

**SPECIFICATION**

for

**GENERAL HARDWORKS**

at

**Bromley Croft**

Prepared for

**Consensus Support Services Ltd**

by

epd landscape  
Glendale Countryside Limited,  
The Coach House, Duxbury Hall Road,  
Duxbury Park, Chorley,  
PR7 4AT

Document No. BCR-epd-ELS-XX-RP-L-1002

January 24



## HARDWORKS SPECIFICATION

---

### General Hardworks Specification, Bromley Croft

#### QUALITY MANAGEMENT

|                             |   |                           |
|-----------------------------|---|---------------------------|
| <b>Prepared by:</b>         | Yuwei Chen  | <b>Checked:</b> Liz Stein |
| <b>Authorised by:</b>       | Timothy Cousins   |                           |
| <b>Date:</b>                | December 2023   |                           |
| <b>Revision:</b>            | Original Report   |                           |
| <b>Project Number:</b>      | 23-0022   |                           |
| <b>Document References:</b> | Document No. BCR-epd-ELS-XX-RP-L-1002   |                           |
| <b>Document File Path:</b>  | G:\Shared drives\EPD Projects\Live Projects\23-0022<br>Bromley Croft Leith planning\Delivery\Specifications |                           |

|                             |   |                                 |
|-----------------------------|---|---------------------------------|
| <b>Prepared by:</b>         | Yuwei Chen  | <b>Checked:</b> Timothy Cousins |
| <b>Authorised by:</b>       | Timothy Cousins   |                                 |
| <b>Date:</b>                | December 2023   |                                 |
| <b>Revision:</b>            | P02   |                                 |
| <b>Project Number:</b>      | 23-0022   |                                 |
| <b>Document References:</b> | Document No. BCR-epd-ELS-XX-RP-L-1002   |                                 |
| <b>Document File Path:</b>  | G:\Shared drives\EPD Projects\Live Projects\23-0022<br>Bromley Croft Leith planning\Delivery\Specifications |                                 |

# HARDWORKS SPECIFICATION

---

## General Hardworks Specification, Bromley Croft

### Table of Contents

| Page |  |    |
|------|--|----|
| Q10  | Kerbs/ edgings/ channels/ paving accessories                     | 4  |
| Q20  | Granular sub-bases to roads/pavings                              | 6  |
| Q23  | Gravel/ Hoggin/ Woodchip/ Resin bound roads/<br>paving/ overlays | 9  |
| Q25  | Slab/brick/sett/cobble pavings                                   | 12 |
| Q40  | Fencing  | 18 |
| Q50  | Site/street furniture/equipment                                  | 20 |

# HARDWORKS SPECIFICATION

---

## General Hardworks Specification, Bromley Croft

### Q10 Kerbs/ edgings/ channels/ paving accessories

To be read with Preliminaries/ General conditions.

#### TYPES OF KERBS/ EDGINGS AND CHANNELS

##### 160 CONCRETE BLOCK [KERB SETT EDGINGS] TO PARKING BAYS

- Manufacturer: Bradstone
  - Product reference: Kerb
- Size: 150mm x 150mm
- Colour: Charcoal
- Bedding: see section 540
- Joints generally: Dry, 2 mm gap

##### 250A MATERIAL SAMPLES

- Samples representative of colour and appearance of designated materials: Submit before placing orders.

#### LAYING

##### 510 LAYING KERBS, EDGINGS AND CHANNELS

- Cutting: Neat, accurate and without spalling. Form neat junctions.
- Short units minimum length after cutting: The lower of one third of their original length or 50 mm.
- Bedding of units: Positioned true to line and levelled along top and front faces, in a mortar bed on accurately cast foundations or on a race of fresh concrete.
- Securing of units: After bedding has set, secured with a continuous haunching of concrete or on a race of fresh concrete with backing concrete cast monolithically.

##### 520 ADVERSE WEATHER

- Conditions: Do not construct if the temperature is below 3°C on a falling thermometer or 1°C on a rising thermometer. Adequately protect foundations, bedding and haunching against frost and rapid drying by sun and wind.

##### 530 CONCRETE FOR FOUNDATIONS, RACES AND HAUNCHING

- Standard: To BS 8500-2.
- Designated mix: Not less than GEN0

##### 540 CEMENT MORTAR BEDDING

- General: To section Z21.
- Mix (Portland cement:sand): 1:3.
  - Portland cement: Class CEM I 42.5 to BS EN 197-1.
  - Sand: to BS EN 12620, grade 0/4 or 0/2 (MP).
- Bed thickness: 100 mm.

