface of the top of the unbound subbase course shall not vary from the design levels by more than ± 15 mm.

Subbase Surface Level

2. Level tolerances at the top of the unbound base course shall not exceed those stated above for subbase. In addition, where kerb and gutter exists or is being constructed, the level of the top of the base course adjacent to the kerb and gutter shall not vary by more than ± 5 mm from the lip level of the gutter minus the design thickness of the wearing surface.

Base Surface Level

3. The design level of the top of the subbase course shall be determined from the design level of the finished road surface less the thickness of the base course and the wearing course, including an allowance for any flush seal layer in the pavement design.

Subbase Design Level

4. The pavement surface after trimming and immediately prior to sealing shall be of a quality such that the deviation under a 3 metre straight edge placed in any direction does not exceed 12mm. Measurements for conformance shall be taken in accordance with the maximum lot size and minimum test frequencies in the Specification Part for Quality Requirements.

Straight Edge Deviation**C242.23 ACTION ON REJECTION****(a) Unbound Materials**

1. A lot that has not complied with the requirements for width or level tolerance as set out in Clauses C242.22(b) and C242.22(c) respectively shall be rejected except as otherwise provided in this Clause. Rejected lots shall be removed, disposed of and replaced with fresh material in accordance with Clause C242.24.

Rejection Criteria

2. Notwithstanding the above, where the rejected lot can be corrected by further trimming, the Superintendent may allow the surface to be corrected without complete removal and replacement with fresh material. Such trimming shall be undertaken in a manner that produces a uniform, hard surface and shall be achieved by cutting only without filling. After any such cutting, the level tolerances in Clause C242.22(c) shall apply.

Corrective Action

3. The cost of surface correction or replacement work ordered in accordance with this Clause including removal of material, disposal and supply and transport of replacement material, shall be borne by the Contractor.

Contractor's Costs**(b) Bound Materials**

1. An area of bound material that has not complied with the requirements for width or level tolerance as set out in Clauses C242.22(b) and C242.22(c) respectively shall be rejected except as otherwise provided for in this Clause. Rejected areas shall be removed, disposed of and replaced with fresh material in accordance with Clause C242.24.

Rejection Criteria

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2. The cost of removal and disposal of rejected material and its replacement with fresh material shall be borne by the Contractor. **Contractor's Costs**
3. Notwithstanding the above, the Superintendent may allow the Contractor to rectify the area in the following cases: **Corrective Action Circumstances**
- (i) Where the cause for rejection is under Clause C242.22(c), the course is a subbase course and rejection is due to departures from design level being too far below the design level, the Contractor may increase the thickness of the base course to make up such deficiency in thickness.
- (ii) Where the cause for rejection is under Clause C242.22(c), the course is a subbase course and rejection is due to departures from design level being too far above the design level, the Contractor may propose a regrading of the design level of the base course, to allow for its design thickness to be laid, up to a maximum of 20mm above the original design level. Approval by the Superintendent shall be subject to the following requirements:
- The rate of change of grade from the original finished design surface level shall be less than 3 mm per metre.
 - The regrading shall not interfere with the proper design functioning of the drainage system.
 - The regrading shall not interfere with levels at the property boundary, or increase or decrease footpath or footpath crossover levels or grades beyond Council's allowable design limits.
 - The regrading shall not interfere with clearances.
- (iii) Where the cause for rejection is under Clause C242.22(c), the course is a base course and rejection is due to departures from design level being too far above the design level, the Contractor may propose a regrading of the design level of the base course. Approval by the Superintendent shall be subject to the requirements of this Clause in (ii) above.

The cost associated with surface level corrections required in this Clause shall be borne by the Contractor.

Contractor's Costs

C242.24 REMOVAL AND REPLACEMENT OF REJECTED COURSES

1. Sections of the work that have been rejected shall be removed from the work and replaced with fresh material. Rejected material shall be removed from site. **Rejected Material**
2. In rejected sections the material shall be removed over the full length of the rejected lot, except that a minimum length of 50 m of pavement layer shall be removed and replaced. Any damage to underlying or abutting layers or structures shall be made good by the Contractor using methods approved by the Superintendent. **Length to be Removed**
3. The Superintendent may approve removal for less than the full width as constructed if the cause of the rejection of the work can be isolated transversely to the Superintendent's satisfaction. In this case, the new longitudinal cold joint shall be formed and located along the centreline of the road pavement. **Superintendent's Discretion**
4. After removal of rejected base or subbase course material, the section shall be presented for inspection by the Superintendent before replacement work is commenced. **Inspection Before Replacement**

5. Materials used as replacement materials, and the subsequent spreading, compaction, trimming, curing and testing of the replacement materials, shall comply with the requirements of this Specification.

**Replacement
Material**

6. All costs associated with removals, replacements and corrections of base and subbase courses required under this Clause and the extra costs incurred by the Contractor in respect of delays caused by such removals, replacements and corrections shall be borne by the Contractor.

