TORBAY COUNCIL

Part 2 Specification

Contract Reference

TPL0321

Contract Title

Highway Surface Dressing 2021

1 Specification

1.1 Mandatory Requirements

Applicants are required to comply with and submit a fully signed Appendix A "10 Steps to Safety" with their Tender response.

1.2 SPECIFICATION – CARRIAGEWAY DRESSING

TYPE OF CONTRACT	1.	The definitions of the contract types are as follows:- Type 1 – Full Contract This shall mean that the Contract for Surface Dressing at these sites shall be entirely the responsibility of the Contractor in that he shall supply and apply all the necessary labour, plant, supervision and materials in the following operations:- (a) Provision of binder (b) Provision of adhesion agent (c) Provision of chippings (d) Preparatory sweeping (e) Provision of signs for traffic control (f) Carrying out traffic control (g) Protection of Street Furniture (h) Incorporating adhesion agent in binder (i) Applying the binder (j) Provision of chipping landings/stockpile sites (k) Delivery of chippings to stockpiles and protection (l) Loading chippings from stockpiles, transporting to site and applying (m) Rolling the chippings (n) Remove surplus chippings & disposal (o) Protection of new dressing (p) Kerb marking down the face of kerbs (q) Adhesives Type 2 – Full Contract – Excluding Chippings This shall be as Type 1 but excluding the provision of chippings, provision of chipping landings/stockpile sites and delivery of chippings to stockpiles and protection. Chippings will be collected by the Contractor from the Employer's landings/depots as set out in Schedule 1.
SPECIFICATION	2.	The work shall be carried out in accordance with the provisions and recommendations of Road Note 39 (6th Edition) and all materials not otherwise specified shall be in accordance with B.S. Specifications where such exist. The editions shall be those current three

months prior to the closing date for the submission of the tender.

DEFINITIONS 3. For the purposes of the Specification:-

Group 1 roads shall be motorways and other high speed roads listed by the Engineer where the Engineer will undertake signing and traffic control.

Group 2 roads shall be motorways, trunk and principal roads and other roads listed by the Engineer.

Group 3 roads shall be roads other than groups 1 and 2.

UNSUITABLE WEATHER 4. (a) Work shall stop when any of the following conditions obtain:-

(i) During periods of rain or drizzle or when there is standing water on the carriageway.

(ii) When the road surface is damp if cutback bitumen is specified.

(iii) When, unless the Engineer otherwise agrees, for the various grades of binder in use, the air temperature is below the following values:-

For "Single Chipping" sites:

	Group 1 & 2 Roads		Group 3 Roads	
	Uncoated Chippings	Coated Chippings	Uncoated Chippings	Coated Chippings
Grade 100 sec bitumen	15°C	10°C	15°C	10°C
Grade 200 sec bitumen	18°C	13°C	18°C	13°C
Grade 400 sec bitumen	21°C	16°C	21°C	16°C
Bitumen emulsion	10°C	-	10°C	-
Other binders	As directed by the Engineer			

For "Racking-in" sites:

	Group 1 & 2 Roads		Group 3 Roads	
	Uncoated Chippings	Coated Chippings	Uncoated Chippings	Coated Chippings
Grade 200 sec bitumen	20°C	17°C	18°C	13°C
Grade 400 sec bitumen	25°C	20°C	21°C	16°C
Bitumen emulsion	14°C	-	14°C	-
Other binders	As directed by the Engineer			

* on a rising thermometer

(iv) When the road surface temperature is below 5°C.

(v) When the road surface temperature exceeds the following values:-

	Uncoated Chippings	Coated Chippings
Single chipping sites	35°C	30°C
Racking in sites	40°C	30°C

(vi) When the road surface temperature is below 15°C when using 100 second or 200 second cutback, bitumen and uncoated chippings.

(b) Each day, before commencing work on Group 1 and 2 roads the Contractor shall discuss with the Engineer the advisability of undertaking the dressing having regard to the projected local weather forecast.

SUPPLY OF BINDER 5. Bitumen shall conform with the requirements of BS 3690, Part 1. All binder viscosities specified relate to the viscosity of the binder at the time of application to the carriageway surface. The viscosity grade of cut back bitumen binder shall be 200 sec unless otherwise specified by the Engineer, 100 or 400 sec material may be requested. The viscosity of 400 sec material shall be 400% sec ± 80 sec and distillate to 360°C shall be 2% to 8% by volume, other properties shall comply with BS 3690, Part I, table 2. The viscosity of rubberised bitumen shall be within the range of 160 to 250 seconds. The cutback binder diluent shall be creosote or kerosene. Sampling shall be in accordance with BS 3690 Part 1 Appendix B, with the exception that samples shall be no less than 2 kg. Sampling shall be undertaken jointly by the Engineer and the Contractor. Samples shall be taken from the distributor spray bar draw off tap either immediately before, during, or immediately after spraying, but at least 5 litres of binder shall be drawn off from the tap before the sample is taken to ensure that the sample is representative of the binder circulating in the tank. All samples shall be tested within 14 days of sampling.

Bitumen emulsions shall comply with the requirements of BS 434, Class K1-70 with the viscosity within the range 25 to 35 seconds. All binder viscosities specified relate to the viscosity of the binder at the time of application to the carriageway surface. The water/binder content may be determined to BS 434 or by ASTM D244 Residue by evaporation. Suppliers shall state on Schedule 5 the minimum residue of their products at 163°. Sampling shall be undertaken jointly by the Engineer and the Contractor. Quadruple samples shall be taken in suitable plastic containers, each of 1 litre capacity, at least three quarters filled. Two samples shall be retained by the Engineer, and two shall be retained by the Contractor. Samples shall be taken from the

distributor spray bar draw off tap either immediately before, during or immediately after spraying, but at least 5 litres of binder shall be drawn off from the tap before the sample is taken to ensure that the sample is representative of the binder circulating in the tank. All samples shall be tested within 14 days of sampling.

Proprietary binders may be specified by the Engineer and shall be used in accordance with the manufacturer's recommendations.

