

SERIES 000 INTRODUCTION

Clause 004K British Standards, British Standard Codes of Practice, Harmonised European Standards, European Standards and Other Reference Documents

Sub-clause 2 line 4 delete

“date stated in the Contract”

and substitute with “Reference Date stated in the Appendix to the Form of Tender”

SERIES 100 PRELIMINARIES

Clause 104K Standards, Quality Assurance, Agrément Certificates and Other Approvals

Add after Sub-Clause 18

19 In case of bituminous materials, in addition to the requirements for the plant to have certification to Sector Scheme 14, the Contractor shall supply details of the weekly ‘Q’ value of each of the plants proposed or used. Data shall be not more than one week in arrears.

Clause 105K Goods, Materials, Sampling and Testing Goods and Materials

(i) Add to the end of sub-clause 1:

"All goods and materials shall be new unless otherwise described in the Contract."

(ii) Add sub-Clause 9 as follows:

"9 Source approval will be automatically granted where the source satisfies a quality assurance scheme to BS EN ISO 9001 independently accredited by UKAS or equivalent; otherwise the Contractor shall satisfy himself and supply adequate data and information for the Overseeing Organisation to confirm approval of the source before any materials are used. The Contractor must allow sufficient time in his programming for the source approval process. Any change to a quality control or quality assurance system shall be notified to the Overseeing Organisation so that reapproval can be granted."

Clause 110K Information Boards

Delete first sentence of sub-clause 1 and insert the following:

“The Contractor shall provide and erect information boards as described in Appendix 1/21”.

Clause 116K Privately and Publicly Owned Services and Supplies

Add to the end of sub-clause 3:

"Before requesting attendance for the commencement of works to services or supplies the Contractor must ensure that these works can continue without interruption from the main Works. The Contractor must also programme the works to services and supplies to ensure that there is no interaction between the owners of the services or supplies which causes delay to any of them."

Clause 117K Traffic Safety and Management

- (i) Sub-Clause 18 is deleted and substituted by

"Where work is carried out on or adjacent to a highway open to traffic the Contractor shall ensure that the workforce and the site supervisory staff at all times wear high visibility warning clothing complying with BS EN 471. Clothing shall be Class 3 to Table 1 and shall comply with the requirements of para. 4.2.3(b). In addition on motorways or other high speed roads full length sleeves meeting the requirements of para. 4.2.4 shall be provided for coveralls and jackets. The colour of the clothing shall be “fluorescent yellow” or “fluorescent orange-red” complying with Table 2. The retroreflective material used shall be to Class 2 as defined at Table 5. The clothing must be properly fastened at all times. Clothing complying with other specifications may be used in accordance with Clause 104.2 where they offer equivalent levels of performance in so far as the specification given is not inconsistent with the basic health and safety requirements set out in Annex 2 of the Personal Protective Equipment Directive (89/686/EEC). The Contractor shall ensure that the person in charge of the workforce is readily distinguishable from the person designated in sub-Clause 19 of this Clause and from the remainder of the workforce".

- (ii) Insert in sub-Clause 19 line 8 after “and”:

“when working on motorways or high speed dual carriageways,”

SERIES 300 FENCING

Clause 301K General

- (i) Add the following as a second sentence.

"Unless otherwise agreed by the Overseeing Organisation all timber components of temporary fencing and any cleft timber components of permanent fencing shall be manufactured from Sweet Chestnut.

SERIES 400 ROAD RESTRAINT SYSTEMS (VEHICLE AND PEDESTRIAN)

Clause 403K Installation of Safety Barriers, Terminals, Transitions and Crash Cushions - Overall Requirements

Posts

Add the following at the end of sub-clause 9;

"Where the posts are near to or within a filter drain a concrete base shall be constructed to the dimensions shown on Drawing No. KCC/400/001."

Clause 406K General

Delete sub-clause 2 and insert the following:-

"Approval

2. The design of parapets other than those described in Appendix 4/1 shall be submitted to the Overseeing Organisation not later than the date stated in Appendix 4/1 for approval."

