

APPENDIX 11/1: Kerbs, Footways and Paved Areas

1. Permitted Footway / Cycleway Options – Schedule 1

Area	Permitted Pavement Option			
	Surface course only	Surface course & binder course	Surface course & base course	New construction & full reconstruction
A: Bituminous footways, cycleways and light vehicle crossovers serving no more than 2 dwellings	F1	F2	-	F4
B: Slab / SEP footways (only for use in conservation areas), and tactile paving	S1	-	-	S4
C: Heavy duty vehicle crossover (i.e. serving more than 2 dwellings) and footways designed to accommodate maintenance vehicles	HD1	HD2	-	HD4
D: Block paved footways and light vehicle crossovers serving no more than 2 dwellings (not applicable to shared spaces).	BF1	-	-	BF4
E: Block paved general residential streets, shared spaces and car parks.	BR1	-	BR3	BR4
F: Footway works under the canopy of highway trees	T1	T2	-	T4
G: Site specific / special scenarios.	G - Site specific options including proprietary mixes to be submitted to the Overseeing Organisation for approval.			

2. Permitted Construction Materials – Schedule 2

Permitted Options Area A	F1		F2		F4	
Pavement layer	Material	Thickness (mm)	Material	Thickness (mm)	Material	Thickness (mm)
Surface course	AC6	20	AC6	20	AC6	20
Binder course	-	-	AC20	60	AC20	60
Base	-	-	-	-	-	-
Sub base	-	-	-	-	TYPE-1	225
Total thickness	-	20	-	80	-	305

Permitted Options Area B	S1		S4	
Pavement layer	Material	Thickness (mm)	Material	Thickness (mm)
Surface course	SEP	65	SEP	65
Laying course	SAND	30	SAND	30
Base	-	-	-	-
Sub base	-	-	TYPE-1	225
Total thickness	-	95	-	320

Permitted Options Area C	HD1		HD2		HD4	
Pavement layer	Material	Thickness (mm)	Material	Thickness (mm)	Material	Thickness (mm)
Surface course	AC6	20	AC6	20	AC6	20
Binder course	-	-	AC20	60	AC20	60
Base	-	-	-	-	-	-
Sub base	-	-	-	-	TYPE-1	365 - see a)
Total thickness	-	20	-	80	-	445



Permitted Options Area D	BF1		BF4	
Pavement layer	Material	Thickness (mm)	Material	Thickness (mm)
Surface course	BLOCK	65	BLOCK	65
Laying course	SAND	30	SAND	30
Base	-	-	-	-
Sub base	-	-	Type-1	225
Total thickness	-	95	-	335

Permitted Options Area D	BR1		BR4	
Pavement layer	Material	Thickness (mm)	Material	Thickness (mm)
Surface course	BLOCK	80	BLOCK	80
Laying course	SAND	30	SAND	30
Base	-	-	AC32	150
Sub base	-	-	TYPE-1	450 - see a)
Total thickness	-	95	-	710

Permitted Options Area D	T1		T2		T4	
Pavement layer	Material	Thickness (mm)	Material	Thickness (mm)	Material	Thickness (mm)
Surface course	PA6	20	PA6	20	PA6	20
Binder course	-	-	PA20	60	PA20	60
Base	-	-	-	-	-	-
Sub base	-	-	-	-	TYPE-3	225
Total thickness	-	20	-	155	-	710

- a) Sub base thickness assumes in-situ CBR of greater than 2%. Where in-situ CBRs are <2% these areas are to be treated as soft spots and an engineered fill or reinforced sub base solution may be required. Sub base thickness is to be varied based on equilibrium CBR at formation level in accordance with IAN 73/06 Revision 1 (2009) Figure 3.1 (sub base only) or Figure 3.2 (sub base on capping). See below for summary of requirements. Overall

subgrade type and condition will be considered, e.g. dried clay may achieve CBRs >15% but is likely to require sub base at the thickness required for 4% CBR. All designs to be submitted to the Overseeing Organisation for approval before construction commences.

- b. For new roads with traffic loading >2msa a pavement design must be submitted to the Overseeing Organisation for approval. AC32 may be substituted for C20/25 concrete in haunching or small areas where compaction is a concern. AC32 may substituted for equivalent thickness in AC20 in small scale patching works.