APPLICATION and OF BINDER

6. The binder shall be applied at a rate between 0.8 2.0 1/m2 as specified on the attached schedules or by the Engineer or his Representative on site, (but see clause 10 for rate of spread of binder where the Contractor proposes to supply quartzite chippings). The mean rate of spread of applied binder shall not differ from the specified rate of spread by more than the tolerances given in the table below. The rate of spread shall be measured at the discretion of the Engineer by either the field test or by tanker dips as described below, or both if required. Where the field test is used, the rate of spread on each tile shall not vary from the found mean by more than ± 10%.

Specified Rate of Spread 1/m²	Allowable Mean Rate of spread 1/m²
0.9	0.8 to 1.0
1.0	0.9 to 1.1
1.1	1.0 to 1.2
1.2	1.1 to 1.3
1.3	1.2 to 1.4
1.4	1.3 to 1.5
1.5	1.4 to 1.6
1.6	1.45 to 1.75
1.7	1.55 to 1.85
1.8	1.65 to 1.95
1.9	1.75 to 2.05
2.0	1.85 to 2.15

(a) The field test as defined in BS 1707, modified as follows:-

(i) carpet tiles with a suitable impervious backing may be used. In this situation, the polyethylene backing strip may be omitted.

(ii) two transverse strips of tiles, 2 metres apart, shall be used for each test. The mean rate of

spread on each strip of tiles when measured in accordance with this clause shall be within 0.05 1/m² of each other, otherwise the test will be invalid and be repeated. For a valid test, the found mean shall be calculated by averaging the mean of both strips of tiles.

(iii) any partially sprayed tiles at the extremities shall be excluded from the calculation.

(iv) Where a field test is being undertaken, the binder distributor shall continue spraying binder at the appropriate road speed for a distance of at least 2 metres past the test location.

(b) Tanker dips before commencement and upon completion of each site. The dips shall be measured and the mean rate of spread of binder calculated in accordance with this sub-clause. Dip information and calculations shall be submitted to the Engineer for each site completed, at the end of each weeks work.

(i) Dips shall be taken using an accurate dip stick identifiable to the vehicle and the particular tank. The distributor shall be placed on a level stretch of road and the position of the wheels marked on the road. All dips shall be taken with the circulation system and the bar full of binder. The commencement dip stick reading (Dc) shall be taken when the binder is at spraying temperature and the temperature recorded. Dipping shall continue until a consistent reading is obtained. Where adhesion agent is added to the binder the dip shall be taken after full circulation.

(ii) Upon completion of the site to the distributor shall be returned to the same position as at the commencement of the site and the finish dip (Df) taken as in (i) above.

(iii) Dip readings (Dc and Df) shall be corrected to the following standard (dc and df) spraying temperatures:

<u>For swirling jet spray type:</u>

Cutback bitumen	100secs 150°C
and rubberised bitumen	200secs) 160°C
	400 secs)
Bitumen emulsion	82.5°C

(iv) The mean rate of spread of binder shall be calculated from the equation:-

$$Rav = \frac{dc - df - L}{A}$$

Where A = site area L = allowance for laps

(v) The allowance for laps (L) shall be calculated from each part of the site where a different number of longitudinal joints have been made. The Contractor

shall state in the Schedule of Prices 4, at the time of tendering, the theoretical increase in site width for each type of distributor and longitudinal joint to be used:

lap to lap
lap to butt
butt to butt

(vi) On sites where the Engineer instructs localised variations to the specified rate of spread (under trees etc) an allowance shall be made when calculating Rav above.

(vii) The amount of dressing completed by hand on each site shall also be recorded.

When requested by the Engineer in advance of the work on any site, the Contractor shall supply weighbridge information relating to the amount of binder used on any day. This information shall be reconciled to the dip information obtained in (b) above.

TEMPERATURE OF SPRAYING

7. The binder shall be applied to the surface at temperatures to the following targets appropriate to the viscosity and spray bar jet type:

For swirling jet spray type:

Cut back bitumen	100 secs	150°C
	200 secs)	160°C
	400 secs)	
Bitumen Emulsion	K1-70	82.5°C ± 2.5°C

For slot jet spray type:

Ranges for all cut back bitumen grades and all other binder types to be agreed with the Engineer at the time of calibration.

SITE ADHESION AGENT

8. (a) Site adhesion agent shall be added to the binder by the Contractor where appropriate provided its use is approved by the Engineer. The quantity so added and the rate shall be agreed between the Engineer and the Contractor. The Contractor shall state in Schedule 4 the type of site adhesion agent he proposes to use, its effective life when added to the binder, and its chemical properties.

(b) When use is agreed by the Engineer, the Contractor shall load the amount of site adhesion agent conforming with the manufacturer's recommendations into the binder distributor.

(c) Site adhesion agent shall be circulated within the binder for a period of 20 minutes immediately before spraying commences.

SUPPLY OF CHIPPINGS

9. Chippings supplied by the Contractor shall be single sized as specified on the attached schedules. The Contractor shall provide all sites for the stockpiling of Chippings as necessary but some stockpiles sites may be provided by the Engineer for use by the Contractor for the duration of the Contract. The location of chipping landings which could be made available by the Engineer are shown in Appendix 2. The Contractor shall satisfy himself of the suitability of any landing provided by the Engineer. Chippings shall only be stockpiled at sites approved by the Engineer and which comply with relevant planning regulations. Stockpiles shall be kept tidy at all times and all excess chippings shall be removed from the stockpile sites on completion of the work. No additional payment will be made for this.

The Contractor shall notify the Engineer in advance of delivery times and locations of the chippings for testing purposes, and shall afford the Engineer all reasonable facilities to enable him to carry out tests.

The Engineer may wish to test the chippings for use on Group 1 and 2 roads well in advance of dressing on these sites. The Contractor shall inform the Engineer of their location four weeks before their incorporation in the works and shall ensure that the chippings are delivered to and stored at the stockpile site(s) at least one week before commencement of the dressing on that site.