SERIES 500 DRAINAGE AND SERVICE DUCTS

Clause 507K Chambers

- (i) Delete the first two sentences of sub-clause 1 and insert the following:-
 "1. Chambers shall include manholes, catchpits, inspection chambers, petrol interceptors, draw pits and walled soakaways. Chambers shall be as described in Appendix 5/1."
- (ii) Add the following to the end of the first sentence of sub-clause 3:
 "and shall be one brick thick."

Clause 508K Gullies and Pipe Junctions

- (i) Delete the first sentence of sub-clause 1 and insert the following:-
 "1. Gullies shall be trapped or untrapped as described in Appendix 5/1"
- (ii) Delete sub-clause 6 and insert the following:-
 "6. Backfilling to gullies shall be in ST2 concrete up to top of subbase level. The remainder of the backfilling shall be in appropriate road pavement materials."

Clause 516K Combined Drainage and Kerb Systems

Delete first sentence of sub-clause 1 and insert the following:-

- "1. Combined drainage and kerb systems shall be as detailed in Appendix 5/5"

Clause 517K Linear Drainage Channel Systems

- (i) Delete first sentence of sub-clause 1 and insert the following:-
 "1. Linear drainage channel systems shall be as detailed in Appendix 5/6."
- (ii) Sub-clause 1 second sentence
 Delete " and Appendix 1/11 as appropriate"

Clause 520K The Cleaning of Existing Drainage Systems

- i) Delete sub-Clause 1 and insert the following:-
 1. Within the first seven days of being given possession of the Site, or any section thereof, the Contractor shall clean and prove the existing drainage system in accordance with this Clause, to the extent shown in Appendix 5/1.
 2. The Contractor shall within two working days of cleaning, or attempting to clean any section, submit to the Overseeing Organisation a written report on the state of the whole system or any section thereof. Cleaning of any section, and its subsequent reporting, shall be completed prior to commencing any other drainage work within that section.
 3. On receipt of the Contractor's written report on the status of a section of the existing drainage system the Overseeing Organisation may instruct additional work.
- ii) Re-number existing sub-Clauses 2 to 24 as 4 to 26.

SERIES 600 EARTHWORKS

Clause 608K Construction of fills

Add to the end of sub-Clause 2:

"The surface level of starter layers shall have a tolerance within +20mm and -30mm relative to the design level".

SERIES 700 ROAD PAVEMENTS - GENERAL

Clause 701K Pavement Construction

(i) Sub-clause 1

delete "from one of the permitted options described in Appendix 7/1".

insert "as shown in the Contract"

(ii) Sub-clause 1

after "1000"

insert "and Appendix 7/1."

(iii) Add the following after Sub-clause 2:-

"3 Where concrete or clay block pavers are used in carriageways they shall comply with Clauses 702, 1107 and 1108."

Clause 706K Excavation, Trimming and Reinstatement of Existing Surfaces

(i) Delete sub-clauses 5 and 6

(ii) Renumber existing sub-clauses 7 to 11 as 5 to 9

Clause 709K Cold-milling (Planing) of Bituminous Bound Flexible Pavement

(i) sub-Clause 9 line 3

delete "Appendix 2/3"

and substitute "Appendix 7/2"

SERIES 800 ROAD PAVEMENTS – UNBOUND, CEMENT AND OTHER
HYDRAULICALLY BOUND MIXTURES

Clause 801K General Requirements for Unbound Mixtures

- (i) Add the following at the end of sub-clause 7:

“For commercial vehicle footway crossovers and other areas with less than five commercial vehicles per day (e.g. Home zones, car parks or town centre pedestrianisation projects) the thickness of the frost protection layer shall be 300mm.”

SERIES 900 ROAD PAVEMENTS - BITUMINOUS BOUND MATERIALS

Clause 901K Bituminous Pavement Materials

- (i) Add to the end of sub-clause 2:-

Where glass cullet is incorporated into coarse aggregate, the flakiness and grading of the glass entering the mixer shall be controlled as described in the Plant Quality Plan. The glass shall contain no metal, cork or paper.

- (ii) After sub-clause 32 add the following sub-titles and sub-clauses 33 to 36:-

"Setting or Resetting Ironwork

33. Manhole covers and other ironwork shall be set or reset to the final level prior to the laying of the uppermost surfacing course (exclusive of surface treatment).
34. Gully frames shall be set or reset 6mm below the level of the final surface and other ironwork set or reset flush with the final surface."

