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SECTION 12 - SPRAYED BITUMINOUS SURFACING

12.1 GENERAL

This section covers the requirements for materials, design and application of sprayed seal treatments including priming, primersealing and seals of various types. This specification accords with the VicRoads Specification Section 408 except as shown in *italics*.

12.2 DEFINITIONS

Adhesion Agent:

A wetting agent which promotes adhesion of binder or primerbinder to stone.

Bituminous Materials:

Primer, primerbinder, binder or a mixture of binder with cutter (cutback bitumen), flux oil, adhesion agent binder modifiers such as rubber and polymer or special additives.

Prime:

The application of a bituminous primer to a prepared granular pavement base or concrete surface without cover aggregate as a preliminary treatment.

Primerseal:

The application of a bituminous primerbinder to a prepared base of a pavement with a cover aggregate as a preliminary treatment.

Residual Binder:

The volume of bituminous binder at 15° C including the volume of any polymer, granular rubber and flux oil but does not include the volume of any cutter, water, emulsifier or adhesion agent.

Sprayed Seal:

The sprayed application of bituminous binder to a pavement surface followed by an application of aggregate to form an all weather skid resistant road surfacing.

12.3 BITUMINOUS MATERIALS

(a) Adhesion Agent

Where proposed to be used, the type of adhesion agent and the percentage to be added to the binder, primerbinder and/or aggregate precoating material shall be subject to the Contractor providing evidence that the proprietary product has satisfactory field performance. Adhesion agent may be added to the aggregate precoating material, binder or both.

Adhesion agents shall be used strictly in accordance with the manufacturers recommendations.

The adhesion agent shall meet the requirements of Table 12.3.1 below.

Table 12.3.1 – Requirements for Adhesion Agent

Test	VicRoads Test Method	Minimum Requirement
Adhesion of binder to stone (Immersion Tray Test)	RC 112.03	70% for fresh adhesion agent in binder or on aggregate
Miscibility of adhesion agents with light diesel fuel oil	RC 155.01	No sediment after 7 days of storage
Stability of adhesion agents to storage in hot bitumen	RC 155.01	50% for binder treated in accordance with RC 155.02
Stability of adhesion agents solutions to exposure in air	RC 155.04	70% for exposed adhesion agent in binder or on aggregate

(b) Aggregate Precoating Material

Aggregate precoating material shall be distillate or distillate based product, cutback bitumen, or proprietary product subject to the Contractor providing evidence that the proprietary product has satisfactory field performance.

(c) Bitumen

Bitumen for the surface seal coats shall be Class 170 complying with the requirements of Australian Standard 2008 - Residual Bitumen for Pavements, with the additional requirement that the minimum time to reach the specified apparent viscosity level shall be 9 days when tested in accordance with Australian Standard 2341.13 - Long Term Effect of Heat and Air on Bitumen.

The bitumen shall be fluxed with asphaltic oil, and cut back with power kerosene to meet the prevailing conditions of air temperature, sun, cloud, shade, wind, cleanliness of aggregate and condition of pavement.

In general the proportions of bitumen, asphaltic oil and power kerosene shall be in accordance with the Table 12.3.2, but the exact proportions to be used shall be determined by the Superintendent from time to time during the progress of the work.

Table 12.3.2

Size 7 Aggregate – One sized								
Air Temp.	Parts of Flux Oil & Cutter per 100 parts of Bitumen by volume at 15°C							
In °C	Traffic – Vehicles per day (12 hr count)							
	Under 150		150-500		500-1000		Over 1000	
	Flux Oil	Cutter	Flux Oil	Cutter	Flux Oil	Cutter	Flux Oil	Cutter
15-20	4	12	2	12	-	12	-	10
20-25	4	8	2	8	-	8	-	6
25-30	4	6	2	6	-	6	-	4
30-35	4	4	2	4	-	4	-	2
35+	4	2	2	2	-	2	-	-
Size 14 Aggregate – One sized								
Air Temp.	Parts of Flux Oil & Cutter per 100 parts of Bitumen by volume at 15°C							
In °C	Traffic – Vehicles per day (12 hr count)							
	Under 150		150-500		500-1000		Over 1000	
	Flux Oil	Cutter	Flux Oil	Cutter	Flux Oil	Cutter	Flux Oil	Cutter
15-20	4	10	2	12	-	10	-	8
20-25	4	6	2	6	-	6	-	4
25-30	4	2	2	2	-	4	-	2
30-35	4	2	2	2	-	2	-	-
35+	4	-	2	-	-	-	-	-