QUALITY OF CHIPPINGS

10. Type 1 Contract Sites

All sites shall be of a Type 1 Contract. Chippings shall be sourced from a Quarry approved by the Engineer.

Chippings shall be hard, durable and crushed, naturally occurring rock, or slag. They shall conform to BS63 Road Aggregates, Part 2, Specification for single sized aggregate for surface dressing, and the following requirements:-

Limestone chippings shall not be used.

The use of gravel will not be permitted unless chippings are produced by the artificial crushing of particles with a minimum dimension greater than 20mm.

Blast furnace slag shall conform to the additional requirements of BS1047.

The grading and flakiness index of chippings for use on Group 1 and 2 roads shall be within the limits given in Table 2 below.

The grading and flakiness index of chippings for use on Group 3 roads shall be within the limits given in Table 3 below.

The New European Specification will be effective in June 2004 making the grading limits subject to change

Table 2. Grading limits, specified size and maximum flakiness index for surface dressing aggregates for Group 1 and 2 roads.									
CLEAN CHIPPINGS						I. COATED CHIPPINGS			
(a) Grading limits									
BS test sieve	Nominal size of aggregates								
	20mm	14mm	10mm	6mm	3mm	20mm	14mm	10mm	6mm
	Percentage by mass passing BS test sieve					Percentage by mass passing BS test sieve			
28 mm	100	-	-	-	-	100	-	-	-
20mm	85 to 100	100	-	-	-	85 to 100	100	-	-
14mm	0 to 35	85 to 100	100	-	-	0 to 35	85 to 100	100	-
10mm	0 to 7	0 to 35	85 to 100	100	-	0 to 7	0 to 35	85 to 100	100
6.3mm	-	0 to 7	0 to 35	85 to 100	100	-	0 to 7	0 to 35	85 to 100
5mm	-	-	0 to 10	-	95 to 100	-	-	0 to 10	-
3.35mm	-	-	-	0 to 35	66 to 90	-	-	-	0 to 35
2.36mm	0 to 2	0 to 2	0 to 2	0 to 10	-	0 to 2	0 to 2	0 to 2	0 to 10
1.18mm	-	-	-	-	0 to 20	-	-	-	-
600	-	-	-	0 to 2	0 to 8	-	-	-	0 to 2
75	0 to 0.5	0 to 0.5	0 to 0.5	0 to 1	0 to 1.5	0 to 1.5	0 to 1.5	0 to 1.5	0 to 1.5
(b) Specified size									
	Minimum percentage by mass retained on BS test sieve (see clause 33 of BS 63)								
Specified size	65	65	65	65	-	65	65	65	65
(c) Maximum flakiness index									
Maximum flakiness index	25	25	25	40	-	25	25	25	40

Table 3. Grading limits, specified size and maximum flakiness index for surface dressing aggregates for Group 3 roads.

CLEAN CHIPPINGS						1 II. COATED CHIPPINGS			
(a) Grading limits									
BS test sieve	Nominal size of aggregates								
	20mm	14mm	10mm	6mm	3mm	20mm	14mm	10mm	6mm
	Percentage by mass passing BS test sieve					Percentage by mass passing BS test sieve			
28 mm	100	-	-	-	-	100	-	-	-
20mm	85 to 100	100	-	-	-	85 to 100	100	-	-
14mm	0 to 40	85 to 100	100	-	-	0 to 40	85 to 100	100	-
10mm	0 to 7	0 to 40	85 to 100	100	-	0 to 7	0 to 40	85 to 100	100
6.3mm	-	0 to 7	0 to 35	85 to 100	100	-	0 to 7	0 to 35	85 to 100
5.0mm	-	-	0 to 10	-	95 to 100	-	-	0 to 10	-
3.35mm	-	-	-	0 to 35	66 to 90	-	-	-	0 to 25
2.36mm	0 to 3	0 to 3	0 to 3	0 to 10	-	0 to 3	0 to 3	0 to 3	0 to 10
1.18mm	-	-	-	-	0 to 20	-	-	-	-
600	-	-	-	0 to 2	0 to 8	-	-	-	0 to 2
75	0 to 1	0 to 1	0 to 1	0 to 1	0 to 1.5	0 to 1.5	0 to 1.5	0 to 1.5	0 to 1.5
(b) Specified size									
	Minimum percentage by mass retained on BS test sieve (see clause 3 of BS 63)								
Specified size	60	60	65	65	-	60	60	65	65
(c) Maximum flakiness index									
Maximum Flakiness Index	35	35	35	40	-	35	35	35	40

The contractor shall notify the quarry to wash clean all siltstone from the chippings.

The maximum permissible dust content specified in Schedule 1 is the percentage by mass passing the 75mm 3S test sieve in Tables 2 and 3 as appropriate to the Road Group.

On “Single chippings” sites where clean 14mm or clean 10mm chippings are specified and the Contractor decides to use quartzite chippings, an increased rate of spread of binder of 0.1 1/m² over that specified in Schedule 1 will be required and the Contractor shall allow for this in his rates for the work.

Clean chippings shall be tested in accordance with BS812 by wet sieving except that a pressure filter shall be used to recover the dust.

Precoated (lightly coated) chippings will be manufactured in approved plant and be coated with bitumen of the appropriate grade with binder contents within $\pm$ 0.2% of the targets stated in table 8.1.3 of Road Note 39, 5th Edition, unless otherwise agreed by the Engineer.

Chippings shall not be overheated during mixing. Coking of the binder will result in rejection of the chippings.

Precoated chippings are not to be used with bitumen emulsions without the approval of the Engineer.

The Contractor shall not mix types of sources of chippings of the same size on any site. The source, type and specific gravity of chippings supplied by the Contractor shall be stated in Schedule 1 and Schedule 4.

The chippings shall have an effective polished stone value not less than that specified in the schedules.

