

Studio Bosk Limited

Barratt West London

# Former Nestle Factory

H7232-BOS-SW-XX-SP-AL-90001 C08

21-12-2023

Former Nestle Factory Stage 4

Site Wide Hard and Soft Landscape Specification

Reason for Issue: Block F3 Condition Discharge

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# 00 Introduction

## Clauses

### 100 The Project

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1. Name: Former Nestle Factory
2. Location: Nestles Ave, Hayes UB3 4QF
3. This specification is a sitewide document as the materials and construction methodology is intended to be consistent across the masterplan.

### 102 Supporting Information

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1. Refer to project Engineer's drawings and specification for:
  - Foundations,
  - Base,
  - Sub-bases,
  - Drainage information
  - Information relating to services and utilities,
  - Structural features.
  - Lighting of external landscape spaces

### 103 Contractors Design

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1. The contractor is required to develop the following items as only Design Intent information is provided within this package:
  - F-10 SINGLE HANDRAIL - NBS L37/150A
  - F-10A DOUBLE SIDED OFFSET HANDRAIL - NBS L37/150B
  - F-10B SINGLE SIDED OFFSET HANDRAIL - NBS L37/150C
  - F-19 ECOLOGY POLE - NBS Q50/350A
  - PL-5 PLAY TRAIN - NBS Q52/356A
  - PL-11 SAILING BOAT - NBS Q52/355A
  - PL-14 PLAY STRUCTURE - NBS Q52/340A
  - REFUSE SHELTER - NBS B91/385A
  - W-1 CONCRETE RETAINING WALL TO PRIVATE TERRACES. NBS L37/112A
  - W-2 CONCRETE RETAINING WALL TO STEPS AND RAMPS NBS L37/112B
  - F-21 VENTILATION ENCLOSURE - NBS Q50/220B

Bespoke fixings for Podium level play equipment:

- PL-1 SPRINGY DISKS - NBS Q52/390A
- PL-10 TALKING TUBE - NBS Q52/380A
- PL-14 PLAY STRUCTURE - NBS Q52/340A
- PL-15 CLAMBER STACK - NBS Q52/340B
- PL-16 SEESAW - NBS Q52/390B
- PL-17 CLAMBER STACK 2 - NBS Q52/340C
- PL-18 STEPPING POLES - NBS Q52/330B
- PL-19 NURSERY SWING - NBS Q52/441A

Fixings for Art work, refer to Art Strategy for details of the artwork. Artwork provided by others. Specification includes information on the interface between the artwork and the landscape elements. Contractor to develop design for fixings in coordination with the artwork fabricator.

- A-5 BESPOKE SCULPTURE - BLUE TANK FAMILY NBS Q50/340A
- A-7 BESPOKE SCULPTURE - PLAY PIPES NBS Q50/340B
- A-8A BESPOKE SCULPTURE - RED ANGULAR PIPES NBS Q50/340C
- A-8B BESPOKE SCULPTURE - RED PIPES TRIM TRAIL NBS Q50/340D
- A-8F BESPOKE SCULPTURE - WALKING WHISK LIGHTS NBS Q50/340E

Ω End of Section

# B91

## Buildings in the landscape

### System outline

#### 105 Proprietary small buildings/ structures

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1. Description: Canal and Rivers Trust Bin Store
2. Building type: Bin Store
3. Services requirements: Above ground drainage & below ground drainage systems.