Quality

35. Bituminous material shall be supplied only from plants approved by the Overseeing Organisation. Approval is based on the 'Q' value of the plant reported in accordance with Appendix 1/24.
36. Approval is granted if the average 'Q' value of the plant is less than or equal to 2.5. The average 'Q' value is the mean of the 8 consecutive weekly values pertaining between 12 weeks and 4 weeks prior to the contract award or material being laid.

Clause 915K Coated Chippings for Application to Premixed Surfacing

- (i) In sub-clause 1 line 4 after "... BS 594-1" and before ", except size ..." insert the following "and Appendix 7/1"
- (ii) Add after sub-clause 4 the following:-

"5. The Los Angeles coefficient shall be determined in accordance with BS EN 1097-2, Determination of resistance to fragmentation by the Los Angeles test. The aggregate shall be deemed to comply if the mean of the 3 most recent consecutive results, from tests relating to the material to be supplied, and carried out within the previous 6 months by a testing laboratory approved by the Overseeing Organisation, is within the range described in Appendix 7/1."

Clause 919K Surface Dressing : Recipe Specification

- (i) In sub-clause 8 line 1 after "..... street furniture" and before "shall be" insert the following:

"including but not limited to: ironwork, road studs, bridge joints and loop feeders".

- (ii) Add sub-clauses 19 to 26 after sub-clause 18.

- "19. Transverse and associated road junction markings as listed in Appendix 12/3 shall be masked or treated in such a way, prior to the application of the binder, that surface dressing will not adhere and shall be uncovered before the road is opened to traffic.
20. If required by the Overseeing Organisation the Contractor shall verify the rate of spread of binder on a daily basis by dipping the tank or other approved means. Binders offered by the Contractor shall be listed in Appendix 7/21. In addition to the testing regime set out in Appendix 1/5 the Contractor shall, whenever spraying has ceased for a period of 1 hour or more, check the uniformity of spraying by taking pressure readings and check the proper functioning of the nozzles using the jet test.
21. The Contractor shall, from the commencement of application Works on Site to one month following the end of the Contract Period, maintain the ability to supply and apply clean rock dust passing a 4mm sieve. When instructed by the Overseeing Organisation, the Contractor shall apply the rock dust by mechanical spreader to any areas of surface dressing laid during the Contract Period.
22. The Contractor shall be capable of being contacted at all times during the working hours by the Overseeing Organisation at an office telephone or by means of a mobile telephone or two-way radio system approved by the Overseeing Organisation.
23. All reasonable precautions shall be taken to control the speed and movement of traffic in order to avoid damage to new dressings and to obviate danger to road users. Signs bearing the legend "Loose Chippings" together with a supplementary plate stating "Max Speed 20 mph" shall be positioned at centres not exceeding 800 metres alongside roads that have been surface dressed. These signs shall be maintained in position until all loose and surplus chippings have been removed.
24. Storage facilities for chippings shall be approved by the Overseeing Organisation prior to use. The Contractor shall ensure that approved storage areas have hardened bases, are clean before use and are maintained in a clean and tidy condition throughout the period of use.
25. The minimum surface temperature of the carriageway to be surface dressed shall be 15°C.
26. All arisings from sweeping prior to surface dressing or during the aftercare period shall be disposed of to a licensed tip."

Clause 942K Thin Surface Course Systems

Add after Sub-clause 11 (iii)

(iv) Where the thin surface course system is to be laid less than 30mm thick on a sub-stratum at a temperature below 4°C, the top 25mm of the surface shall be brought up to a temperature of at least 4°C immediately prior to the surfacing material being applied, using plant with heating surfaces insulated and fully enclosed.

Add after Sub-clause 16

Skid Resistance Performance

17. The Contractor shall assist with the early life skid resistance by treating the surface at locations shown in the Contract. Thin surface course systems with a nominal laid thickness of 25mm or more shall be gritted with 3mm to 0.063 mm dust free or very lightly bitumen coated crushed rock fines at a rate exceeding 600gs/m² before final compaction is complete and rolled in. Excess material shall be removed by sweeping.

Quality Assurance

18. The binder content and grading of the proposed mix shall be notified to the Overseeing Organisation prior to works commencing. If the mixture contains a polymer-modified binder the Overseeing Organisation shall be informed.
19. Material shall only be supplied from plants that satisfy the requirements of Clause 901.