(d) Bitumen Emulsion

Bitumen emulsion of Grade ARS or CRS shall comply with the requirements of Australian Standard 1160 - Bitumen Emulsion for Construction and Maintenance of Pavements. The type of bitumen emulsion to be used including any proprietary grades shall be subject to the Contractor providing evidence that the proprietary product has satisfactory field performance.

(e) Crumb Rubber

Crumb rubber to be used as a binder additive shall be supplied in accordance with VicRoads standard specification Section 425 - Bitumen Crumb Rubber Seals.

(f) Cutback Bitumen

Cutback bitumen shall comply with the requirements of Australian Standard 2157 - Cutback Bitumen, or an equivalent product subject to the Contractor providing evidence that the proprietary product has satisfactory field performance.

(g) Cutter and Flux Oil

Cutter and flux oil shall comply with Australian Standard 3568 - Oils for Reducing the Viscosity of Residual Bitumen for Pavements.

(h) Polymer Modified Binder

Polymer modified binder shall comply with the current "Austroads Specification Framework for Polymer Modified Binders". The type of Polymer Modified Binder (PMB) to be used including any proprietary grades shall be subject to the Contractor providing evidence that the proprietary product has satisfactory field performance.

(i) Primer

The primer shall be a cutback bitumen or a bitumen emulsion of suitable grade to ensure penetration into the pavement surface and when cured, shall be waterproof, of uniform appearance and suitable for bituminous surfacing.

The primer shall be of low, medium or heavy viscosity, according to the nature of the crushed rock used in the pavement and the condition of the road after preparation for sealing.

The Superintendent shall decide whether a light, medium or heavy primer will be used.

(j) Primerbinder

The primerbinder to be used shall be a cutback bitumen or a bitumen emulsion. The primerbinder shall be waterproof and capable of penetrating into and adhering to the pavement surface while retaining sufficient binder on the surface to hold the aggregate in place.

12.4 LIMIT OF WORK

Unless otherwise specified the Works shall include all existing tapers, bell mouths at intersecting roads, pavement widenings (turn lanes), traffic lanes and sealed shoulders.

The limits of work at the start and finish chainages plus the limit in any side road have been marked on the pavement surface.

[Deleted para 3 & 4 from VicRoads Specification Clause 408.04]

12.5 AGGREGATE

Aggregate shall consist of crushed stone, having clean, hard, stony, durable, uncoated particles free from all soft, friable, elongated or laminated pieces, organic matter or other deleterious substances. It shall conform to the physical characteristics and shall be graded in accordance with VicRoads standard specification

Section 831 - Aggregate for Sprayed Bituminous Surfacing, or Section 832 - Sands for Sprayed Bituminous Surfacing for the particular purpose for which it is to be used as specified below.

*The maximum percentage of wear as determined by the Los Angeles Abrasion Test shall be 20 for basalt aggregate and 35 for granite aggregate. **The Contractor shall confirm with the Superintendent the type of aggregate to be used.***

All aggregate shall be loaded into trucks by means of an approved VicRoads type aggregate loader capable of screening, loading the pre-coated stockpiled aggregate. Front end loaders shall not be used for loading of aggregates.

12.6 RATES OF APPLICATION OF BITUMINOUS MATERIAL AND AGGREGATE

The Contractor shall determine the design rates of application for bituminous material and aggregate in accordance with the procedures set out in the VicRoads Design Procedure or the AUSTROADS pamphlet - Design of Sprayed Seals - July 1990 used in conjunction with the NAASRA Technical Report - Bituminous Surfacing - Sprayed Work 1990.

