

SPECIFICATION SERIES 700

APPENDIX

PAVEMENTS

BROOKLEIGH, FAIRBRIDGE WAY IMPROVEMENTS

Homes England

Project number: 60610807
60610807-ACM-CS-FBW-SP-HW-0700

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Foreword

Scope of Appendices

All appendices relevant to the Fairbridge Way Improvements have been produced in accordance with the Specification for Highway Works.

Contractual references and terminologies used within the appendices are to be discussed and agreed with Homes England, as part of the scheme contract.

Any Appendix referred to in the Specification which is not used shall be deemed not to apply.

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Appendix 7/1: Permitted Pavement Options

Road Construction

This appendix shall be read in conjunction with Series 700 of the Specification for Highway Works (SHW). The system shall be designed and constructed in accordance with the relevant sections of Design Manual for Roads and Bridges, Highway Construction Details (HCD).

Schedule 7/1: Permitted Pavement Options

Drawing Ref.	Area of Pavement Construction	General Requirements	Permitted Pavement Option
60610807-ACM-CS-FBW-DR-HW-0700	New raised table ramp construction – flexible construction	Schedule 2	P1
60610807-ACM-CS-FBW-DR-HW-0700	New raised table, table top construction – rigid construction	Schedule 2	P2

Schedule 7/2: General Requirements

Grid for checking surface levels of pavement courses [702.4]:	Longitudinal dimension	10m ctrs
	Transverse direction	1.5m ctrs
Surface regularity [702.5, Table 7/2]	Category of Road:	Category B roads
Interval for measurement of longitudinal regularity [702.7]: A 3m long rolling straight edge should be used to measure longitudinal surface regularity. The surface regularity shall be that for Category B Roads.		
Interval for measurement of transverse regularity [702.8]: The transverse surface regularity shall be measured using a 3m straight in up to 50 locations.		
Whether Surface Macrotexture is required [921.2 – Table 9/3]		Yes
Measurement of Surface Texture [921.2 – Table 9/3] Average not less than:		0.7
The surface texture is to be measured using the Sand Patch Method described in BS598. The texture depth should be either 0.8mm to 1.3mm depending on traffic speeds. The measurement of the texture depth must be completed prior to the section of road being opened to traffic.		
Surface course joints [903]. The Employer reserves the right to require the Contractor to cut back joints using a frame mounted saw. This over-rides the basic provisions of BS 594987:2015 when instructed by the Project Manager or his representative on site. Any such instruction shall not compromise the requirements of the above British standard.		
The determination of compaction on dense base and binder course asphaltic concrete shall be determined by Percentage Refusal Density (PRD) in accordance with sub-Clause 929. However the scheme promoter or designer may propose in-situ nuclear density testing in the Backscatter mode for compliance testing. Reference densities at 93% PRD are to be supplied for each mixture of base and binder course to be used intends .		
Gravel aggregates are not permitted in any bituminous construction without consent of the overseeing authority. Where gravel is used, suitable adhesion agents shall be used to ensure bond between binder and aggregate. Gravel aggregate shall not be used in surface courses.		
All ironwork that requires resetting shall be set to new levels prior to the surfacing being laid.		

Schedule 7/3: Permitted Construction Materials

Pavement Layer	Option P1		Option P2	
	Material Ref.	Thickness (mm)	Material Ref.	Thickness (mm)
Surface Course	SC1	50	PV1	80
Bond Coat	C65BP	-	-	-
Binder Course	Reg 1	Varies (30 min)	BED1	30
Base	-	-	BC1	150
Sub-base	-	-	-	-
Capping layer	-	-	-	-
Total Thickness		Min 80		260