SERIES 1000 ROAD PAVEMENTS – CONCRETE MATERIALS

Clause 1032K Thin Bonded Repairs

- (i) Add after sub-Clause 8 the following:-
 - 9. Unless self expanding cork sealants complying with Clause 1017 have been used, seal the joints in accordance with Clause 1016.

SERIES 1100 KERBS, FOOTWAYS AND PAVED AREAS

Clause 1101K Precast Concrete Kerbs, Channels, Edgings and Quadrants

- (i) Sub-clause 1 – lines 8 and 13/14

Delete “C6/8 or ST1” and insert “ST2”.

SERIES 1200 TRAFFIC SIGNS

Clause 1202K General Requirements for Permanent Traffic Signs

- (i) Delete sub-clause 7 and insert the following:-
 - “7. Traffic signs shall have a location identifying mark as described in Appendix 12/1.”

Clause 1204K Posts for Permanent Traffic Signs

- (i) Delete sub-clauses 1 and 2 and insert the following:-
 - 1. Posts for permanent traffic signs shall be as described in Appendix 12/1.
- (ii) Renumber existing sub-clauses 3 to 6 as 2 to 5.

Clause 1205K Sign Plates for Permanent Traffic Signs

- (i) Delete the whole of sub-clauses 2, 3, and 4 and insert the following:-
 - 2. The dimensions of sign assemblies shall be as indicated in the signs schedule.
 - 3. The layouts of sign faces for all direction signs and certain other signs shall be as indicated on individual sign face design drawings.
 - 4. All sign assemblies shall have radiused corners where detailed on the sign drawings and where required to in the Traffic Signs Regulations and General Directions (2002) working drawings.
 - 5. All plate signs (including light spill screens) shall be made from a single 2400mm x 1200mm sheet without joints, except that where any designed chevron type direction sign exceeds these dimensions, either vertically or horizontally, it may be made with one joint.
 - 6. All signs (including light spill screens) exceeding the dimensions in sub-clause 5 above and which are not designed chevron type direction signs shall be made from extruded aluminium planks as detailed in sub-clause 9.
- (ii) Renumber existing sub-clauses 5 and 6 as 7 and 8.
- (iii) Add sub-clauses 9 to 14 as follows:-
 - 9. All planks shall consist of aluminium extrusions as described in BS 873, of approved cross section compatible with the section indicated in Standard Drawing No KCC/1200/003 and shall be new, smooth, of even cross section, without twists or other defects. Each individual plank must be fastened to each support post, UC or UB.
 - 10. Plank signs up to 6.0 m wide shall have no vertical joints in the horizontal planks. Over 6.0 m wide the signs may have one or more vertical joints, the position of which is to be agreed with the Overseeing Organisation. Each such sign shall then be fitted with an insert plate (to suit the plank profile) between each horizontal pair of butting planks.

Clause 1205K Sign Plates for Permanent Traffic Signs (continued)

11. All sign equipment other than sign faces, reflector plates and stainless steel clips shall be coloured matt grey to BS 381C/693, unless otherwise specified. Where black posts are specified, the clips and backs of signs, caps and lanterns attached to the post shall also be coloured black to BS 4800 reference 00E-53.
12. The Overseeing Organisation may specify alternative substrate materials for certain signs. These alternatives shall be either:-
 - a) Colourcoat HP200 as manufactured by Capital Trading Co. (Coated Steels) Ltd or equivalent.
 - b) Filon Plate as manufactured by Filon Products Ltd or equivalent.
13. Double sided signs and finger arms shall be constructed as Standard Drawing No. KCC/1200/010.
14. The background colour for Public Rights of Way signs shall be Pantone 364C.