Unless otherwise specified, all rates of application of bituminous material shall be expressed in litres/m². In the case of binder, rates of application shall refer to residual binder at 15° C.

Traffic data and estimated rates of application for bituminous material are specified in *Section 1 clause 1.5*.

HP At least two weeks prior to the commencement of work, the Contractor shall submit the design rates of application for bituminous material and aggregate for review by the Superintendent.

Where the surface texture allowance between wheel paths and other areas within a traffic lane differs by 0.3 l/m² or more, the Contractor shall, unless otherwise specified, apply a transverse correction pre-treatment. The Contractor shall provide details of the pre-treatment type to the Superintendent for review in addition to the design rates of application.

[Deleted para 6 from VicRoads Specification Clause 408.06]

12.7 CONDITIONS FOR SPRAYING

(a) Pavement

The surface on which primer or binder is to be applied shall be dry. The surface on which primerbinder is to be applied shall be damp.

(b) Ambient Temperature

Unless otherwise approved by the Superintendent, spraying shall not be carried out when the air temperature is less than that specified in Table 12.7.1:

Table 12.7.1

Type of Work	Air Temperature °C
<i>Priming</i>	10
<i>Primersealing</i>	15
<i>Sealing</i>	15

12.8 INITIAL TREATMENT OF PAVEMENT

All prepared surfaces for sealing shall be primed or primer sealed prior to sealing.

Unless otherwise approved by the Superintendent, the top course of crushed rock pavement shall be treated prior to surfacing as set out in Table 12.8.1.

Table 12.8.1

Surfacing	Under Traffic Conditions	Not Under Traffic Conditions
Single coat seal	Primerseal followed by seal coat (min 3 months [summer], max 12 months [winter])	Prime followed by seal coat (min 24 hrs, max 72 hrs).
Two coat seal - First Coat and Second (Final) Coat	Primerseal followed by first seal coat (min 3 months [summer], max 12 months [winter]) followed by second coat (min 12 months)	Prime followed by first seal coat (min 24 hrs, max 72 hrs) followed by second coat (min 12 months)

Primerseal: The application of SP1000 binder or equivalent with 7mm basalt cover aggregate in accordance with clauses 12.20 and 12.21.

Prime: The application of a cutback bitumen primer without cover aggregate in accordance with clause 12.14.

12.9 COMMENCEMENT OF WORK

12.9.1 General

On the day prior to the works being carried out the Contractor shall provide written confirmation of the works that will be undertaken the following day.

HP Work shall not commence until the Contractor and the Superintendent have agreed that the road surface *is true to cross section, smooth, hard, dry and ready and fit for surfacing and that there is sufficient materials, plant and personnel on site to carry out the works as specified.*

Bituminous surfacing shall be suspended immediately if, in the opinion of the Superintendent, weather conditions, working practices or any other circumstance arise that will prevent the required quality of the work from being achieved.

12.9.2 Annual Pavement Resealing Program

Within two weeks of the Date of Award of the Contract, the Contractor shall submit to the Superintendent for review the sealing program for the whole of the works.

The Contractor shall submit a detailed program of planned sealing jobs for the next 4 weeks under the Contract for review by the Superintendent.

The detailed program shall be submitted at least 5 working days in advance of any works shown on that program.

The detailed program shall be in bar chart form, including specific jobs to be undertaken with a time scale shown in days. The program shall include planned dates for each sealing job.

12.9.3 Inclusion and Deletion of Job Items

The Superintendent may cancel any work, subject to notice of cancellation being given 1 week prior to the proposed programmed date.

The Contractor will be notified in writing of such deletion and the Contract sum adjusted by the *Schedule of Rates* tendered for the job item/s deleted.

No additional payment will be made as a result of the deletion of any job item. However, where the deletion of job items results in a contract sum reduction of more than 20% of the original contract sum, the deletion of job items in excess of this amount will be treated as a variation under *Clause 36* of the General Conditions of Contract.