Effective polished stone values of chippings quarried from sources local to Devon have been agreed with the Engineer as follows:-

Quarry	**Chipping type**	**Agreed EPSV**
ECC Venn DCC Barton Wood	Gritstone Gritstone	 60 to 64
ECC Blackhill ECC Hillhead ECC Rockbeare	Quartzite Quartzite Quartzite	 55 to 59
ECC New England ECC Greystone	Basalt Basalt	 50 to 54
ARC Whitecleaves Wainwrights Moonshill ARC Hingston Down	Basalt Basalt Granite	 45 to 49

Effective polished stone values from sources not included above shall be agreed with the Engineer before the works commence.

The maximum aggregate abrasion value shall be 12.

PREPARATORY SWEEPING

11. The Contractor shall remove all loose material from the carriageway surface by sweeping immediately before applying the binder. All adherent foreign material shall also be removed before the dressing commences. The waste material shall be removed and disposed of to a site provided by the Contractor in accordance with Clause 33.

TRAFFIC SAFETY MEASURE AND CONTROL

12. (a) (i) Traffic safety measures and control for roadworks shall conform to chapter 8 of the Traffic Signs Manual (1991) published by HMSO or any amendment thereof for the time being in force and to the requirements of the Engineer's representative on site.

All traffic signs, (including cones and cylinders), shall conform to BS 873 and shall also be in accordance with the Traffic Signs Regulations and General Directions 2002, (and subsequent amendments), and also be in accordance with the relevant chapter of the Traffic Signs Manual (1991) (and subsequent amendments).

All signs, (including cones and cylinders), shall be reflectorised with approved reflective material complying with the requirements set out in Tables 1 and 2 to Part 6 of BS 873 (1983).

All cones and cylinders shall comply with the requirements of BS 873 Part 8 1985 and traffic cones shall be category A, designation 1 or 2.

(ii) Except in the case of Group 1 motorway work the Contractor shall reposition, cover or remove signs, etc, as required during the progress of the works. No additional payment will be made for this work.

All signs shall be securely weighted down in position with sandbags or by another method approved by the Engineer.

(b) (i) Single line traffic operation will be required when the undivided clear width of carriageway available is less than 5.5 metres or when directed by the Engineer.

When single line traffic operation is required, the Contractor shall provide a width of at least 3 metres, or wider as necessary, at curves and junctions.

Traffic control for work on Group 1 and 2 roads shall include staggered coning and a method of traffic speed control as specified in Clause 25.

(ii) All traffic control for single line operation shall be carried out by the Contractor using manually operated "Stop Go"

signs or vehicle actuated portable traffic signals supplied by the Contractor and such signs shall conform with the requirements of Chapter 8 of the Traffic Signs Manual (1991) published by HMSO or any amendment thereof for the time being in force. The maximum length of single line traffic operation at any one time shall be dependent on traffic flow and shall not exceed:-

(a) where “Stop/Go” boards are used, the appropriate value given in Table 4.3 of Chapter 8 of the Traffic Signs Manual (1991)

and

(b) where VA portable traffic signals are used, the appropriate value given in Section 4.2.5 of Chapter 8 of the Traffic Signs Manual (1991).

The price inserted in the schedule of prices shall cover all the Contractor’s obligations in this respect. Where more than one Stop/Go boards is required at any location and the operators are not in visual contact, a two-way radio system shall be provided and operated by the Contractor.

(c) The attention of the Contractor is particularly directed to the following:-

(i) In addition to Advance Warning Signs fig. 564, Road Narrows fig. 517 and Traffic Control Ahead fig. 565.2 the following signs shall be placed in position before spraying commences.

SLOW WET TAR fig. 565.2 on <u>all</u> approaches to the area being sprayed.

LOOSE CHIPPINGS fig. 565.1 on all roads with plate stating MAX. SPEED 20 MPH on all Group 2 and 3 Roads. The signs and plates shall be placed on all approaches to, and junctions abutting the surface dressing works in accordance with Table A of Chapter 4 of the Traffic Signs Manual. Additionally, repeat signs and plates shall be positioned within the site at not more than 400 metres spacings, on each side of the road being dressed, or as directed by the Engineer.

The loose chipping boards and speed restriction plates are to remain in place until <u>all</u> loose chippings have been removed.

On roads where road markings will be erased by the application of the dressing, NO ROAD MARKINGS FOR X MILES fig. 565.4 on all approaches, and GIVE WAY MARKINGS ERASED or STOP MARKINGS ERASED, fig. 565.2 as appropriate, on all junctions, or as directed by the Engineer.

The road markings erased signs shall be maintained in position until the permanent road markings are reinstated.

(ii) All reasonable precautions shall be taken to control the speed and movement of traffic in order to avoid damage to the new dressing and to obviate danger to road users.

(iii) The work shall be phased in a manner acceptable to the Engineer for the safe operation of traffic.

(iv) In urban areas the Contractor will be responsible for informing the public of the work and ensuring possession of the carriageway to carry out the works. The Contractor shall:-

(i) supply and place in position approved notices on boards approx. 800 x 600 bearing the legend in black letters on yellow ground "NO PARKING – TAR SPRAYING TO TAKE PLACE ON" with provision for inserting days of the week. Not less than four such notices shall be placed in each street or road not less than 24 hours before it is intended to commence work;

and

(ii) distribute to affected properties a notice, the wording of which to be agreed with the Engineer before the works commence, informing the public of the proposed work;

or

(iii) carry out some other method of informing the public of the proposed works as approved by the Engineer.

(d) Where work is to be undertaken within 800 metres of a railway level crossing the Contractor shall notify the Engineer at least seven days before commencing work of his intention to do so.

(e) All vehicles used by the Contractor shall display at the rear in a conspicuous place signs reading 'HIGHWAY MAINTENANCE' in black letters on yellow background. The lettering shall be 150mm high standard type for lorries and 50mm high standard type for other vehicles. All vehicles shall in addition be equipped with amber rotating beacons of approved type which shall operate continuously whilst the vehicle is working on any highway.

(f) The Contractor's employees, whilst on the public highway shall wear retro-reflective clothing in accordance with the recommendations of Chapter 8 of the Traffic Signs Manual (1991) published by HMSO and BS6629 or any amendment thereof for the time being in force and have accreditation / qualifications for chapter Eight to work on the Highway.