Clause 1206K Faces for Permanent Traffic Signs

- (i) Add new sub-clause 9

9. Type I alternate face material shall be "LDP Diamond Grade 3970 Series". Type II alternative face material shall be "Diamond Grade 3990 Series". Where either of these are specified in the signs schedule in Appendix 12/1 the tables in BS 873 : Part 6 shall be replaced as follows:-

Tables 1, 2 and 3 of BS873 : Part 6 to be replaced with the following:

Table 1 : Minimum coefficients of retroreflection in Candelas per lux per square metre

Observation Angle	Colour	Entrance Angles			
		Beta ₂	0 deg		
		Beta ₁	-5 deg	15 deg	40 deg
12'	Green		cd/(lx/m ²)	cd/(lx/m ²)	cd/(lx/m ²)
	White		65	50	18
	Yellow		800 (80)	660 (60)	145 (15)
	Red		660 (65)	450 (45)	85 (13)
	Blue		215	150	25
20'	Green		45	30	14
	White		550 (300)	400 (250)	95 (30)
	Yellow		450 (250)	200	75 (25)
	Red		150	95	22
	Blue		29 (15)	16 (12)	7 (1.7)
30'	Green		18	12	7
	White		200 (250)	120 (220)	75 (35)
	Yellow		160 (200)	90 (175)	60 (30)
	Red		45	25	18
	Blue		9.8 (10)	6.5 (8)	2.8 (2)

Clause 1206K Faces for Permanent Traffic Signs (continued)

The figures in brackets refer to Type II alternative face material.

Tables 4 and 5 of BS873 : Part 6 : to be replaced with the following:

Table 2: Chromacity and luminance factors

	1		2		3		4		Luminance factor
	x	y	x	y	x	y	x	y	
Red	0.690	0.310	0.595	0.315	0.569	0.341	0.655	0.345	>.03
Orange	0.610	0.390	0.535	0.375	0.506	0.404	0.570	0.429	>.12
Yellow	0.545	0.454	0.487	0.423	0.427	0.483	0.465	0.534	>.24
Blue	0.078	0.171	0.150	0.220	0.210	0.160	0.137	0.038	>.01
White	0.355	0.355	0.305	0.305	0.285	0.325	0.335	0.375	>.40
Green	0.313	0.682	0.313	0.453	0.248	0.409	0.127	0.557	>.01

Clause 1207K Construction and Assembly of Permanent Traffic Signs

(i) Delete the whole of sub-Clause 6 and insert the following:-

"6. All rivets or other devices for fixing sign plates to their framework shall be of aluminium alloy or other non-ferrous material approved by the Overseeing Organisation and shall have a sufficient cross-sectional area to prevent failure from thermal stresses or wind pressure or other such stresses as may be specified. Rivets shall be spaced to suit the structural requirements of BS 873 and shall be spaced uniformly. Fixing of channel stiffening to sign plates by means of adhesive of any type will not be accepted. It will be assumed that the proposed method of fixing has been successfully tested in accordance with, and complies fully with BS873. The manufacturer will inform the Overseeing Organisation of the type of rivet fixing to be employed at the time of tendering."

(ii) Delete the whole of sub-Clause 7.

(iii) Delete the whole of sub-Clauses 9 and 10 and insert the following:-

"9. Sheet and plank signs shall be connected to posts and gantry uprights by a method approved by the Overseeing Organisation. All sign fixings shall be of stainless steel complying with AISI Grade 201. Sign fixings on single posts shall be anti-rotational.

10. Plank signs shall be assembled in accordance with the manufacturer's instructions, but every plank shall be fixed to each post or gantry upright by at least one clip or clamp."

(iv) Delete the whole of sub-Clauses 11 and 12.

Clause 1208K Location and Erection of Permanent Traffic Signs

- (i) Add to the end of sub-Clause 1:

"All sign locations shall be marked out by the Contractor with pegs and/or paint. Installation work shall not commence until the Overseeing Organisation has approved the setting out. For normal works the Contractor shall give the Overseeing Organisation seven days notice of the requirement to check the setting out. For urgent works, the Contractor shall give as much notice as is reasonably practicable."

- (ii) Add sub-clause 9 and 10 as follows:

9 Attaching signs to walls

Where the Overseeing Organisation orders signs to be fixed to existing walls, the sign shall be secured using at least four 40mm x 8 stainless steel screws.

The wall shall be drilled and fitted with proprietary plastic plugs. A neoprene washer shall be positioned between the back of the sign plate and the wall at each fixing point. The Contractor may not commence fitting a sign to a wall unless a copy of a written agreement from the owner of the wall authorising the work has been provided by the Overseeing Organisation.