12.9.4 Removal of Existing RRPMS

As part of the surface preparation the Contractor shall remove and dispose of existing Raised Reflective Pavement Markers (RRPMs) from the site and repair any surface defect caused by such removal prior to sealing.

12.9.5 Preparation And Minor Works

The Contractor shall supply and place approved temporary line marking devices to reflect the line marking in place prior to the works commencing. All raised pavement markers shall be removed in accordance with clause 12.10 of the Specification and VicRoads Ops notes.

The Contractor shall undertake removal of minor weed growth (< 15 lineal metres and > 10 mm high) at the interface between the bitumen surface and the kerb at no additional cost.

The Contractor shall remove and dispose of all debris that may impact on bitumen adhesion to the road surface together with all rubbish, edgings, broken tree branches, etc. on the work site and shall pay all tipping or other disposal costs associated with this activity.

The Contractor shall rectify to the satisfaction of the Superintendent all damage to trees, shrubs, signs, fences, naturestrips and other Council assets located within the road reservation arising from the activities of the Contractor in providing the Services.

12.9.6 Notification To Residents

The Contractor shall deliver a notice to all properties abutting the work site at least 24 hours prior to the work being carried out. The notice shall take the form of a "Notification to Resident Form" that conforms to a sample supplied by the Principal.

This activity must be shown on the Contractor's Construction Program as a separate and distinct item.

The Contractor shall liaise with residents or others affected by the works and attempt to resolve any dispute in the first instance. In the event that any dispute is not resolved, the Contractor shall immediately advise the Superintendent of the facts of the matter and seek a direction from the Superintendent.

No spraying operations shall be carried out within close proximity to members of the public or private motor vehicles or on days of Total Fire Ban.

12.10 PREPARATION OF PAVEMENT FOR PRIMING

All dust, debris and foreign matter shall be removed from the pavement immediately before applying the primer coat. The surface shall be swept with a mechanically operated rotary broom, free and clean of all loose stones, dust and dirt, sufficient of the surface binding being removed to expose, but not dislodge the embedded stones of the pavement. Particular care shall be taken to thoroughly clean outer edges of the surface to be treated. Where required, hand brooming shall be used at intersections, bellmouths and other areas.

As part of the surface preparation the Contractor shall remove and dispose of existing Raised Reflective Pavement Markers (RRPMs) from the site and repair any surface defect caused by such removal prior to sealing. Waste materials removed from the surface of the pavement shall be carted off and completely removed from the site. Under no circumstances shall such materials be applied to the treated surface.

12.11 PAPERING AND OTHER PROTECTION

The Contractor shall protect all kerbs and channels, manholes, fire plug covers, etc. by covering them with medium grade paper (Kraft 215 g/sq m or an equivalent) weighted down with aggregate. The Contractor shall lay paper at the start and finish of each sprayer run to ensure a clean cut-on and cut-off.

Edgings, raised pavement markers, adjoining structures and drainage pit covers and sections of roadway not required to be treated shall be protected from splash and all necessary precautions shall be taken to protect traffic and parked vehicles from airborne bitumen material.

Protective paper (and the material used to hold it in place) shall be removed as soon as the work is completed.

Side entry pits and other pits shall be protected from being contaminated with swept off material and/or aggregate. If contamination occurs, such pits shall be cleaned out (not flushed) as part of the clean up operations.

12.12 APPLICATION OF PRIMER AND BINDER

All primer and bitumen binder shall be applied by means of an approved machine sprayer which shall be fitted with a tank of not less than 2000 litres capacity, and which shall be capable of spraying at a uniform rate of from 0.5 to 2.7 litres per square metre at any width of spray bar used.

The sprayer shall be equipped with a circulating system capable of thoroughly mixing all of the material in the sprayer tank at a rate of not less than 1000 litres per minute. The pumping and control gear shall be capable of maintaining a constant spraying pressure of not less than 110 Kpa. The manifold spray-bar shall be of such design as to give a uniform pressure throughout its length. The size and arrangement of jets shall be of such design as to apply a coating of uniform thickness throughout and to give the specified quantity per square metre.