TRAFFIC SAFETY MEASURES AND CONTROL

13. The following additional conditions shall apply to group 1. Roads.

GROUP 1 ROADS

(a) The Engineer will erect the signs and close the appropriate traffic lanes before the time stipulated for commencement of work and remove the signs and open the appropriate traffic lanes after the completion of work (24 hours notice of this requirement is necessary).

(b) No work shall be started until the signs, properly illuminated when applicable, cones and other warning devices have been erected.

BINDER DISTRIBUTOR

14. The binder distributor shall comply with B.S. 1707 (1989) and with the following additional or superseding requirements:

(a) Testing & Test Certificate Testing of the binder distributor shall be carried out in accordance with BS 1707 and the following additional or superseding requirements:

The "depot tray test(s)" for each type of binder that will be used through the distributor under this contract shall be carried out between 1st February and 1st April of the year in which the work is undertaken.

The test(s) shall be carried out by the Contractor, who shall inform the Engineer of the time and location of the test(s) at least two weeks in advance. The Contractor shall afford to the Engineer all reasonable facilities to enable him to witness the testing.

Before testing commences the Contractor shall supply the Engineer with the name and telephone number of the Contractor's representative who will oversee and direct the entire calibration of the binder distributor.

The test(s) shall be carried out at the Contractor's Depot, nearest to, or in the County of Devon, between the hours of 9am and 5pm, Monday to Friday inclusive. The Contractor shall ensure that all preparatory work is completed to enable the testing to be undertaken at the stated location and time. Where the Engineer has to visit a test location to witness a calibration after 1st April, or return to witness the retesting of a distributor, or return as a result of abortive testing, the cost of the Engineer's time shall be borne by the Contractor. Prior to the depot tray test, the actual dimensions and volumes of the trays shall be checked by the Contractor under normal testing conditions and any variation(s) shall be allowed for in any subsequent calculations. The pressure gauges and thermometers shall be removed and calibrated against traceable standards by the Contractor and shall be accurate to the limits specified in BS 1707 and the specification. All gauges shall be uniquely and indelibly numbered. The Engineer shall be informed by the Contractor of the date and location of this pre test work and rate of spread specified. The chart shall also show the vehicle registration number, the date tested, the test pressure and temperature, the height of spray bar and the type and viscosity of the binder used in the test.

Copies of both the transverse distribution test certificate and the road speed chart shall be carried in the vehicle during the surface dressing operations and shall be available for inspection by the Engineer on request.

(b) Guide The machine shall be fitted with an adjustable guide clearly visible from the driving machine may be accurately driven to ensure uniformity of line and overlap.

(c) Capacity and Filling Arrangements Unless otherwise agreed by the Engineer, the binder tank shall be capable of containing at least 5,000 litres of binder and its filler manhole shall incorporate a suitable filter manhole through which all binder shall pass into the tank in order to exclude suspended matter which might cause partial or complete jet blockage. Suitable screwed couplings to the pipes shall be provided to ensure the safe transfer of binder from the supply tank to the distributor.

(d) Distribution System

(i) The binder shall be spread uniformly on the surface using either (a) an expandable or extendable spray bar capable or spraying widths up to at least 3.8m in increments of 150mm or (b) a spray bar capable of spraying widths up to 2.3m in increments of 150mm. Unless otherwise specified by the Engineer, expandable spray bars shall be used on Group 1 & 2 roads. The spraying from the end jets shall be regulated by baffles to give a full spray across the whole width of the bar. The machine will not be permitted to travel from site to site with any part of the spray bar projecting beyond the normal width of the vehicle. Spray bars of Imperial dimensions approximately to the metric sized quoted above will be acceptable.

(ii) The type of jet and the spacing of the jets along the spray bar above the road surface shall be such that the distribution of the binder over the sprayed width of the road is of the required uniformity. Jets shall be tested daily by spraying individual jets to check that a regular spray is obtained. Jets shall be cleaned or changed as necessary. After each separate application of binder the spray bar shall be reset to the height specified at the time of the most recent test of the binder distributor, so that the necessary uniformity of distribution is maintained. For this purpose the binder distributor shall be fitted with an accurately calibrated and easily read means of rapidly checking the spray bar height above the road.

(iii) The spray bar shall be so designed, that whilst the distributor is in motion, the bar can be easily and rapidly moved in transverse direction to either side of the distributor to a minimum distance of 200mm outside the extremity of either rear wheel to ensure that longitudinal joints conform with the requirements of Clause 22.

(iv) The binder distributor shall be equipped with a spraying lance to undertake work on footways and irregularly

shaped areas of carriageways not accessible to a machine.

(v) The binder distributor shall be equipped with two pressure gauges.

Pressure gauges shall be graduated in pounds per square inch or metric equivalent, and be accurate to ± 5%. Spare, calibrated gauges shall be supplied and fitted by the Contractor on the request of the Engineer to enable any suspected malfunction to be checked by substitution.

(vi) The Engineer shall, if he considers it necessary, call upon the Contractor without cost to the Employer to submit his machines for further tests during the progress of the work. During the period of the contract, road tray and or field tests may be carried out to check the longitudinal and transverse distribution of binder, and in the event of the transverse tests being unsatisfactory, the Engineer will require the machine to be re-tested before doing any further work. If the machine conforms with the specification when so checked the cost of testing will be borne by the Employer, but if it does not conform the cost of testing will be borne by the Contractor.

(vii) Thermometers shall be graduated in degrees centigrade. Spare, calibrated thermometers shall be supplied and fitted by the Contractor at the request of the Engineer to enable any suspected malfunctions to be checked by substitution.

(viii) The Contractor must jointly dip the Binder Distributor with the Engineer and agree the readings as required by the Engineer on site.