##### 600 RADIUS KERBS/CHANNELS

- Usage: Radii of 15 m or less.

##### 610 ANGLE KERBS

- Usage: Internal and external 90° changes of direction.
- Cutting of mitres: Not permitted.

## HARDWORKS SPECIFICATION

---

### General Hardworks Specification, Bromley Croft

#### 620 ACCURACY

- Deviations (maximum):
  - Level:  $\pm 6$  mm.
  - Horizontal and vertical alignment: 3 mm in 3 m.

#### 625 REGULARITY OF PAVED SURFACES

- Maximum undulation of (non-tactile) paving surface: 3 mm.
  - Method of measurement: Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
- Difference in level between adjacent units (maximum):
  - Joints flush with the surface: Twice the joint width (with 5 mm max difference in level).
    - Recessed, filled joints: 2 mm.  
Recess depth (maximum): 5 mm.
    - Unfilled joints: 2 mm.
- Sudden irregularities: Not permitted.

#### 630A NARROW MORTAR JOINTS

- Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled, tightly butted and surplus mortar removed immediately.

#### 640A TOOLED MORTAR JOINTS

- Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled and tooled to a neat flush profile.

# HARDWORKS SPECIFICATION

---

## General Hardworks Specification, Bromley Croft

### Q20 Granular sub-bases to roads/pavings

To be read with Preliminaries/ General conditions.

#### 120A CHECKING OF SUBGRADES

- Subgrade variation: If material appears to vary from anticipated conditions, or if there are extensive soft spots, report condition and await instruction before proceeding.
- Submit: Results and obtain instructions before proceeding.

#### 130A HERBICIDES

- Type: Contractor's choice.
- Application: To subgrade of play areas.

#### 140 EXCAVATION OF SUBGRADES

- Final excavation to formation or subformation level: Carry out immediately before compaction of subgrade.
- Soft spots and voids: Give notice.
- Old drainage and service trenches: Give notice.
- Wet conditions: Do not excavate or compact when the subgrade may be damaged or destabilized.

#### 145 PREPARATION AND COMPACTION OF SUBGRADES

- Timing: Immediately before placing sub-base.
- Soft or damaged areas: Obtain instructions.
- Compaction: Thoroughly, by roller or other suitable means, adequate to resist subsidence or deformation of the subgrade during construction and of the completed roads/ paving when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.

#### 150 SUBGRADES FOR VEHICULAR AREAS

- Preparation and treatment: To Highways Agency 'Specification for highway works', clauses 616 and 617.

#### 172 GEOTEXTILE FILTER/ SEPARATOR MEMBRANE

- Manufacturer: Submit proposals.
  - Product reference: Submit proposals.
- Jointing: As manufacturer's recommendation.
- Protect from:
  - Exposure to light, except during laying (maximum five hours).
  - Contaminants.
  - Materials listed as potentially deleterious by geotextile manufacturer.
  - Damage, until fully covered by fill.
  - Wind uplift, by laying not more than 15 m before covering with fill.
- Preparation: Remove humps and sharp projections and fill hollows before laying.

#### 180 NOTICE

- Give notice:
  - After preparation and compaction of subgrades; and
  - For inspection of granular sub-base material before spreading; and
  - On completion of compaction of sub-base.
- Period of notice: 2 working days.