The Contractor shall provide evidence that the sprayer unit has been calibrated by VicRoads or another approved testing authority during the current calendar year.

12.13 HEATING OF BINDER

All primer and binder shall be heated in approved heaters or kettles and shall be sprayed as soon as possible after heating to spraying temperatures as set out in Tables 12.13.1 and 12.13.2.

Table 12.13.1-Spraying Temperatures of Bituminous Materials

Material	Temperature °C	
	Minimum	Maximum
Very light primer	-	30
Light primer	-	35
Medium primer	35	55
Heavy primer	60	80
Light/medium cutback bitumen primerbinder	120	135
Heavy cutback bitumen primerbinder	140	155
Bitumen emulsion:		
60% bitumen content	40	60
70% bitumen content	70	90
Class 170 bitumen	178	185

Table 12.13.2-Spraying Temperatures for Fluxed and/or Cutback Bitumen Binder

Cutter, Parts by Volume per 100 parts of Class 170 Bitumen at 15 °C	Flux Oil, Parts by Volume per 100 parts of Class 170 Bitumen at 15°C					
	0		2		4	
	Min °C	Max °C	Min °C	Max °C	Min °C	Max °C
0	178	185	170	184	166	180
2	170	184	166	180	162	178
4	166	180	162	178	160	174
6	162	178	160	174	158	172
8	160	174	158	172	154	170
10	158	172	154	170	152	168
12	154	170	152	168	150	164
14	152	168	150	164	148	162
16	150	164	148	162	144	160
18	148	162	144	160	142	158
20	144	160	142	158	140	156
22	142	158	140	156	138	154
24	140	156	138	154	136	152
26	138	154	136	152	134	150
28	136	152	134	150	132	148
30	134	150	132	148	130	146

12.14 PRIMER COAT

The primer coat shall be applied at a temperature in accordance with Table 12.13.1 at the rate of 0.5 to 1.1 litres per square metre of pavement surface, this quantity being measured at 15 °C.

At the time of application, the weather shall be warm and dry, and the road surface clean and dry and preferably warmed by the sun.

After the application of the primer, a period of at least twelve (12) hours and preferably 2 or 3 days, shall elapse before the surface seal coat is applied. During this period, traffic shall be kept off the treated surface by means of adequate barriers, lights, etc. Any failures or deficiencies in the primed surface shall be made good by hotmix patching, re-priming or any other approved methods.

In locations requiring passage of traffic or where directed by the Superintendent, primed surfaces shall be gritted. At least two hours shall elapse between application of primer and grit unless otherwise directed.

12.15 WIDTH TO BE PRIMED OR PRIMERSEALED

Where possible the width of the prime or primerseal shall extend 100 mm outside the edges of the proposed final treatment.

12.16 BITUMINOUS SEAL FIRST COAT

After priming has been carried out and the period provided for above has been elapsed, all dirt or foreign matter shall be removed from the primed pavement and the first seal coat applied. The fluxed and cut-back bitumen shall be applied at a temperature in accordance with Table 12.13.2 at the correct uniform rate, this quantity being measured at 15°C.

HP Prior to the commencement of work, the Contractor shall submit the design rates of application for bituminous material and aggregate for review by the Superintendent.

At the time of application, the weather shall be warm and dry, and the road surface clean and dry and preferably warmed by the sun.

The Superintendent may direct that the rate of application of bitumen be increased if the Superintendent considers that the surface texture of the primed pavement is such that a heavier application is necessary.

12.17 PRECOATING OF AGGREGATE

Aggregate shall be precoated before it is applied to the road surface. The precoating material (diesel fuel oil and 1% anti strip) shall be sprayed onto the aggregate at a uniform rate (as a guide between 8 and 12 litres per cubic metre for basalt aggregate and between 5 and 8 litres per cubic metre for granite aggregate) and the aggregate shall be thoroughly mixed so that the entire surface of each stone is oil damp, without "over oiling".