**Contractor's
Costs**

C242.25 MAINTENANCE BEFORE COMPLETION OF WEARING SURFACE

1. Following the Superintendent's acceptance of any section of the work, the Contractor shall maintain the prepared surface of the base in the condition specified for acceptance until the wearing surface is completed. The base course of sections of the accepted work shall be covered with a primerseal over the full width of pavement in accordance with the Specification for SPRAYED BITUMINOUS SURFACING within seven days of the date of the acceptance of such sections, unless otherwise approved by the Superintendent.

Primerseal

2. Should the pavement condition deteriorate before the application of the primerseal and consent to proceed with the bitumen surfacing work is withdrawn by the Superintendent, the Contractor shall re-prepare the pavement and re-present the pavement for inspection by the Superintendent.

**Contractor's
Responsibility**

HP

3. The cost of re-preparing areas of the deteriorated pavement shall be borne by the Contractor.

**Contractor's
Cost**

4. The Contractor shall maintain adequate drainage of the pavement, and remove any ponded water within 12 hours of its creation if free drainage cannot be achieved, prior to the completion of the wearing course.

**Surface
Drainage**

OPENING PAVEMENT TO TRAFFIC

C242.26 GENERAL REQUIREMENTS

1. For unbound pavements, construction plant and vehicles not involved in the current construction or testing of the work shall not be permitted to use the pavement until the primerseal has been applied, unless otherwise approved by the Superintendent.

**Restrictions
on Movement**

2. For bound pavements, construction plant and vehicles not involved in the current construction or testing of the work shall not be permitted to use the pavement until the primerseal has been applied and seven days have elapsed since placement of the base. In any case only vehicles registered for legal road usage and loaded within legal limits will be allowed to use the pavement.

**Restrictions
on Movement
of Construc-
tion Traffic**

3. For bound pavements, traffic shall not be allowed to use the constructed pavement until a minimum of seven days after completion of the full pavement depth and the primerseal.

**Open to Traffic
Bound
Pavement**

LIMITS AND TOLERANCES

C242.27 SUMMARY OF LIMITS AND TOLERANCES

The limits and tolerances applicable to the various clauses in this Specification are summarised in Table C242.6 below:

Item	Activity	Limits/Tolerances	Spec Clause
1.	Stockpile Sites	(i) Relative Compaction >95% (ii) Stockpile height <3m (iii) Stockpile batter <1.5:1 and >3:1	C242.12 C242.12
2.	Spreading Pavement Materials		
	(i) Compacted Layer Thickness	≥100mm, ≤200mm	C242.14
3.	Compaction Acceptance		
	Minimum value of all calculated relative compaction results	≥100 per cent (standard compactive effort). For bound pavements may accept between 98% and 100% provided it represents less than 5% of the area.	C242.20
4.	Width of Pavement		
	(i) Design centre-line to edge of constructed pavement	-50mm to +300mm of dimensions on Drawings	C242.22(b)
	(ii) Average Width	The average width determined from 3 random sites over any 200m road length, or part thereof, shall be not less than the specified width.	C242.22(b)
5.	Surface Level		
	(i) Subbase levels	<±15mm from design level	C242.22(c)
	(ii) Base levels	<±15mm from design level	C242.22(c)
	(iii) Base levels adjacent to Kerb and Gutter	<±5mm from the lip levels of adjacent gutter minus design thickness of wearing surface.	C242.22(c)
	(iv) Shape	Deviation from a 3m long straightedge on base surface immediately prior to sealing shall be less than 12mm	C242.22(c)

Table C242.6 - Summary of Limits and Tolerances

SPECIAL REQUIREMENTS

C242.28 RESERVED

C242.29 RESERVED

C242.30 RESERVED

C242.31 RESERVED

MEASUREMENT AND PAYMENT

C242.32 PAY ITEMS

1. Payment shall be made for the activities associated with completing the work detailed in this Specification in accordance with Pay Items C242(a) to C242(b) inclusive.
2. A lump sum price for any of these items shall not be accepted.
3. 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.
4. Base course primerseal is measured and paid in accordance with the Specification for SPRAYED BITUMINOUS SURFACING.

Pay Item C242(a) SUPPLY, SPREAD AND COMPACT SUBBASE COURSE

1. The unit of measurement shall be the cubic metre.
2. The area shall be determined by the length and width of work as specified on the Drawings or as directed by the Superintendent.
3. No account shall be taken of allowable tolerances.
4. The schedule rate under this Pay Item shall include all the activities associated with the supply, spread, compaction, trimming, jointing, and testing of the subbase course, and curing of bound material.

Pay Item C242(b) SUPPLY, SPREAD AND COMPACT BASE COURSE

1. The unit of measurement shall be the cubic metre.
2. The area shall be determined by the length and width of work as specified on the Drawings or as directed by the Superintendent.
3. No account shall be taken of the allowable tolerances.
4. The schedule rate under this Pay Item shall include all the activities associated with the supply, spread, compaction, trimming, jointing, and testing of the base course, and curing of bound material.