## HARDWORKS SPECIFICATION

---

### General Hardworks Specification, Bromley Croft

- 210 HIGHWAYS AGENCY TYPE 1 UNBOUND MIXTURE FOR SUB-BASE
- Material: Type 1 unbound mixture to Highways Agency 'Specification for highway works', clauses 801 and 803.
    - Recycled aggregate: Permitted.
- 211 GRANULAR MATERIAL
- Quality: Of a known suitability for use in sub-bases, free from excessive dust, well graded, all pieces less than 75 mm in any direction, minimum 10% fines value of 50 kN when tested in a soaked condition to BS 812-111 or a resistance to fragmentation of LA50 for the Los Angeles test to BS EN 1097-2, and in any one layer only one of the following:
    - Crushed rock (other than argillaceous rock) or quarry waste with not more binding material than is required to help hold the stone together.
    - Crushed concrete, crushed brick or tile, free from plaster, timber and metal.
    - Gravel or hoggin with not more clay content than is required to bind the material together, and with no large lumps of clay.
    - Natural gravel.
    - Natural sand.
- 213 BLINDING PROTECTION FOR MEMBRANES
- Location: On sub-base to receive separating membrane.
  - Material: Fine material approved by the membrane manufacturer.
  - Thickness (minimum): Sufficient to fill interstices and cover all stones.
  - Compaction: Moisten as necessary before final rolling to provide a flat, closed, smooth surface.
  - Permissible deviations on surface level:  $\pm 20$  mm.
- 230 PLACING GRANULAR MATERIAL GENERALLY
- Preparation: Loose soil, rubbish and standing water removed.
  - Structures, membranes and buried services: Ensure stability and avoid damage.
- 240 LAYING GRANULAR SUB-BASES FOR VEHICULAR AREAS
- General: Spread and levelled in layers. As soon as possible thereafter compact each layer.
  - Standard: To Highways Agency 'Specification for highway works' clause 802.
  - At drainage fittings, inspection covers, perimeters and where local excavation and backfilling has taken place: Take particular care to compact fully.
- 250 LAYING GRANULAR SUB-BASES FOR PEDESTRIAN AREAS
- General: Spread and levelled.
  - Compaction:
    - Timing: As soon as possible after laying.
    - Method: By roller or other suitable means, adequate to resist subsidence or deformation of the sub-base during construction and of the completed paving when in use. Take particular care to compact fully at intrusions, perimeters and where local excavation and backfilling has taken place.
- 310 ACCURACY
- Permissible deviation from required levels, falls and cambers (maximum):
    - Subgrades:
      - Roads and parking areas: +20 -30 mm.
      - Footways and recreation areas:  $\pm 20$  mm.
    - Sub-bases:
      - Roads and parking areas:  $\pm 20$  mm.
      - Footways and recreation areas:  $\pm 12$  mm .

## HARDWORKS SPECIFICATION

---

### General Hardworks Specification, Bromley Croft

- 320 SURFACES TO RECEIVE SAND BEDDING FOR PAVING TO SECTIONS Q24 and Q25.
- Blind surface: As necessary before compaction to ensure that surface is tight and dense enough to prevent laying course sand being lost into it during construction or use.
  - Material: Approved fine material.
- 330 COLD WEATHER WORKING
- Frozen materials: Do not use.
  - Freezing conditions: Do not place fill on frozen surfaces. Remove material affected by frost. Replace and recompact if not damaged after thawing.
- 340 PROTECTION
- Sub-bases: As soon as practicable, cover with subsequent layers, specified elsewhere.
  - Subgrades and sub-bases: Prevent degradation by construction traffic, construction operations and inclement weather.



## HARDWORKS SPECIFICATION

---

### General Hardworks Specification, Bromley Croft

#### **Q23 Gravel/ Hoggin/ Woodchip/ Resin bound roads/ paving/ overlays**

- 200 RESIN BOUND AGGREGATE SURFACING SUITABLE FOR FOOTPATHS WITH OCCASIONAL MAINTENANCE VEHICLES WHERE SPECIFIED IN DRAWINGS / SCHEDULES
- Subgrade improvement layer: Submit proposals, subject to approval.
    - Compacted thickness: Submit proposals, subject to approval.
  - Granular sub-base: As drawing subject to LA's approval.
    - Compacted thickness: As drawing subject to LA's approval.
  - Blinding layer: Clean angular stone chippings:
    - Size: Graded 19-32 mm, subject to LA's approval.
    - Thickness: 50 mm, subject to LA's approval.
  - Binder course: Close graded asphalt concrete, max 160/220 pen to BS EN 13108-1:2006 (Bituminous Macadam)
    - Size: Maximum size AC 14, subject to LA's approval.
    - Thickness: Minimum depth 50 mm, subject to LA's approval.
    - Consolidation: Before application of surface course, allow surface to dry and consolidate.
    - Deviation: Maximum deviation of the binder course should not exceed 3mm under a 1 meter straight edge.
  - Compaction to subgrade improvement layer, granular sub-base, blinding layer and binder course: By heavy roller or other appropriate means, adequate to resist subsidence or deformation of the completed roads/ pavings when in use. Do not crush chippings.
  - Surface course:
    - Manufacturer: Submit proposals
    - Product reference: Submit proposals
    - Slip/ skid resistance: Submit proposals, subject to LA's approval.
    - Aggregate:
- Colour: As specified on drawing. Sample to be approved by LA prior to any orders being placed.
- Size: 3mm-10mm as required to achieve colour specified and suitable slip/ skid resistance.
- Depth: In accordance with manufacturer's instruction. Typical depths: 3mm aggregate requires 16mm depth layer; 6mm aggregate requires 18mm depth layer; 10mm aggregate requires 24mm depth layer.
  - Design: Bespoke design as specified on drawing. To be implemented by approved specialist contractor, in accordance with manufacturer's instruction.
  - Accessories:
    - Product: ProEdge galvanised steel edging
    - Supplier: Everedge Ltd
    - Size: 2.5mm thick x 125mm depth x 2.5m lengths
    - Finish: Powder-coated paint
    - Colour: Slate
    - Installation and fixings: Install to smooth flowing curves. By approved specialist contractor, in accordance with manufacturer's instruction.
  - Application: By approved specialist contractor, in accordance with manufacturer's instruction.
- Completion: Before trafficking, remove excess chippings.