12.18 APPLICATION OF AGGREGATE

Immediately after spraying the first seal coat, precoated aggregate consisting of screening of the size and type specified shall be uniformly and evenly distributed over the treated surface from and approved "cockerell" or fish tail type spreader.

The application of screenings shall follow immediately after the spraying of the binder. All bituminous spray shall be covered with aggregate within the times set out in Table 12.18.1

Table 12.18.1

Air Temperature	Maximum Covering Time
15-20 °C	10 minutes
20-25 °C	15 minutes
25+ °C	20 minutes

As soon as practicable after the application of the screenings, the treated surface shall be rolled with approved self propelled pneumatic tyred multi wheeled rollers having a ballasted mass not less than 10 tonnes. Rear wheels shall be offset relative to the front wheels to give overlapping tyre paths and complete coverage for the effective width of the roller. Tyres shall be inflated to 600 kPa.

Rolling will consist of at least 6 passes with an approved roller. The rolling speed shall be between 15 and 25 kph. Rolling shall continue until the aggregate is embedded in the binder and a uniform surface is obtained.

Rolling shall be carried out such that every 4000 square metres of seal/primerseal receives a minimum continuous rolling of four roller hours within two hours of the binder being sprayed.

The number of rollers to be used shall be at least one for each 10,000 square metres or part thereof of primer sealing or sealing to be done in one day. An approved drag broom drawn by a pneumatic tyred truck or tractor, with associated hand brooms where necessary shall be used to ensure uniform distribution of the screenings.

12.19 BITUMINOUS SEAL, SECOND OR FINAL COAT

After the road has been subjected to normal traffic for a sufficient period to ensure the embedding of the aggregate in the first coat of binder to the satisfaction of the Superintendent a second or final seal coat shall be applied.

The road shall be first swept to remove any surplus screenings from the first coat and the fluxed cutback bitumen as specified shall be applied at the temperature in accordance with Table 12.13.2 at the correct uniform rate, this quantity being measured at 15 °C.

HP Prior to the commencement of work, the Contractor shall submit the design rates of application for bituminous material and aggregate for review by the Superintendent.

At the time of application, the weather shall be warm and dry, and the road surface clean and dry and preferably warmed by the sun.

The binder shall be covered with aggregate of the size and type specified applied at the design application rate. The aggregate shall be applied and rolled as specified under Clause 12.18 above.

12.20 PREPARATION OF PAVEMENT FOR PRIMERSEALS

Where primerseals are used, preparation of the pavement for primersealing shall be as specified in section 12.10 and 12.11. If the pavement is dry and produces dust, it shall be lightly watered before sweeping.

12.21 PRIMERSEAL COAT – BINDER AND AGGREGATE

Unless other wise specified, all primerseals shall be SP1000 or equivalent.

The spraying temperature shall be in the range of 115 °C to 135 °C. At the time of application the road surface shall be damp.

NOTE: In all cases where primerseals are applied, they shall be covered with a first coat seal or asphalt not sooner than three (3) months [summer] nor longer than twelve (12) months [winter] from the time of applying the primerseal coat.

12.22 CLEANING UP

Any tar or bituminous materials which may, from time to time, for any reason, come into contact with kerbs, channels or nature strips, shall be cleaned off to the satisfaction of the Superintendent.

Until loose aggregate is removed from the sealed surface, traffic speed shall be controlled by traffic control signing in accordance with the VicRoads Worksite Traffic Management Code of Practice.

Where use of a suction sweeper has not been specified, loose aggregate shall be swept onto the unsealed shoulder. Loose aggregate shall not be swept into open drains, kerb and channels and shall not remain on sealed shoulders.

Loose aggregate shall not be removed until the aggregate has properly bedded down into the binder by either trafficking or additional rolling. If a suction cleaner is used, it shall remove aggregate by suction only. No more than 40 loose stones in any square metre of pavement shall remain after the removal of loose aggregate.