LOADING OF CHIPPINGS

15. When the Contractor is required to load, transport and apply the chippings, he shall provide on the site a pneumatic tyred loading shovel or other equipment approved by the Engineer. The Contractor shall ensure that no foreign matter is loaded into the gritting plant. The Contractor shall ensure that chippings are not spilled on carriageways or footways during the operations, and that stockpiles are always kept clean and tidy.

GRITTING PLANT

16. For work on Group 1 and 2 roads, the Contractor shall spread chippings using a purpose built, self propelled, controlled metering chipping spreader designed to give an accurate spread of chippings, irrespective of road speed and give a variable width of spread controlled by the operator during progress. For work on Group 3 roads the chipping spreading plant shall be either a purpose built self propelled, controlled metering chipping spreader or a metered gritter incorporating a mechanical device controlling the rate of spread of chippings.

For Racking-in work on Group 1 and 2 roads, the larger sized chippings shall be spread using the purpose built, self propelled controlled metering chipping spreader as specified above. The smaller size chippings shall spread using either an additional purpose built, self propelled controlled metering chipping spreader, or a metered gritter as specified above for Group 3 roads.

APPLICATION OF CHIPPINGS "SINGLE CHIPPINGS"

17. (a) Type 1 Contract Sites:

The rate of spread of chippings shall be determined by the Contractor and shall be sufficient to cover the binder film. The rate of spread shall be appropriate to the chipping size, shape and specific gravity to achieve 100 to 110 per cent shoulder to shoulder coverage (as determined by BS 598: Part 108 BSI 1999(b) at the time of laying.

The chippings shall be applied evenly on the sprayed surface within 20 seconds of applying the binder.

Excess chippings at joints shall be removed before rolling.

During spreading operations, the Contractor shall ensure that chippings are not spilled on carriageways or footways.

(b) Type 2 Contract Sites:

Unless otherwise instructed by the Engineer, the Contractor shall spread chippings evenly on the sprayed surface at a rate within ± 5% of the rate specified in Schedule 1.

The chippings shall be applied within 20 seconds of applying the binder.

Excess chippings at joints shall be removed before rolling each dressing.

During spreading operations, the Contractor shall ensure that chippings are not spilled on carriageways or footways.

The actual rate of spread of chippings shall be measured by the tray test as described in Appendix D of Road Note 39 5th Edition.

APPLICATION OF CHIPPINGS "RACKING IN"

18. (a) Type 1 Contract Sites:

The rate of spread of the larger sized chippings shall be determined by the Contractor and shall be appropriate to the chipping size, shape and specific gravity to achieve a 90 per cent shoulder to shoulder coverage (as determined by BS 598: Part 108 BSI 1990b) at the time of laying.

The larger sized chippings shall be applied evenly on the sprayed surface within 20 seconds of applying the binder.

The smaller sized chippings shall be applied immediately after the rolling of the larger sized chippings at a rate of spread determined by the Contractor sufficient to fill the interstices between the larger sized chippings with the minimum of excess.

Excess clippings at joints shall be removed before rolling each dressing.

During spreading operations, the Contractor shall ensure that chippings are not spilled on carriageways or footways.

(b) Type 2 Contract Sites:

Unless otherwise instructed by the Engineer, the Contractor shall spread chippings evenly on the sprayed surface at a rate within ± 5% of the rate specified in the Schedule 1.

The larger sized chippings shall be applied within 20 seconds of applying the binder.

The smaller sized chippings shall be applied immediately after the rolling of the larger sized chippings.

Excess chippings at joints shall be removed before rolling each dressing.

During spreading operations, the Contractor shall ensure that chippings are not spilled on carriageways or footways.

The actual rate of spread of chippings shall be measured by the trey test as described in Appendix D of Road Note 39 5th Edition.

ROLLING "SINGLE CHIPPINGS"

19. Immediately after application of the chippings, the dressing shall be rolled. Unless otherwise specified by the Engineer steel wheeled roller of 6 of 8 tonnes weight shall be used with 1 or 2 passes. The steel wheeled roller shall be provided with a water tank of not less than 200 litre capacity, a suction pump and connection to a distributor which shall allow water to be sprayed uniformly over each wheel together with a scrubber or scraper.

The steel wheeled roller shall be immediately followed by either a rubber coated vibrating steel drum roller or a pneumatic tyred roller. Rubber coated vibrating steel drum rollers shall have a minimum weight of 7 tonnes and shall give a minimum of four passes over the entire area. Vibrating rollers shall not be used in vibrating mode on bridge decks. Where dressing is undertaken on any bridge the roller shall be used in non-vibrating mode and the number of passes increased to six over the entire area. Pneumatic tyred rollers shall have a minimum weight of 7 tonnes and a minimum tyre pressure of 70 psi, and shall give a minimum of four passes over the entire area.

Rolling shall continue until the chippings are satisfactorily embedded into the binder film. Roller wheels or tyres shall not be allowed to come into contact with any unchipped areas of binder. Rollers shall be provided with a water tank of not less than 200 litres capacity, a suction pump and connection to a distributor, which shall allow water to be sprayed uniformly over each wheel of tyre together with a scrubber or scraper.

ROLLING "RACKING-IN"

20. Immediately after the application of the larger sized chippings, the dressing shall be rolled with a single pass of a steel wheeled roller of 6 to 8 tonnes weight. Roller wheels or tyres shall not be allowed to come into contact with any unchipped areas of binder. The steel wheeled roller shall be provided with water tank of not less than 200 litres capacity, a suction pump and connection to a distributor which shall allow water to be sprayed uniformly over each wheel together with a scrubber or scraper. Immediately after the application of the smaller sized chippings, the dressing shall be rolled with a minimum of four passes or a rubber coated vibrating steel drum roller or a pneumatic tyred roller, as specified for "Single Chippings" in Clause 19, over the entire area.

Vibrating rollers shall not be used in vibrating Mode on bridge decks. Where dressing is undertaken on any bridge the roller shall be used in non-vibrating mode and the number of passes increased to six over the entire area.