10. Cover plates

Where the Overseeing Organisation orders the fitting of a cover plate, this shall be manufactured in accordance with the detailed working drawing specifically provided by the Overseeing Organisation. The plate shall be manufactured from 11 gauge aluminium sheet, and finished with reflective material in accordance with the working drawing and the specification. The plate shall be fixed to the existing sign by means of aluminium rivets, finished with a rivet cap of a colour approximating as closely as possible to the colour of the sign face material. Neoprene washers shall be positioned between the cover plate and the existing sign face at each rivet.

Clause 1212K Road Markings

- (i) Sub-clause 3: Delete table and substitute with the following:

Property	BS EN 1436 Reference	Requirement*	Value
Colour	Table 6	1. White 2. Yellow, Class Y1, Y2	x, y co-ordinates given x, y co-ordinates given
Luminance Factor	Table 5	1. Class B3 2. Class B1	0.4 0.2
Skid Resistance	Table 7	1. Class S3 2. Class S3	55 55
Retroreflectivity	Table 2 Class of R_L for dry markings	1. Class R4 2. Class R2	200 100
	Table 3 Class of R_L for markings during wetness	1. Class RW3	50
	Table 4 Class of R_L for markings during rain	1. Class RR3	50

*note: 1 = White, 2 = Yellow

- (ii) Sub-clause 6 is deleted and substituted with the following:

6. Not Used

- (iii) Delete sub-Clause 18 and insert the following:

“18. The removal of road markings on surfaces that will that will continue to be used by traffic shall be undertaken in a manner that will avoid damage to the surface.

The removal of temporary road markings shall comply with sub-Clauses 14 and 16 of this Clause.

The removal of permanent road markings shall comply with the requirements of Appendix 12/3.

In all cases the Contractor shall submit details of the proposed method for the Overseeing Organisation’s consent”

Clause 1214K Traffic Cones, Traffic Cylinders, Flat Traffic Delineators and Other Traffic Delineators

- (i) Add to the end of sub-clause 1 the following:-

"All traffic cones shall be 1 metre in height."

Clause 1216K Temporary Traffic Signs

- (i) Delete the first paragraph of sub-Clause 1 and insert the following:
 - "1. Unless specified otherwise the temporary traffic signs shall be designed by the Contractor. They shall comply with Clause 1201, satisfy Clause 117, have the consent of the Overseeing Organisation prior to installation, and comply with sub-Clauses 2 to 7 of this Clause."

SERIES 1300 ROAD LIGHTING COLUMNS AND BRACKETS, CCTV MASTS AND
CANTILEVER MASTS

Clause 1301K General

Sub-clause 2 paragraph 2:

Add to the end of this paragraph:-

“Foundations for planted lighting columns shall be as shown on Standard Detail KCC/1300/001. The concrete surround to all planted columns shall be at least 100 mm wide.”

Clause 1302K Design of Lighting Columns, Brackets, CCTV Masts, Cantilever Masts, Foundations, Anchorages and Attachment Systems

Sub-clause 2 line 1 – delete “aesthetic”

Clause 1305K Installation of Foundations, Anchorages and Attachment Systems

Planted Lighting Columns and Cantilever Masts

(i) Sub-clause 1 is deleted and replaced by:-

"1. Excavation for columns or mast posts shall not be carried out by mechanical means unless previously agreed by the Overseeing Organisation. A layer of ST4 concrete 75mm thick, complying with Clause 2602, shall be placed and compacted in the bottom of the excavation up to the base of the column or mast post."

(ii) Sub-clause 3 is deleted and replaced by:-

“3. The hole into which the lighting column or cantilever mast is placed shall be backfilled with concrete.”

(iii) Sub-clause 5 is deleted.

SERIES 1400 ELECTRICAL WORK FOR ROAD LIGHTING AND TRAFFIC SIGNS

Clause 1401K General

- (i) Add to the end of the first paragraph of sub-clause 1:-

"and the Institution of Lighting Engineers Code of Practice for Electrical Safety in Public Lighting Operations."