The Contractor shall remove the whip off (loose and unwanted aggregate) from the pavement, pits, kerb and channel, concrete paving (footpaths, vehicle crossings) and naturestrips within the time frame set out in Table 12.22.1.

Table 12.22.1

Period after sealing (in working days)	VPD < 100 Courts and Court Bowls	VPD > 100 < 500	VPD >500
3	✓	✓	✓
10		✓	
20	✓		
60	✓	✓	✓

The Contractor shall undertake additional brooming and/or suction sweeping of nominated areas within a timeframe and at a frequency as directed by the Superintendent.

Any damage done to the seal due to the removal of loose aggregate shall be repaired by the Contractor at no cost to Council. The removal of loose aggregate and disposal from site is the responsibility of the Contractor.

Surplus screenings which have been removed from the road as specified above **shall not be used under any circumstances** in any subsequent sealing works.

12.23 MAINTENANCE OF WORKS

Following the completion of any job and during the defects liability period the Contractor shall repair any seal failures which include but are not limited to flushing, bleeding, fatty areas, stripping, non-uniformity of aggregate spreading and streaking in aggregate spread.

HP The Contractor shall advise the Superintendent in writing of the proposed treatment to effect the above repairs before undertaking the repair work.

Unless approved otherwise by the Superintendent the Contractor shall undertake any necessary repair work within 48 hours of notification by the Superintendent.

For urgent repairs the Contractor shall take action to preserve the work and make the road safe within 2 hours of being notified or becoming aware of the problem.

12.24 RECORDS

The Contractor shall complete, and forward to the Superintendent, a "Job Completion Report" using the proforma or an equivalent proforma approved by the Superintendent, for each job item in the Schedule. The completed form shall be submitted within seven days of completion of sealing each job.

The Contractor shall show and certify by initialling each item on the above Job Completion Report the actual status of the item compared to the specified requirement for that item, and sign and date the report prior to forwarding to the Superintendent.

The Contractor shall ensure that where a representative of the Superintendent is on site during the works, that officer validates the works as provided in the Job Completion Report.

12.25 ACCEPTANCE OF WORK

All tests shall be conducted in accordance with VicRoads relevant test method and Codes of Practice.

Prior to the Contractor leaving the site, the work shall be jointly inspected by the Superintendent and the Contractor's Representative to identify any defects in the work requiring immediate rectification to avoid rapid deterioration of the road surface or a danger to road users.

The Superintendent may direct that the work be rectified or alternatively accept the work at a reduced payment in accordance with Tables 12.25.1 and 12.25.2

Table 12.25.1- Application of Bituminous Material

Measured Variation from the Design Rates of Application *	Assessment	
	Above	Below
< 0.10 l/m ²	Accept	Accept
0.10 l/m ² - 0.20 l/m ²	Deduct \$0.10/m ²	Deduct \$0.20/m ²
> 0.20 l/m ²	Rectify or Deduct \$0.50/m ²	Rectify or Deduct \$0.50/m ²
* For modified binders, variation from specified rates of application may be increased or decreased by an additional 0.05 l/m ² .		

Table 12.25.2 – Application of Aggregate

Measured Variation from the Design Rates of Application	Assessment	
	Above	Below
< 5%	Accept	Accept
5% - 10%	Deduct \$0.10/m ²	Deduct \$0.20/m ²
> 10%	Deduct \$0.30/m ²	Deduct \$0.50/m ²

Acceptance or otherwise of the above criteria shall not relieve the Contractor from its obligations under the defects liability period.

12.26 USE OF STACKSITES

The Superintendent will advise the Contractor of the location of stacksites that are available for use by the Contractor. Where the Contractor elects to use these stacksites the Contractor shall do so pursuant to this Clause.

Stacks shall be so placed that they do not unduly reduce sight distance at locations such as intersections and curves. Stacks shall not be placed under or immediately adjacent to electric power lines or under trees or structures where the overhead clearance is less than 6 m. Stacks shall be placed clear of the road formation, drains, gateways and side tracks and the toes of the stacks shall be not less than 1 m from any obstructions which could impede the operation of mechanical loading equipment.