# HARDWORKS SPECIFICATION

---

## General Hardworks Specification, Bromley Croft

### 210 PERMEABLE RESIN BOUND AGGREGATE SURFACING SUITABLE FOR FOOTPATHS WITH OCCASIONAL MAINTENANCE VEHICLES WHERE SPECIFIED IN DRAWINGS / SCHEDULES

- Subgrade improvement layer: Submit proposals, subject to LA's approval.
  - Compacted thickness: Submit proposals, subject to LA's approval.
- Granular sub-base: As drawing subject to LA's approval.
  - Compacted thickness: As drawing subject to LA's approval.
- Blinding layer: As drawing subject to LA's approval.
- Binder course: As drawing subject to LA's approval.
- Compaction to subgrade improvement layer, granular sub-base, blinding layer and binder course: By heavy roller or other appropriate means, adequate to resist subsidence or deformation of the completed roads/ pavings when in use. Do not crush chippings.
- Surface course:
  - Manufacturer: Submit proposals
  - Product reference: Submit proposals
  - Slip/ skid resistance: Submit proposals, subject to LA's approval.
  - Aggregate:
    - Colour: As specified on drawing. Sample to be approved by landscape architect prior to any orders being placed.
    - Size: 3mm-10mm as required to achieve colour specified and suitable slip/ skid resistance.
    - Depth: In accordance with manufacturer's instruction. Typical depths: 3mm aggregate requires 16mm depth layer; 6mm aggregate requires 18mm depth layer; 10mm aggregate requires 24mm depth layer.
  - Application: By approved specialist contractor, in accordance with manufacturer's instruction.
- Completion: Before trafficking, remove excess chippings.

## LAYING

### 325A BLINDING TO SUB-BASE

- Type: As drawing subject to LA's approval.
- Laying: Compact. Seal interstices. Provide free drainage.
- Compacted thickness: As drawing.

### 330A HERBICIDE TO PAVING Q23/

- Type: Suitable for the application, location and conditions of use.
- Weeds and moss: Grub up.
- Application: As section A34, before surfacing.

### 340 LAYING GENERALLY

- Channels, gullies, etc: Keep clear.
- Finished surfaces:
  - Lines and levels: To prevent ponding.
  - Overall texture: Even.
- State at completion: Clean.

### 350 COLD WEATHER WORKING

- Frozen materials: Do not use.
- Freezing conditions: Do not lay pavings.
- Cold bituminous surface dressings: Do not apply when ambient temperature is below 10°C.

## HARDWORKS SPECIFICATION

---

### General Hardworks Specification, Bromley Croft

- Other dressings or overlays: As manufacturers' recommendations.
- 360 DRAINAGE FALLS
- Sealed surfaces:
    - Falls and cross falls (minimum): 1:40.
    - Camber (minimum): 1:50.
  - Unsealed surfaces (minimum): 1:30.
- 370 LAYING GRANULAR SURFACES IN VEHICULAR AREAS
- Permissible deviation from required levels, falls and cambers (maximum):  $\pm 20$ mm.
  - General: Spread and level in 150 mm maximum layers. As soon as possible compact each layer.
  - Dry weather: Lightly water layers during compaction.
- 380 LAYING GRANULAR SURFACES IN PEDESTRIAN AREAS
- Permissible deviation from required levels, falls and cambers (maximum):  $\pm 12$  mm.
  - General: Spread and level in 100 mm maximum layers. As soon as possible, compact each layer.
  - Dry weather: Lightly water layers during compaction.
- 390 PROTECTION FROM TRAFFIC AND PLANT
- Paved areas: Restrict access to prevent damage.

# HARDWORKS SPECIFICATION

---

## General Hardworks Specification, Bromley Croft

### Q25 Slab/brick/sett/cobble pavings

To be read with Preliminaries/ General conditions.