PROTECTION OF ADJACENT SURFACES AND STREET FURNITURE

21. Binder shall be sprayed to the full width of the carriageway or in lanes as directed by the Engineer. The binder shall be sprayed up to the carriageway edge without overlapping thereon or on the kerbs, performed channels, verges, footways, or any structure adjoining the highway. Any contamination of adjacent surfaces or street furniture shall be removed immediately by the Contractor. The Contractor shall provide, fix, and remove on completion of each site approved masking material to protect all road studs and shall cover all manhole covers, fire hydrants, catchpit covers, and other similar fixtures prior to dressing to give complete protection from the binder. The Contractor shall record the position of each item of ironwork before masking commences to enable all fixtures to be easily located upon completion of the surface treatment. The Contractor shall submit details of his proposed method of recording to the Engineer for approval before the Works commence. The Contractor shall ensure that all masking material is removed from all studs and ironwork etc., at the end of each days work and the waste material is disposed of in accordance with Clause 33. All covering material shall be provided, placed, removed and disposed of at the Contractor's expense. The use of oil and/or grit, dust, soil etc as a means of masking will not be permitted.

The Contractor shall ensure that the access to any fire hydrant within the limits of the Works is maintained at all times and under no circumstances shall any hydrant or its marker plate be permanently covered or obstructed.

LONGITUDINAL JOINTS

22. Longitudinal joints shall be made with the spray bar offset to ensure that the wheels of the distributor do not run on wet binder. The overlap shall be as specified on the latest test certificate for the distributor. Unless otherwise agreed by the Engineer, longitudinal joints shall coincide with lane markings when this is not rendered impracticable or undesirable by other factors.

TRANSVERSE JOINTS

23. If the standard of transverse joints is not to the satisfaction of the Engineer he will require that they shall be made by masking with a protective mat or paper strip not less than 1 metre wide at the end of the finished lane. Spraying shall then commence on the protective mat or strip.

SURPLUS CHIPPINGS

24. The Contractor shall remove surplus chippings from the carriageway by approved suction sweeper, and from adjacent footways, in accordance with the following requirements, and dispose of the chippings as directed by the Engineer.

(a) For all Group 1 and all Group 2 Roads and Urban Group 3 roads: On the same day the dressing is carried out and as soon as the chippings have become securely held by the binder unless otherwise directed by the Engineer.

(b) For rural Group 3 Roads: Within 48 hours of completion of the work except at intersections, bends and junctions, where excess chippings shall be removed before nightfall on the day of treatment.

The Contractor shall be responsible for keeping the dressing free of loose and surplus chippings for a period of two weeks after the completion of the dressing on rural sites and three weeks after completion of the dressing on urban sites, and in that period shall carry out such sweepings as are necessary for this purpose. Adjacent footways and adjoining carriageways and footways where traffic has carried excess/loose chippings past the limit of works shall also be maintained free of loose and surplus chippings for the same period.

The Contractor shall make available sufficient mechanical sweepers for both preparatory sweeping and for the removal of surplus chippings and shall make the appropriate arrangements for the removal of surplus chippings from adjacent areas of footway etc., which cannot be reached by the mechanical sweeper.

PROTECTION OF NEW DRESSING

25. Traffic travelling at unrestricted speed shall be kept off newly dressed surfaces until the Engineer is satisfied that the chippings are securely held by the binder.

Traffic Control for sections of Group 1 and 2 Roads that exceed 5.5 metres in width, shall include the placing of staggered cones at not exceeding 10 metre intervals for the whole length of the carriageway being dressed to protect the wet edge of the binder and to prevent overtaking. Alternate cones shall be moved as necessary to carry out the remainder of the carriageway dressing and then moved back to the staggered layout.

The staggered cones shall only be removed immediately prior to sweeping.

The Contractor shall control the speed of traffic on newly dressed areas on Group 1 and 2 roads until the chippings have wholly adhered to the binder (and the emulsion has broken if emulsion is being used), and until the first sweep requirements of Clause 24 are complied with. The speed of traffic shall be controlled by a method approved by the Engineer (e.g. Stop and Go boards or convoy systems).

If the Engineer so requires the Contractor shall supply and apply approved fine aggregate to any area of the dressing for "dusting down" purposes. The aggregate used shall be clean, dry and absorbent and shall be evenly graded from 3mm to dust. The area so treated shall be agreed between the Engineer and the Contractor and shall be paid for at the rate stated in the Schedule 3.1

PROTECTION OF THE DRESSING DURING THE MAINTENANCE PERIOD

26. The Engineer may instruct the Contractor to return to any site listed in the Schedule to supply and apply approved fine aggregate for "dusting down" purposes. The aggregate used shall be clean, dry and absorbent and shall be evenly graded from 3mm to dust. The area so treated shall be agreed between the Engineer and the Contractor and shall be paid for at the rate stated in Schedule 3.2

Such "dusting down" shall be carried out within one hour of the receipt of instruction unless otherwise agreed by the Engineer.

CONTRACTOR TO BE ON CALL AND COMMUNICATIONS

27. (i) The Contractor shall supply the Engineer with the name, address and telephone number of two representatives who may be called upon outside site working hours to put in hand immediately any works that may be deemed necessary to make the site safe associated with the works within the Contract. Details of representatives to be supplied in Schedule 4.

The Contractor's contact arrangements, as outlined above, shall also be stated on the reverse of the Contractor's Roadworks Ahead signs placed on site.

(ii) The Contractor shall ensure that his site representative can be contacted by mobile telephone at any time during normal and agreed site working hours. Details of the Contractor's mobile telephone number shall be given in Schedule 4.

(iii) Between 08.30 and 09.00 hours on each day when work is programmed to take place, the Contractor's site

representative shall inform the relevant Engineer's Representative's office, as detailed in Appendix 8 of the proposed sites to be dressed on that day.

PUBLICITY 28. (i) The Contractor or any agents or servants in his employ shall not give any information concerning the works for publication in the press or on radio, television or cinema screen or elsewhere without the written approval of the Engineer.