### System performance - Not Used

### Products

#### 385A F22- Canal & Rivers Trust Bin Store

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1. Manufacturer: [Falco UK Ltd](#)
  - 1.1. Contact details
    - 1.1.1. Address: Unit 8  
Leekbrook Way  
Leekbrook  
Staffordshire  
United Kingdom  
ST13 7AP
    - 1.1.2. Telephone: [01538 380080](tel:01538380080)
    - 1.1.3. Web: [www.falco.co.uk](http://www.falco.co.uk)
    - 1.1.4. Email: [sales@falco.co.uk](mailto:sales@falco.co.uk)
  - 1.2. Product reference: [FalcoLok-250 Bin Store](#)
2. Shelter type: Bespoke shelters.
3. Base: Concrete foundation to engineers specification.
4. Method of fixing to ground or base: Baseplate fixed with over sized legs to allow for fixing to concrete foundation below paved surface.
5. Services requirements: None
6. System accessories: Powder coated corrugated steel roof. Colour to match framework RAL 7001.
7. Dimensions: 2495 x 3980 x 2250 mm.
8. Colour: Metalwork, including frame and roof surface, powder coated to match the building architectural metalwork. RAL 7001
9. Cladding: Vertical hardwood.
10. Components: Base section, dim. 2500 x 3980 mm.
11. Gutter: Galvanised and powder coated drainpipe. RAL7001. Refer to layout drawing for location on the rear of the short side.
12. Walls: End wall cladding in standard hardwood. Side wall in standard hardwood.
13. Doors: Single door cladding in standard hardwood on long face of the unit.
  - 13.1. Furniture: Sliding locking mechanism with padlock function. Padlock to be supplied by others.

## Materials - Not Used

### Execution/ erection/ installation

#### 600 Erection/ installation generally

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1. Frameworks: Assemble and brace, including temporary members required for installation
2. Contact between dissimilar metals: Avoid
3. Fixings: Fully bolted together

#### 605 Jointing/ Fixing generally

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1. Generally: Where not specified precisely, select methods of jointing and fixing and types, sizes and spacings of fasteners in compliance with section Z20.

#### 610 Concrete foundations generally

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1. Concrete: To BS 8500-2.
2. Mix: Designated concrete not less than GEN 1 or standard prescribed concrete not less than ST2.
3. Admixtures: Do not use.
4. Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.
5. Foundation holes: Neat vertical sides.
6. Components: Accurately positioned and securely supported.
7. Concrete fill: Compact as filling proceeds.
8. Concrete foundations exposed to view: Compact until air bubbles cease to appear on the upper surface, then weather to shed water and trowel smooth.
9. Temporary component support: Maintain undisturbed for minimum 48 hours.

#### 630 Erection of prefabricated buildings/ structures

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

#### 645 Making good galvanized surfaces

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1. Minor damage in areas up to 40 mm<sup>2</sup> (including on fixings and fittings): Make good.
  - 1.1. 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.
  - 1.2. Thickness: Sufficient to provide a zinc coating at least equal to the original layer.

#### 650 Making good treated timber

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1. Surfaces exposed by minor cutting and/ or drilling: Treat by immersion or apply two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.
2. Heavily worked sections: Re-treat.
3. Cutting and machining: Cut and machine timber as much as possible before treatment.
4. Extensively processed timber: Retreat timber sawn lengthways, planed, ploughed, etc.

## Completion

### 930 Documentation

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1. Contents
  - 1.1. General product information.
  - 1.2. Installation information.
  - 1.3. Inspection and maintenance reports.
2. Number of copies: 2
3. Submission: Two weeks after request by contract administrator

Ω End of Section

## D20 Excavating and filling

### Generally/the site

#### 110 Site investigation

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1. Report: Refer to contamination reports for relevant phase on DocElite.

#### 145 Variations in ground water level

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1. Give notice: If levels encountered are significantly different from levels in the site investigation report or previously measured.

#### 150 Existing services, features and structures

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1. Services: See section A12 for locations.
2. Site features to be retained: See section A12 for details.
3. Structures: See section A34 for details of protection.

### Clearance/excavating

#### 164 Tree roots

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1. Protected area: Do not cut roots within precautionary protection area.
  - 1.1. Size of area: Refer to arboricultural method statement
2. Excavation in protected area
  - 2.1. Method: By hand
  - 2.2. Backfill as soon as possible or temporarily line with polyethylene sheet to reduce evaporation.
3. Outside protected area: Give notice of roots exceeding 25 mm and do not cut without approval.
4. Cutting
  - 4.1. Make clean smooth cuts with no ragged edges.
  - 4.2. Pare cut surfaces smooth with a sharp knife.
  - 4.3. Treatment of cut roots: Refer to arboricultural method statement
5. Backfill: As dug material, enriched with amelioration as section Q31

#### 168 Site clearance

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1. Timing: Before topsoil stripping, if any.
2. General: Clear site of rubbish, debris and vegetation. Do not compact topsoil.
3. Treatment: Apply a suitable non-residual herbicide to areas to receive planting

#### 170 Removing small trees, shrubs, hedges and roots

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1. Identification: Clearly mark trees to be removed.
2. Small trees, shrubs and hedges: Cut down.
3. Roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
4. Safety: Comply with Forest Industry Safety Accord safety leaflets.