#### GENERAL

- 111 NATURAL STONE PAVING
- Subgrade improvement layer: Not required, subject to LA's approval.
    - Compacted thickness: Not required, subject to LA's approval.
  - Granular sub-base: Highways Agency Type 1 unbound mixture, as section Q20.
    - Compacted thickness: 150 mm.
  - Base: Not required, subject to LA's approval.
    - Thickness: Not required, subject to LA's approval.
  - Paving units: Indian Sandstone 610mm x 610mm, 18mm nominal thickness.
  - Flexible laying course: Sand bed.
  - Laying: Paving stones to be laid as hard landscape plan BCR-epd-ELS-XX-DR-L-1002.
  - Jointing: 10mm wide joints pointed with cement.
  - Overall nominal thickness of paving stones and bedding: 68 mm.
- 112 CONCRETE BLOCK PAVING
- Subgrade improvement layer: Not required, subject to LA's approval.
    - Compacted thickness: Not required, subject to LA's approval.
  - Granular sub-base: Highways Agency Type 1 unbound mixture, as section Q20.
    - Compacted thickness: 150 mm.
  - Base: Not required, subject to LA's approval.
    - Thickness: Not required, subject to LA's approval.
  - Paving units: Pedesta 200mm x 100mm, 60mm nominal thickness.
  - Flexible laying course: Sand bed.
  - Laying: Paving stones to be laid as hard landscape plan BCR-epd-ELS-XX-DR-L-1002.
  - Jointing: 10mm wide joints pointed with cement.
  - Overall nominal thickness of paving stones and bedding: 100 mm.
- 365A GEOTEXTILE SHEET GENERALLY
- Manufacturer: Submit proposals.
    - Product reference: Contractor's choice.
  - Recycled content: 90% (minimum) to BS EN ISO 14021.
- 395 SAND FOR FLEXIBLE LAYING COURSE AND JOINTING GENERALLY
- Standard: To BS 7533-4, unbound construction laying course and jointing material.  
Purity: Free from deleterious salts, contaminants, lime and cement.  
Procurement: Obtain from one source and ensure consistent grading.
- 435A PRIMER FOR UNDERSIDE OF FLAGS AND SLABS GENERALLY
- Manufacturer: Contractor's choice.
    - Product reference: Contractor's choice.
- 455A JOINT FILLER FOR MOVEMENT JOINTS GENERALLY
- Type: Compressible rubber or plastics compatible with specified sealant.
  - Manufacturer: Submit proposals if required.

# HARDWORKS SPECIFICATION

---

## General Hardworks Specification, Bromley Croft

Product reference: Submit proposals if required.

### 460A JOINT BREAKER BARRIERS FOR MOVEMENT JOINTS GENERALLY

- Manufacturer: Submit proposals if required.  
Product reference: Submit proposals if required.

### 465A SEALANT FOR MOVEMENT JOINTS GENERALLY

- Sealant:
  - Type: Submit proposals if required.
  - Manufacturer: Submit proposals if required.
- Product reference: Submit proposals if required.
- Colour: Submit proposals if required.

### 470A SEALER/ STABILIZER SOLUTION FOR BLOCKS AND SETTS GENERALLY

- Manufacturer: Submit proposals if required.  
Product reference: Submit proposals if required.

## EXECUTION

### 610 MATERIAL SAMPLES

- Samples representative of colour and appearance of designated materials: Submit before placing orders.

Designated materials: All pavings.

### 615A CONTROL SAMPLES

- Sample areas: Complete as part of the finished work.
  - Types of paving: All pavings.
  - Location: pedestrian area
  - Size (minimum): As required by landscape architect.
  - Included features: As required by landscape architect.
- Approval of appearance and surface: Obtain before proceeding.

### 620 ADVERSE WEATHER

- General:
  - Temperature: Do not lay or joint paving if the temperature is below 3°C on a falling thermometer or below 1°C on a rising thermometer.
  - Frozen materials: Do not use. Do not lay bedding on frozen or frost covered bases.
- Paving with mortar joints and/ or bedding:
  - Protect from frost damage, rapid drying out and saturation until mortar has hardened.
- Paving laid and jointed in sand:
  - Stockpiled bedding sand: Protect from saturation.
  - Exposed areas of sand bedding and uncompacted areas of sand bedded paving: Protect from heavy rainfall.
  - Saturated sand bedding: Remove and replace, or allow to dry before proceeding.
  - Laying dry-sand jointed paving in damp conditions: Brush in as much jointing sand as possible. Minimize site traffic over paving. As soon as paving is dry, top up joints and complete compaction.

### 625 LAYING PAVINGS - GENERAL

- Appearance: Smooth and even with regular joints and accurate to line, level and profile.