- (ii) Add the following after sub-clause 5:-

"6. 'Appendix 14/4' shall mean 'Appendix 14/4 or 14/5' in the following clauses: 1407.1; 1409.1; 1416.5; 1418.1, 3, 5, 6 and 7; 1421.3, 4, 5, 7, 8 and 11; 1422.3 and 6; and 1423.1,"

Clause 1407K Luminaires

- (i) Sub-Clause 3 delete (i) and insert the following:

(i) a) General

- i) Lighting units shall be fixed so that no part of the sign is obscured and light spill is kept to a minimum.
- ii) Lighting units shall be set to give maximum efficiency of illumination to the complete area of the sign face.
- iii) Lighting units on gantries shall be mounted in such a manner that shadows of structural elements are not cast onto the sign face.

b) Flood Lighting Units

Flood lighting units shall be mounted as follows:-

- i) at the distance from the signs giving maximum efficiency of illumination;
- ii) at a height such that the top of the unit is seen on approach at the same level as the bottom of the sign face and the top of the light screen;
- iii) normal to, and on the produced centre line of the sign face unless more than one unit is required;
- iv) equally spaced about the centre line of the sign face where two units are required.

Clause 1407K Luminaires (continued)

- c) Top Mounted Lighting Units
 - i) The bracket arms for the lighting units shall be either fixed to a main post supporting the sign or to a dummy post fixed to the back of the sign.
 - ii) The length of the bracket arm shall be determined by the location of the socket mounting point, area of sign and use of light spill screens unless otherwise stated in Appendix 12/1.

Clause 1409K Photo-electric Control Units (PECUs)

- (i) Sub-clause 2 delete (i) and insert the following:
 - (i) (a) for road lighting luminaires, be secured to the luminaire canopy
 - (b) for Traffic Sign luminaires be secured to:
 - i) where mounted on gantries, close to feeder pillar
 - ii) top of sign post
 - iii) internally illuminated sign housing
 - iv) luminaire of externally illuminated sign.

or as specified in Appendix 14/5.
 - (c) for flood lights on separate posts, be fitted into the side of the mounting post, as high as possible.
- (ii) Renumber existing sub-clause 4 as 6 and insert the following sub-clauses:
 - 4. Where traffic sign luminaires are a pair mounted on double arm brackets, unless otherwise specified in Appendix 14/5, each luminaire shall be fitted with a PECU.
 - 5. Traffic sign luminaires on gantries shall be group controlled by one PECU.

Clause 1412K Ballasts

- (i) Add sub-clause 3 as follows:-
 - "3. Terminals shall be suitably shrouded to prevent direct contact."

Clause 1416K Cut Outs, Fuse Holders, Fuses and Miniature Circuit Breakers (MCBs)

- (i) Delete sub-clause 3 and insert the following:-
- "3. Cut-outs shall have separate terminals for live, neutral and earth conductors. Terminals shall be sufficient for the conductors as described in Appendix 14/4 or Appendix 14/5. They shall be clearly labelled to differentiate circuits and phases".
- (ii) Add to the beginning of sub-clause 4 the following:-
- "Except as described in sub-clause 10".
- (iii) Add the following sub-clauses:
- "8. All terminals shall be suitably shrouded to prevent direct contact."
- "9. Cut-outs to lantern on private cabling networks owned by the Highway Authority shall consist of a substantial moulded plastic, drip proof enclosure designed primarily for use in street lighting columns. They shall provide switched, double pole isolation incorporating a high breaking capacity fuse to BS 88 rated in accordance with the lamp manufacturer's recommendations. They shall be capable of providing one or two separately fused upward circuits or one upward circuit and one dedicated double pole outgoing circuit to sign etc. Terminals shall be large enough to take the steel wire armoured cable specified in straight connections or looped services and have integral brass cable glands."
- "10. For secondary isolation to lanterns on an Electricity Company supply, a double pole, switched isolator incorporating a high breaking capacity type fuse to BS88 rated in accordance with the lamp manufacturer's recommendations, shall be supplied. This unit which shall be capable of being locked in the "off" position shall have shrouding or other barrier provided to prevent contact with live parts affording a degree of protection of at least IP2X and removable only by the use of a tool. If there is a need to provide a second circuit (e.g. to a sign) a double pole switched isolator having 2 x BS88 fuses shall be provided."

Clause 1419K Wiring

- (i) Delete sub-clause 4 and insert the following:-
- "4. The final connection between equipment mounted in the base compartment and the cut out shall be made using PVCF double insulated 6mm² tails."
- (ii) Sub-clause 7 is deleted.