RETURNS TO BE SUBMITTED BY THE CONTRACTOR 29. The Contractor shall notify the Engineer's Representative at the end of the day when the Works have been delayed by inclement weather, of the extent of the delay and shall submit to the Engineer's Representative each week a record of Inclement Weather Delays on a form that shall be provided by the Engineer and a specimen of which is shown at Appendix 1. Nil returns shall be submitted and in the event of doubt existing as to whether or not delays occurred and the Contractor not having complied with his Clause it shall be deemed that such delays did not occur.

USE OF MAINS WATER 30. The Contractor shall be responsible for making his own arrangements with the Water Authority for obtaining mains water for the Works and he shall comply with all the local conditions regarding the use of water. The Contractor shall agree with the Water Authority the location of all hydrants from which mains water can be abstracted for the Works, together with abstraction methods, receiving apparatus, draw off rates and times, and the Contractor shall provide constant attendance when water is being drawn off any hydrant.

DISPOSAL OF SURPLUS 31. All materials to be disposed of in tips off the Site shall be disposed of in accordance with the requirements of the Environment and Planning Act 1990, and in a manner fully acceptable to the appropriate Planning Authority and Waste Regulation Authority.

The Contractor shall give details of the tipping sites he proposes to use, at the time of tendering.

The Contractor must check with the relevant County Council Planning Division that the proposed site for tipping has a current Planning Permission for that use.

The Contractor shall also check with Torbay Council as Waste Regulation Authority that the proposed site has a current and appropriate site licence for that use.

DRESSING BY HAND 32. Unless otherwise agreed with the Engineer, all surface dressing shall be completed using the mechanical plant Specified in the Contract. On small irregularly shaped areas, in accessible to a binder distributor and where the prior approval of the Engineer has been obtained, the binder shall be spread uniformly on the surface using the binder distributor spraying lance. At these locations the chippings shall be evenly spread on the sprayed

surface, by hand if necessary, within the period and to the rate specified in the Contract. All other work at these areas such as preparatory work, rolling and aftercare shall be completed in accordance with the Contract requirements for dressing with mechanical plant.

APPENDIX 1

RECORD OF INCLEMENT WEATHER DELAYS

TORBAY COUNCIL

SURFACE DRESSING CONTRACT

APPENDIX 1 RECORD OF INCLEMENT WEATHER DELAYS (HOURS LOST)

CONTRACT …… **CONTRACTOR** ……

WEEK ENDING ……...

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
SURFACE DRESSING							
97							

Agreed on behalf of TORBAY COUNCIL

Signed ……..

Date …….

Contractor

Signed …….

Date …….

APPENDIX 2

CHIPPING LANDING SITE

APPENDIX 8

ENGINEER'S REPRESENTATIVE'S OFFICE
UNLESS ADVISED DIFFERENT

Highways & Transportation
Community & Customer Services
Torbay Council
Lower Ground Floor
Town Hall
Torquay

Telephone number: (01803) 207716

2 Contract and Performance Review Requirements

2.1 **Management Information**

Applicants should, by way of on-going Contract performance be prepared to produce management information. The exact format and duration will be agreed between the Contractor and Authority Authorised Representative. The Contractor should be able to produce the agreed management information in an electronic format such as Microsoft Excel or any other such format as specified by the Authority. This will be at no cost to the Authority.

Applicants shall be able to produce management information for the following, but not limited to:-

(a) Response to stipulated call out times;
(b) Number of calls returned within one hour;
(c) Amount of work carried out both on-site and off-site;
(d) Invoice payment;
(e) Placing of pre warning signs within required timescales;
(f) Notification to general public within required timescales;
(g) Dealing with third party compensation claims;
(h) Ensure car owners are notified within time scales and parked vehicles moved;
(i) Materials subject to testing by the client; and
(j) Contractors' calibration certificates for plant required submitted to the client when requested.

2.2 **Brexit**

Given some of the recent experiences during the COVID-19 pandemic, the Contractor is expected to put into place appropriate measures to safeguard continuity of supply and control and communication within their supply chain, and to guard against their supply chain breaking down or materials/products becoming unavailable or limited in stock, causing delays in contract delivery.

3 Health & Safety

The Health & Safety requirements are as set out in the Conditions of Contract.

4 Invoicing

4.1 The following invoicing process will apply:

- Invoices must be addressed to Torbay Council payments.section@torbay.gov.uk
- Frequency of submission of invoices will be monthly or on completion of works;
- Invoices must bear a valid purchase order number;
- Form of submission is by post or email;
- Payment will be based on final measure;
- Payment will be via BACS within 30 days of receipt of an undisputed invoice;
- Remittance advice will be via email or post;
- Payment will be via application of payment.

5 Added Value

5.1 Further Services Offered

The Applicant will be expected to suggest as part of its response to the Evaluation Questions any additional products or services that they may be able to offer as part of this Contract or any other added value that their offer might be able to bring to the Authority. Applicants are expected to build any such offers into their submissions regardless of whether specific questions are asked along these lines or not.

5.2 Social Value, Sustainability, Environmental Considerations

5.2.1 The Authority is seeking a Contractor who will add value to the Contract by providing additional community benefits which support the Council's ambitions for a prosperous and healthy Torbay, as identified in the Community and Corporate Plan 2019 -23:

http://www.torbay.gov.uk/council/policies/corporate/corporate-plan/

In relation to Sustainability and Environmental Considerations the Applicant will be required to maintain compliance with WEEE Regulations where appropriate and effectively manage the Contract to achieve the following:

- Minimising the impact on the environment;
- Noise reduction;
- Sourcing materials locally where appropriate;
- Sustainable disposal of unwanted consumables and waste;
- Recycling and minimising landfill/incineration;
- Addressing climate change;
- Reducing carbon footprint; and
- Management of equipment at end of life.

6 Awarding the Contract on Behalf of Other Contracting Authorities

6.1 The Authority is not purchasing on behalf of other contracting authorities. However the Contract will be managed by SWISCo Ltd, a wholly owned company of Torbay Council.

6.2 SWISCo Ltd are commissioned by Torbay Council to operate as the Highway Authority on its behalf and exercise such powers as necessary.