#### 180 Chipping and shredding

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1. General: Permitted, remove arisings from site

## 225 Handling topsoil

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1. Standard: To BS 3882.
2. Aggressive weeds
  - 2.1. Species: Notify the presence of species included in the Weeds Act, section 2, or the appropriate Wildlife and Countryside Act for the relevant jurisdiction.
  - 2.2. Give notice: Obtain instructions before moving topsoil.
3. Contamination: Do not mix topsoil with:
  - 3.1. Subsoil, stone, hardcore, rubbish or material from demolition work.
  - 3.2. Other soil or material containing aggressive weeds, sharps, plastics and non soil forming materials and notifiable animal or plant diseases.
  - 3.3. Oil, fuel, cement or other substances harmful to plant growth.
  - 3.4. Other classifications of topsoil.
4. Multiple handling: Keep to a minimum. Use topsoil immediately after stripping.

## 310 Unstable ground

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1. Generally: Ensure that the excavation remains stable at all times.
2. Give notice: Without delay if any newly excavated faces are too unstable to allow earthwork support to be inserted.
3. Take action: If instability is likely to affect adjacent structures or roadways, take appropriate emergency action.

## 330 Unrecorded features

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1. Give notice: If unrecorded foundations, beds, voids, basements, filling, tanks, pipes, cables, drains, manholes, watercourses, ditches, etc. not shown on the drawings are encountered.

## 350 Existing watercourses

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1. Diverted watercourses which are to be filled: Before filling, remove vegetable growths and soft deposits.

## 370 Underground structures in landscape areas

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1. Generally: Remove walls, roads, foundations, disused services, drains, manholes and the like to minimum depth.
2. Minimum depth below finished levels
  - 2.1. Grass, ground cover and perennial planting: 500 mm
  - 2.2. Shrub planting: 750 mm.
  - 2.3. Within 2 m of tree planting: 1000 mm.
3. Walls and slabs remaining: In every 10 m<sup>2</sup> of wall or slab, make a drainage hole at least 600 mm diameter.

## Disposal of materials

### 420 Topsoil storage heaps

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1. Location: To be agreed with BWL
2. Standard: To BS 3882.
3. Height (maximum): 1m
4. Protection
  - 4.1. Do not place any other material on top of storage heaps.
  - 4.2. Do not allow construction plant to pass over storage heaps.

- 4.3. Prevent compaction and contamination.

#### **454 Ground water level, springs or running water**

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1. Give notice: If it is considered that the excavations are below the water table.
2. Springs/ Running water: Give notice immediately if encountered.

#### **Filling**

#### **510 Hazardous, aggressive or unstable materials**

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1. General: Do not use fill materials which would, either in themselves or in combination with other materials or ground water, give rise to a health hazard, damage to building structures or instability in the filling, including material that is:
  - 1.1. Frozen or containing ice.
  - 1.2. Organic.
  - 1.3. Contaminated or noxious.
  - 1.4. Susceptible to spontaneous combustion.
  - 1.5. Likely to erode or decay and cause voids.
  - 1.6. With excessive moisture content, slurry, mud or from marshes or bogs.
  - 1.7. Clay of liquid limit exceeding 80 and/or plasticity index exceeding 55.
  - 1.8. Unacceptable, class U2 as defined in the 'Specification for highway works', clause 601.

#### **Bioremediation - Not Used**

#### **'specification for highway works: earthworks specification' appendices - Not Used**

Ω End of Section

## D41

# Crib walls, gabions and other gravity retaining walls

To be read with preliminaries/ general conditions.