Unless otherwise directed or approved by the Superintendent, aggregate shall be stacked to one of the following templates:

*Bed width 4.0 m, top width 1.0 m, vertical height 0.8 m (nominally 2.0 m² per metre run)
Bed width 5.0 m, top width 2.0 m, vertical height 1.0 m (nominally 3.5 m² per metre run)*

No guarantee is given or implied that the available stacksites are suitable for the Contractor's operations or that they are of sufficient capacity to accommodate any or all of the quantities needed by the Contractor.

Any stacksite used by the Contractor during the Contract shall be cleaned *to the satisfaction of the Superintendent* within 4 weeks of completion of the item for which it was used. No additional payment will be made for this work. Where the Contractor does not clean any stacksite used as specified the Superintendent may arrange for it to be done by others at the Contractor's expense.

BITUMINOUS SURFACING SUPERVISION JOB SHEET

Contractor Name:

Council	Date	Road / Street	Job No
FRANKSTON CITY COUNCIL			

Weather	Treatment Type	Job Completed
Sunny <input type="checkbox"/> Clear <input type="checkbox"/> O/Cast <input type="checkbox"/> Windy <input type="checkbox"/> Humid <input type="checkbox"/> Showers <input type="checkbox"/>	Reseal 10	Yes <input type="checkbox"/> No <input type="checkbox"/>

Works Signs By:	Work Signs to:	Y N	Speed Limit signs:
Signed by contractor: <input type="checkbox"/>	Roadworks signing code of practice: <input type="checkbox"/> <input type="checkbox"/>	Date erected	Time
Signed by client <input type="checkbox"/>	Signed to contractor's procedures: <input type="checkbox"/> <input type="checkbox"/>	/ /	am/pm
	Full BS Unit working: <input type="checkbox"/> <input type="checkbox"/>	Permit for speed	
	After sealing completed: <input type="checkbox"/> <input type="checkbox"/>	signs Y N	
	No signs used: <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	

RRPM'S protected: <input type="checkbox"/> <input type="checkbox"/>	Temp markers in place <input type="checkbox"/> <input type="checkbox"/>	Job Drag broomed <input type="checkbox"/> <input type="checkbox"/>	Sprayer Regn. No.
			<input type="text"/>

Aggregate Site	Supplier	Type	Size	Agg. condition

Agg. Precoat

Plant P/Coat:: <input type="checkbox"/> P/Coat on job: <input type="checkbox"/> No P/Coat: <input type="checkbox"/> Type	L / m3:	Qty used:
lits		

Pavement condition	Surface condition	Patching	Initial Treatment
No cracking <input type="checkbox"/>	No stone loss <input type="checkbox"/>	None <input type="checkbox"/>	Good <input type="checkbox"/>
Some cracking <input type="checkbox"/>	Single stone loss <input type="checkbox"/>	Minor <input type="checkbox"/>	Rough <input type="checkbox"/>
General cracking <input type="checkbox"/>	General stripping <input type="checkbox"/>	Heavy <input type="checkbox"/>	Poorly compacted <input type="checkbox"/>

Sprayer Loads	1	2	3	4	5	6	Total
Start Location							
Finish Location							
Design Rate							
Bit-Flux-Cutter	100/ /	100/ /	100/ /	100/ /	100/ /	100/ /	
Sprayer mixing time							
HOT dip - start							
HOT dip - finish							
HOT quantity sprayed							
Binder temperature (°c)							
Air temperature (°c)							
Binder sprayed at 15°c							
Flux litres							
Cutter litres							
Residual binder at 15°c							
Adhesion agent litres							
BM Type - H or L							
Length (m)							
Width (m)							
Area (m2)							
Rate of application 1/m2							
Aggregate quantity m3							
Aggregate spread rate							
Number of rollers							
Rolling time							