## HARDWORKS SPECIFICATION

---

### General Hardworks Specification, Bromley Croft

- Falls: To prevent ponding.
  - Bedding of paving units: Firm so that rocking or subsidence does not occur or develop.
    - Bedding/ Laying course: Consistently and accurately graded, spread and compacted to produce uniform thickness and support for paving units.
  - Slopes: Lay paving units upwards from the bottom of slopes.
  - Paving units: Free of mortar and sand stains.
  - Cutting: Cut units cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.
- 630 LEVELS OF PAVING
- Permissible deviation from specified levels:
    - Generally:  $\pm 6$  mm.
  - Height of finished paving above features:
    - At gullies: +6 to +10 mm.
    - At drainage channels and kerbs: +3 to +6 mm.
- 637 REGULARITY OF PAVED SURFACES
- Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 3 mm.
  - Joints between paving units or utility access covers:
    - Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
    - Recessed, filled joints: difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
    - Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
  - Sudden irregularities: Not permitted.
- 640A COLOUR BANDING
- General: Unless premixed by manufacturer, select from an adequate number of separate packs in rotation to avoid colour banding.
- 645A PROTECTION
- Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
  - Materials storage: Do not overload pavings with stacks of materials.
  - Handling: Do not damage paving unit corners, arrises, or previously laid paving.
  - Mortar bedded pavings: Keep free from traffic after laying:
    - Pedestrian traffic (minimum): 7 days, subject to LA's approval.
    - Vehicular traffic (minimum): 28 days, subject to LA's approval.
  - Access: Restrict access to paved areas to prevent damage from site traffic and plant.
- 650 CEMENTITIOUS BASES AND SUB-BASES
- General: Protect from moisture loss, if not covered by another pavement course within 2 hours of completion.
- 655 CONDITION OF SUB-BASES/ BASES BEFORE SPREADING LAYING COURSE
- Trenches and excavation of soft or loose spots in subgrade: Fill and thoroughly compact.
  - Granular surfaces: Lay and compact so as to be sound, clean, smooth and close-textured enough to prevent migration of bedding/ laying course materials into the sub-base during compaction and use, free from movement under compaction plant and free from compaction ridges, cracks and loose material.
  - Prepared existing and new bound bases (roadbases): Sound, clean, free from rutting

# HARDWORKS SPECIFICATION

---

## General Hardworks Specification, Bromley Croft

or major cracking. Remove sharp stones, projections and debris.

- Sub-base/ Roadbase level tolerances: To BS 7533-7, Annex A.
- Levels and falls: Accurate and within the specified tolerances.
- Drainage outlets: Within 0-10 mm of the required finished level.
- Features in sand bedded paving (including mortar bedded restraints and drainage ironwork): Complete to required levels; adequately bed and haunch in mortar.
- Sub-bases containing cement/ hydraulic binder: Cure for minimum times specified in BS 7533-4.

### 660A DRAINAGE HOLES IN EXISTING BASES

- Location: Impervious layers of existing road/ paving.
- Drainage: Form regular grid of holes, through base and any additional build up, down to sub-base:
  - Spacing in both directions: Submit proposals, subject to LA's approval.
  - Minimum clear opening: Submit proposals, subject to LA's approval.
  - Do not weaken or excessively disturb road/ paving.
- Completion: Remove jagged or protruding edges. Fill voids with Submit proposals, subject to LA's approval Ram down to form flush smooth surface.

### 665A PLANING AND REPAIRS TO EXISTING BASES

- Existing macadam/ asphalt surfaces: Plane to required levels.
- Repairs: Submit proposals, subject to LA's approval.
- Building up existing surfaces to required levels: Submit proposals, subject to LA's approval.

### 675A LAYING GEOTEXTILE SHEET EDGING STRIPS

- Location: Immediately below sand laying course, abutting features which interrupt the laying course, including:
  - Perimeters/ Edge restraints/ Kerbs.
  - Other types of paving.
  - Drainage fittings, e.g. channels and manholes.
- Edge detail: Turn sheet up to a height not less than thickness of sand bedding to form an upstand fitted neatly against features.
- Width: In accordance with manufacturer's instructions.
- Jointing: Lap by In accordance with manufacturer's instructions.

### 680A LAYING GEOTEXTILE SHEET PATCHES OVER DRAINAGE HOLES

- Laying: Lay geotextile patches on the base, centred over each hole.
- Size of patch: In accordance with manufacturer's instructions.

### 685A LAYING GEOTEXTILE SHEET OVERLAYS

- Location: Immediately below sand bedding course.
- Laying: Fit neatly at edge restraints and other features that interrupt sand bedding course, e.g. drainage fittings, channels, manholes and kerbs.
- Edge detail: Turn sheet up to form an upstand against features, height not less than thickness of sand bedding.
- Width: In accordance with manufacturer's instructions.
- Jointing: Lap by In accordance with manufacturer's instructions.