Clause 1424K Inspection and Testing to be Carried out by the Contractor

(i) Delete sub-clause 6 and insert the following sub-clauses:-

"6. Before a new, rewired, altered or extended electrical installation can be connected to the supply, EDF Energy Networks Ltd will require:

(a) A copy of a properly completed Completion and Inspection Certificate based on BS 7671 (The current edition of the Institution of Electrical Engineers' (IEE) Wiring Regulations).

or

(b) An Electrical Contractor who is a member of ECA or NICEIC to, as an alternative to providing the certificate, sign and return EDF Energy Networks Ltd's Request for Connection form (No. 1831), stating compliance with BS 7671 (some evidence of membership is required such as the registration number).

NB. One certificate or form may cover a number of supply points.

7. Subsequent to final connections being made Institution of Lighting Engineers test and inspection certificates in respect of the lighting cable network and/or the internal column/sign wiring shall be completed and two copies furnished to the Overseeing Organisation."

(ii) Renumber existing sub-clause 7 as 8.

SERIES 2000 WATERPROOFING FOR CONCRETE STRUCTURES

Clause 2003K Materials for Waterproofing Concrete Bridge Decks

- (i) Delete sub-clause 2 and insert the following:-
 - “2 Bituminous protection where required as an additional protective layer, shall be hot rolled asphalt surface course (performance-related design mix) to Clause 943 and Appendix 7/1.”

SERIES 2100 BRIDGE BEARINGS

Clause 2104K Amendments and Additions to BS 5400: Part 9: Section 9.2: 1983

Insert the following:-

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7.2 Insert Additional sub-clause as follows:-

"(d) Number of tests required:-

(1) Bearings other than elastomeric bearings. One complete bearing of each type shall be subjected to a combined vertical and horizontal load test at the serviceability limit state. A load test to ultimate limit state need only be carried out when the design of the bearing or any of its components, made from materials other than structural steel, is governed by an ultimate criterion; design of structural steel components of a bearing need not be verified by load tests at ultimate limit state. Well attested and documented evidence of previous independently supervised tests on similar bearings may be accepted as an alternative to the specified test.

(2) Laminated elastomeric bearing 'quick production test' shall be carried out for each bearing. One in every twenty bearings of the same type shall be subjected to shear stiffness tests. In addition, where the vertical deflection of the bearing under the load is critical to the design of the structure, compressive stiffness tests should be carried out on one in every twenty bearings of the same type."

SERIES 2400 BRICKWORK, BLOCKWORK AND STONWORK

Clause 2401K Cement

- (i) Add sub-clause 2 as follows:

"2 White or coloured Portland Cement shall comply with BS EN 197-1 and pigments shall be inorganic oxide pigments, either natural or synthetic in origin, complying with the requirements of BS EN 12878. Pigments whether added just before mixing or by the cement manufacturer shall be incorporated in the proportions agreed by the Overseeing Organisation."

Clause 2404K Mortar

- (i) Delete sub-clause 1 and insert the following:-

"1 Except for pointing as specified in sub-clause 6, cement mortar for brickwork, blockwork and stonework shall be mixed in the proportions given in Table 24/1 according to the mortar designation described in Appendix 24/1."

Add after sub-clause 5 the following:-

- (ii) "6 Mortar for repointing shall be 1:1:7 (O.P.C.:hydrated lime:sand) unless otherwise described in Appendix 24/1 and shall be sprayed with water and lightly brushed to expose the aggregate not less than 5 hours and not more than 16 hours after laying. The actual time for this operation will vary within the range given to suit the prevailing weather conditions. The lime and sand shall be mixed at least sixteen hours before use and when required shall be mixed in proportion with Ordinary Portland Cement. The sand shall be well graded, crushed natural stone to comply with B.S. 1200, the size of the coarse particles being as large as possible in relation to the width of the joints. Hydrated lime shall comply with the requirements of BS EN 459-1."

APPENDIX F PUBLICATIONS REFERRED TO IN THE SPECIFICATION

British Standards and other publications named in the additional, substitute and amended clauses included in Appendices 0/1 and 0/2, and in the numbered appendices, are brought into the Contract by reference, but are not listed separately here.