Schedule 7/4: General Requirements for Construction Materials

Refer to Specification for Highway Works

Schedule 7/5: Requirements for Construction Materials

Mat.Ref.	SHW Clause	Description	Details required	Requirement
SC1	943	Hot Rolled Asphalt Surface Course	Mixture designation	HRA 35/14 F surf
			Resistance to permanent deformation classification (cl 943.6 & PD 6691 Table C.3)	Class 1
			Permanent deformation	To be monitored in the permanent works
			Coated chipping size	14/20 mm
			Required declared PSV for coarse aggregate	55
			Required maximum AAV category for chippings	12
			Surface macrotexture measurement	Required
	915	Chippings	Required declared PSV for coarse aggregate	55
			Required declared maximum AAV	12
			Required coated chipping	14/20 mm
Reg1 ^[Note 2]	937	AC 20 dense bin 40/60 Des Regulating Course	Mixture designation:	AC 20 dense bin 40/60 Des
			Resistance to permanent deformation:	WTR1
			Resistance to permanent deformation:	To be in accordance with 929
C65BP	920	Bituminous spray	Refer to Appendix 7/4 for details.	Refer to Appendix 7/4 for details.
PV1		Concrete Block Paviour (colour red)	BS EN 1338	80mm depth, 240X160mm & 120x160mm
BED1		Bedding Mortar	BS 7533	
BC1		ST4 Concrete	BS 8500	

Notes to Schedule 5

- Reg1 aggregate size shall be selected depending on the regulating layer thickness, in accordance with BS 594987.
 - It is not good practice to leave a very thin layer of material and it is not possible to regulate to 0mm. If regulating layer has to be less than 15mm, it can be compacted to 15mm and then planed to the desired thickness.
- WTR class 1.
- Warm mix asphalt (WMA) in accordance with Clause 908 is preferred as opposed to conventional hot mix asphalt due to its environmental benefits.
- Temporary running of a new bituminous layer other than the surface course shall be in accordance with MCHW Series 900 Clause 903. The running surface shall not be less than 55 PSV.

Appendix 7/2 – Excavation, Trimming and Reinstatement of Existing Surfaces

1. The location of tie-ins between new and existing pavements are indicated on drawing 60610807-ACM-CS-FBW-DR-HW-0700.
2. For pavement Options P1 & P2 as specified in Schedule 1, planning/milling is required such that the specified thicknesses identified in Schedule 3 can be placed to the new finished road levels.
3. Existing pavement is to be excavated / milled to facilitate tie-in of new and existing carriageway.
4. Edges of existing pavements to be retained shall be cut to neat lines by sawing. Immediately before bituminous layers are to be installed abutting the existing pavement, the edges are to be cleaned of all loose material and coated in accordance with MCHW Clause 903.
5. After milling, the milled surface shall be visually inspected and any lenses of existing surfacing material remaining shall be removed and the milled surface shall be thoroughly swept to ensure removal of all debris.
6. Where a trench is required in an existing bituminous pavement, the thickness of bituminous material required in the reinstatement will be as per the requirements for new carriageway. Below the bituminous layers the trench should be reinstated with 300mm of capping material and 150mm of sub-base material, both fully compacted. The same overlap of materials should also be used where any new carriageway, cycle track or footway / footpath construction meets any existing construction.
7. Unless otherwise stipulated by the Project Manager, trenches in carriageway shall be:
 - Backfilled with suitable compacted material up to a level 420mm below the Base, then finished up to Base level with compacted sub-base. The level of compaction achieved for the backfill and sub base layers shall be tested, when directed by the Project Manager. A minimum CBR value of 30 is required at the top of the sub-base layer.
 - The remaining bituminous/concrete layers shall be the same thickness as the existing layers. The layer thickness is to be agreed with the Project Manager prior to laying of materials.
8. Where Pavement Quality Concrete for Carriageway Reinstatement is proposed it shall be C32/40 in accordance with BS 8500-1.
9. Reinstatements shall comply with the recommendations in 'Specification for the Reinstatement of Openings in Highways' issued by HAUC. All reinstatements shall be using Method A-All Permanent Reinstatement.
10. The Project Manager shall assess areas of the planed surface for observed cracks.
11. All road surfaces shall be cut back using diamond saws.
12. Where new construction of bituminous material abuts existing construction, whether it be for kerbs or other bituminous construction, the joint between the two shall be sealed with hot poured bitumen.
13. Preparation of existing pavement surfaces prior to overlaying with bituminous materials shall be undertaken such that:
 - a) All surplus material shall be dealt with in accordance with the Site Waste Management Plan (SWMP), and Construction Environmental Management Plan (CEMP).
 - b) The existing surface shall be thoroughly swept using a mechanical brush and all surplus material shall be removed and dealt in accordance with the SWMP and CEMP. The milled surface shall be inspected on site prior to the proposed treatment and any defects observed rectified.
 - c) Reference should be made to Manual of Contract Documents of Highway Works Volume 2 Series 700, Clause 706 where appropriate.