### 700A SITE MIXED FINE CONCRETE GENERALLY

- Standard: In accordance with BS 7533-7.

### 712 LAYING PAVING - SAND LAYING COURSE AND JOINTING

- Standard: In accordance with BS 7533-4.

## HARDWORKS SPECIFICATION

---

### General Hardworks Specification, Bromley Croft

- Laying course:
  - Nominal thickness after compaction: As drawing.
- Joint width: 2-5 mm.

#### 720 LAYING PAVING - MORTAR LAYING COURSE AND JOINTING

- Standard generally: In accordance with BS 7533-4.
- Laying course:
  - Nominal thickness: As drawing.
- Laying and jointing: As drawing.
- Joint width (nominal): As drawing.
  - Recess mortar joints below sett surface by: As drawing.

#### 785 TOOLED JOINTS IN MORTAR BEDDED UNITS

- Joints: Completely filled with bedding mortar as work proceeds.
  - Joint width: As drawing.
  - Finish: Neat flush profile.

#### 795A SEALANT MOVEMENT JOINTS IN MORTAR BEDDED UNITS

- Spacing: Submit proposals if required, subject to LA's approval.
- Extent of joints: Submit proposals if required, subject to LA's approval.
- Joint filler: Compressible cellular rubber or plastics compatible with specified sealant. Build in as work proceeds.
  - Joint width: Submit proposals if required, subject to LA's approval.
- Barrier (joint breaker): As recommended by sealant manufacturer. Position filler and barrier accurately to fully support sealant at recommended distance from exposed faces of units.
- Sealant:
  - Application: As section Z22.

### COMPLETION

#### 915A COMPLETION OF PAVING WITH DRY SAND OR FINE AGGREGATE FILLED JOINTS

- Sand dressing: Leave a thin layer of dry jointing sand over the paving, sweep clean before practical completion and/or opened to public access.
- Final compaction of the surface course: In accordance with BS 7533-3.
- Vacuum cleaning machines: Not allowed.



# HARDWORKS SPECIFICATION

---

## General Hardworks Specification, Bromley Croft

### Q40 Fencing

To be read with Preliminaries/ General conditions.

#### FENCING SYSTEMS

- 200 TIMBER KNEE RAIL STANDARD
- Manufacturer: Submit proposals.
  - Product reference: Submit proposals.
  - Height: As drawing.
  - Timber posts: As drawing.
  - Treatment: As drawing.
  - Timber rail: As drawing.
  - Finish: As drawing.
  - Maximum centres of posts: As drawing.
  - Method of setting posts: As drawing.

#### EXECUTION

- 710 INSTALLATION GENERALLY
- Set out and erect:
    - Alignment: Straight lines or smoothly flowing curves.
    - Tops of posts: Following profile of the ground.
    - Setting posts: Rigid, plumb and to specified depth, or greater where necessary to ensure adequate support.
    - Fixings: All components securely fixed.
- 715A COMPETENCE
- Operatives: Contractors must employ competent operatives.
- 720 SETTING POSTS IN CONCRETE
- Standard: To BS 8500-2.
  - Mix: Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2.
  - Alternative mix for small quantities: 50 kg Portland cement to 150 kg fine aggregate to 250 kg 20 mm nominal maximum size coarse aggregate, medium workability.
  - Admixtures: Do not use.
  - Holes: Excavate neatly and with vertical sides.
  - Filling: Position post/ strut and fill hole with concrete to not less than the specified depth, well rammed as filling proceeds and consolidated.
  - Backfilling of holes not completely filled with concrete: Excavated material, well rammed and consolidated.
- 730 EXPOSED CONCRETE FOUNDATIONS
- Filling: Compact until air bubbles cease to appear on the upper surface.
  - Finishing: Weathered to shed water and trowelled smooth.
- 740 SETTING POSTS IN EARTH
- Holes: Excavated neatly, with vertical sides and as small as practicable to allow refilling.
  - Filling: Position posts/ struts and replace excavated material, well rammed as filling proceeds.

## HARDWORKS SPECIFICATION

---

### General Hardworks Specification, Bromley Croft

#### 750 DRIVEN POSTS

- Damage to heads: Minimize.  
Repair: Neatly finish post tops after installation.

#### 760 NAILED WOOD RAILS

- As per fencing drawing BCR-epd-ELS-XX-DR-L-2002.

#### 770 SITE CUTTING OF WOOD

- General: Kept to a minimum.
- Below or near ground level: Cutting prohibited.
- Treatment of surfaces exposed by minor cutting and drilling: Two flood coats of solution recommended for the purpose by main treatment solution manufacturer.