3. Requirements for Construction materials – Schedule 3

Material	Description	Clause	Specification / Guidance
AC6	AC6 dense surf 100/150 rec	909	BS EN13108-1 / PD 6691 Annex B
AC20	AC20 dense bin 100/150 rec	906	BS EN13108-1 / PD 6691 Annex B
AC32	AC32 dense base 100/150 rec	906	BS EN13108-1 / PD 6691 Annex B
PA6	PA6 100/150 rec	901	BS EN13108-7 / BS EN13108-20 / PD 6691 Annex B
PA20	PA20 100/150 rec	912	BS EN13108-7 / BS EN13108-20 / PD 6691 Annex B
SEP	400 x 400 x 65 precast concrete slabs – see a).	1104	BS EN 1339 & BS 7533-4
BLOCK	80mm thick block paving, Marshalls Tegula or KeyBlok or similar approved. – see a)	1107	BS EN 1338 & BS 7533 Part 3
SAND	Laying course to be 0/4 mm, 30 mm thick. Joints to 0/2 mm.	1104	BS EN 12620
TYPE-1	Type-1 unbound mixture	803	BS EN 13285
TYPE-3	Type-3 (open graded) unbound mixture	805	BS EN 13285

- a) Small element paving and blockwork type and colour are to be agreed with the relevant Bedford Borough Council Team Leader in writing.

4. General Requirements – Schedule 4

Block Paving Requirements

- a) Blockwork will generally be laid to a 45degree herringbone laying pattern in carriageways, and 90degree herringbone laying pattern in footways, defined parking spaces and feature areas. Where rolled pre-cast concrete paving blocks are use there shall be at least three different longitudinal sizes laid to create a random pattern using a suitable mix of the block sizes available.
- b) Blockwork Laying should be to the requirements of BS 7533 Part 3 2005 + A1:2009 utilising “mitre head” starter units and inboard cutting techniques as appropriate. Blocks to be cut using approved block cutting guillotine to no less than ¼ (one quarter) of the original plan size.
- c) Gaps between kerb face and blocks and between ironwork and block must be kept to a minimum and sealed with a well-rammed mixture of 3:1 dry sand to Ordinary Portland Cement or propriety sealing system.
- d) Specifically designed ironwork which permits the blockwork and its laying course to be laid up to the frame of the gully grate or manhole cover. No trimming of blocks shall be permitted other than those vertical cuts necessary to achieve the laying pattern.

Testing

- e) Testing of materials should not normally be required where quality management schemes or product certifications schemes apply. Testing should only be necessary where visual appearance or performance appears different from normal. Testing shall be in accordance with DMRB HD39/16 Table 4.4.

Tolerances

- f) Tolerances shall be in accordance with the below table.

Tolerances	
Parameter	Requirement
Horizontal alignment accuracy	Horizontal alignments shall be correct to within 25mm, except for kerbs, channels and edge strips which shall be correct to within ±13mm.
Formation level	After completion of any drainage and immediately before laying sub-base the subgrade surface shall be within + 10mm and –30mm of its design level.
Sub-base level	If the footway is surfaced in bituminous material the compacted sub-base surface shall be within +10mm and –20mm of its design level. If segmental surfacing is used the sub-base must be within ± 10mm of its design level.
Sub-base thickness	The thickness shall not be more than 10mm less than specified.
Bituminous binder	The compacted binder course level shall be within ± 10mm of the design

course	level.
Surface course	The surface course level shall be within + 5mm and –0mm of the adjacent kerb, edging strip or any ironwork.
Bituminous thickness	The total thickness of bituminous material shall not be more than 5mm less than specified.
Laying course sand	The compacted laying course sand level shall be within ± 5 mm of the design level and the layer shall not be less than 25mm thick.
Kerbs and edging strips	The surface level shall be within ± 6 mm of the design level.
Joints between flags and pavers	Joints should be not less than 2mm and not more than 5mm wide.
Surface regularity	The maximum deviation of the footway surface under a 1m straightedge shall not exceed 3mm.

5. General requirements for Construction materials:

- i. All materials should be compacted and tested as per the requirements of HD39/16 'Footway and Cycleway Design' Annex C and D, and the Specification Clauses 1104 and 1105 and BS 594987.
- ii. All materials are to be transported, laid, compacted and tested in accordance with BS594987.
- iii. All bituminous mixtures used in the works shall be produced in plants that are registered to BS EN ISO 9001 and National Sector Scheme 14 "Production of Asphalt Mixtures" and shall be laid by contractors registered to and operating in accordance "Sector Scheme 16 for the Laying of Asphalt Mixes". All non-proprietary asphalt mixtures shall be CE marked and comply with BS EN 13043 and the relevant annex of BSI PD 6691.
- iv. Jointing material should not be of a type which could stain the surface, and should be supplied and installed kiln dry and free flowing.