14. When existing signs or items of street furniture are removed from paved surfaces the resultant void shall be reinstated in accordance with the requirements of the "Specification for the Reinstatement of Openings in Highways" issued by the Highway Authorities and Utilities Committee.
15. All areas of carriageway damaged or disturbed during the works is to be reinstated.

Appendix 7/4 – Bond Coats, Tack Coats and Other Bituminous Sprays

1. Bituminous sprays shall comply with Clause 920 of the Specification for Highway Works and with the particular requirements of this Appendix.
2. Areas of pavement to be treated with a bond coat shall be as described on the contract drawings and shall be used in the following areas:
 - a. Milled areas of existing pavements;
 - b. Areas of existing pavements to be overlaid;
 - c. Areas of new bituminous materials left exposed for more than 4 days;
 - d. Areas that have been trafficked by vehicles other than asphalt contractor's vehicles;
 - e. Areas other than the above on the instruction of the Project Manager.
 - f. Tie-ins between cold and hot applied bituminous constructions.
3. Bond coat to be as follows:
 - Polymer modified bituminous spray class C65BP (2 to 5, Minimum rate of spread 0.31litres/m² and in compliance with BS 594987 Table 2. The method of spread shall be in accordance with BS 434-2, Section 14.
4. Bond coats shall have a British Board of Agrément HAPAS Roads and Bridges Certificate. In The event that no such certificates have been issued, they shall have the approval of the Overseeing Organisation.

Information to be provided by the Contractor

5. The Contractor shall provide the following information, or prior to the commencement of the work.
 - a. The product or products he proposes to use together with their data sheets, product identification data, cohesivity data as specified. (Sub-Clauses 920.2, 920.3, 920.4 and 920.5).
 - b. For each product, a copy of the BS EN ISO 9001 certificate showing the name of the manufacturer, the name of the certification body and the reference number and date of the certificate (sub-Clause 920.5).
 - c. The spraying equipment proposed, and a test certificate (sub-Clauses 920.7 and 920.9).
 - d. The source or sources of blinding material proposed (sub-Clause 920.12).
 - e. Contingency plans in the event of any breakdown.
 - f. The results of any other tests or other data the Contractor considers would assist the Overseeing Organisation in assessing the technical merit of the treatment such as:
 - I. Tackiness test and/or traffic ability time and methods of test;
 - II. Breaking time test results for different weather conditions and substrates;
 - III. Test results for bond to new laid concrete. The data supplied shall not be more than 6 months old.

Appendix 7/9 – Cold-Milling (Planing) of Bituminous Bound Flexible Pavement

1. Cold milling shall be carried out as required to accommodate the pavement design shown on the Site Clearance drawing 60610807-ACM-CS-FBW-DR-HW-0200.
2. It is anticipated that the existing pavement construction varies. This shall be monitored during planing works, and adjustments if required to ensure that thin slithers of loose material do not remain.
3. The *Contractor* shall ensure that where new surfacing abuts existing surfacing, the existing surfacing is saw cut and sealed with hot bitumen in accordance with Clause 903.
4. The Contractor shall NOT plane areas where there are surface induction loops (traffic signal, traffic counters etc) without the prior approval of the Project Manager.
5. Cold Milling shall also be used to remove sufficient of the existing pavement to lay the minimum thickness of new surface course and/or binder course, as shown on the drawings. However, the cold milling must be at sufficient depth so as to remove any chippings that had been rolled into the existing hot rolled asphalt and/or all surface dressings (particularly the binder course) that had been applied to the existing pavement. Where hot-chipped surface dressing has been laid it may remain in place subject to the designer's inspection.
6. Where the new wearing course is sufficiently above the existing surface such that there is a need for a regulating course between the existing surface and the new wearing course then there shall be no need for cold milling of the existing surface. Scarify existing surface course.
7. Any surplus material and debris shall be dealt with in accordance with the Site Waste Management Plan (SWMP).

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