#### 780 MAKING GOOD GALVANIZED SURFACES

- Treatment of minor damage (including on fasteners and fittings): Low melting point zinc alloy repair rods or powders made for this purpose, or at least two coats of zinc-rich paint to BS 4652.
- Thickness: Apply sufficient material to provide a zinc coating at least equal in thickness to the original layer.

#### 790 SITE PAINTING

- Timing: Prepare surfaces and apply finishes as soon as possible after fixing.

### COMPLETION

#### 910 CLEANING

- General: Leave the works in a clean, tidy condition.
- Surfaces: Clean immediately before handover.

#### 920 FIXINGS

- All components: Tighten.
  - Timing: Before handover.

# HARDWORKS SPECIFICATION

---

## General Hardworks Specification, Bromley Croft

### Q50 Site/street furniture/equipment

To be read with Preliminaries/ General conditions.

#### GATES, BARRIERS AND PARKING CONTROLS

##### 190A BOLLARDS

- Manufacturer: Submit proposals.
- Product reference: Submit proposals.
- Material: Steel.
- Finish as delivered: Grade 304 Stainless Steel.
- Height above ground: 750mm.
- Method of fixing: Root, 300 mm below ground, set in concrete base.

#### SITE AND STREET FURNITURE

##### 220 BENCHES

- Manufacturer: To be agreed by the client.
- Material: Pressure treated softwood.
- Finish: Sanded softwood.
- Colour: Natural.
- Size: Length: To be agreed by the client.
- Accessories/ Special requirements: As specified on drawing.
- Method of fixing: As per manufacturers' recommendations.

##### 231 TRIANGULAR BENCH/ PLANTER

- Manufacturer: Meristem Design or equivalent
- Material: Treated softwood, steel frame
- Timber: FSC certified softwood
- Finish: Sanded softwood.
- Colour: Natural.
- Size: As drawing
- Accessories/ Special requirements: Planter box designed along the back of the seat
- Method of fixing: Bench to sit on 300 mm C20 concrete base.

##### 240A LITTER BINS (BIN STORE) WHERE INDICATED IN DRAWINGS / SCHEDULES

- Manufacturer: To be agreed by the client.
- Product reference: N/A
- Material: Pressure treated softwood.
- Finish: Standard softwood.
- Colour: Natural.
- Accessories/ Special requirements: Close board fence with gate, tee hinge or similar approved, Brenton gate bolt.
- Method of fixing: below ground, as per drawing BCR-epd-ELS-XX-DR-L-2003.

#### INSTALLATION

# HARDWORKS SPECIFICATION

---

## General Hardworks Specification, Bromley Croft

### 510A CONCRETE FOUNDATIONS GENERALLY

- Standard: To BS 8500-2.
- Concrete: Submit proposals, subject to LA's approval.
- Admixtures: Do not use.
- Foundation holes: Neat vertical sides.
- Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

### 515A SETTING COMPONENTS IN CONCRETE

- Holes: As specified on drawings, subject to LA's approval.
- Components: Accurately positioned and securely supported.
- Concrete fill: Fully compacted as filling proceeds.
- Concrete foundations exposed to view: Compacted until air bubbles cease to appear on the upper surface, then weathered to shed water and trowelled smooth.
- Temporary component support: Maintain undisturbed for minimum 48 hours.

### 520A SETTING IN EARTH

- Holes: As small as practicable.
- Components being fixed: Accurately positioned and securely supported.
- Buried depth (minimum): As drawings, subject to LA's approval.
- Earth refill: Well rammed as filling proceeds.

### 530 PRESERVATIVE TREATED TIMBER

- Surfaces exposed by minor cutting and drilling: Treated by immersion or with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.
- Heavily worked sections: Re-treat.

### 545 ERECTION OF TIMBER AND PREFABRICATED STRUCTURES

- Checking: 5 days (minimum) before proposed erection date, check foundations, holding down bolts, etc.
- Inaccuracies or defects in prepared bases or supplied structures: Report immediately.  
Obtain instructions before proceeding.

### 550 DAMAGE TO GALVANIZED SURFACES

- Minor damage in areas up to 40 mm<sup>2</sup> (including on fixings and fittings): Make good.
  - Material: Low melting point zinc alloy repair rods or powders made for this purpose or at least two coats of zinc-rich paint to BS 4652.
  - Thickness: Sufficient to provide a zinc coating at least equal to the original layer.

### 560 SITE PAINTING

- Timing: Prepare surfaces and apply finishes as soon as possible after fixing.