### 210A W-3: Gabion Wall

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1. Design intent specification, fabricator to provide fabrication drawings prior to manufacture/installation. Allow for developing fixing details and coordination with engineers to agree loadings.
2. Manufacturer: Enviromesh (Or similar)  
A: Unit 4, Cartwright Ind Est, Spring Garden Road, Longton, Staffordshire, ST3 2TE  
T: 01782 692310  
E: [enquiries@enviro-mesh.com](mailto:enquiries@enviro-mesh.com)
  - 2.1. Product reference: GABION ENV444
3. Configuration: Bi-Axial Welded Mesh
  - 3.1. Sizes: To suit site conditions
  - 3.2. Mesh: Bi-Axial Welded Mesh 4mm dia wire, for the base, front, rear, end, diaphragm panels and lid, all within the tolerances specified in BS EN 10218-2:2012 and shall have a tensile strength that falls within a range of 540-770 N/mm<sup>2</sup>.

The mesh fabric shall be formed by electrically welding at each and every intersection, hard drawn steel line and cross wires into a dimensionally stable bi-axial square metric mesh of size 75mm x 75mm.
  - 3.3. Diaphragm: To manufacturers requirements
  - 3.4. Special requirements: Helical Binders on all visible corners and faces.  
Lacing Wire or Corner Ties to support the mesh, to specialists requirements.  
All fixings orientated to remove any sharp edges on front face.
4. Fill to units
  - 4.1. Material: Well-graded crushed angular limestone
  - 4.2. Supplier: CED Stone Ltd (or similar)  
A: 728 London Road, West Thurrock, Essex, RM20 3LU  
T: 01708 867 237  
E: [sales@cedstone.co.uk](mailto:sales@cedstone.co.uk)
    - 4.2.1. Product: Limestone Gabion Fill: 13-1998-426
  - 4.3. Size/ grading: Class 6G grading, 100-200mm dia
5. Substrate: Base or foundation to specialist / engineers specification.
6. Batter of wall face: Angled batter to specialist requirements.
7. Geotextile: To rear of wall to prevent soil mixing with fill.
8. Other requirements: Gabions to be fair faced, hand placed fill to exposed face to ensure a neat finish.

### 240 Geotextile

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1. Manufacturer: Flexible Lining Products  
A: Flexible Lining Products, Rabbit Hill Business Park, Great North Road, Arkendale, HG5 0FF  
E: [sales@flexibleliningproducts.co.uk](mailto:sales@flexibleliningproducts.co.uk)  
T: 01423 369729
  - 1.1. Product reference: Terram 1000 Geotextile Fabric
2. Permeability: 75 L/m<sup>2</sup>/s
3. Recycled content: n/a
4. Jointing

4.1. End and side laps: Minimum 300 mm

## 250 Assembling and installing

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1. *Design intent specification, fabricator to provide fabrication drawings prior to manufacture/installation. Allow for developing fixing details and coordination with engineers to agree loading's.*
2. Description: Gabions
3. Fixings:
  - Lacing wire
  - Corner Ties
  - Helical Binders on all visible corners and faces.To specialists requirements. All fixings orientated to remove any sharp edges on front face.
  - 3.1. Individual ties of lacing wire: Do not use.
4. Assembly
  - 4.1. Starting from top corner join edges of adjacent panels together in a continuous operation.
  - 4.2. Join to adjacent units, above, below and on all sides.
  - 4.3. **Internal bracing:** Provide horizontal bracing wires, centres to be determined by the specialist to suit conditions and agreed with the engineers.
5. Installation
  - 5.1. **Vertical joints:** Staggered in adjacent courses.
  - 5.2. **Stepped constructions:** Align bottom edge wire of upper baskets with a longitudinal wire of mesh of lower baskets. Provide continuous lacing along all horizontal joints at front and rear of wall.
6. Filling
  - 6.1. Maintain shape of basket during filling.
  - 6.2. Fill to full height in sequence recommended by manufacturer.
  - 6.3. **Top mesh:** To bear upon fill.
  - 6.4. **Lid:** Fix securely.
7. **Backfill:** Place and compact at each course as work proceeds.

Ω End of Section

# E10

## Mixing/casting/curing in situ concrete

### Concrete

#### 101 Specification

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1. Concrete generally: To BS 8500-2.
2. Exchange of information: Provide concrete producer with information required by BS 8500-1, clauses 4 and 5.

#### 105-A Concrete Canal Tow Path

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1. Description: Finishes only - refer to engineers specification for details of concrete specification.
2. Designation: To engineers specification
3. Fibres: To engineers specification
4. Aggregates
  - 4.1. Size (maximum): To engineers specification
  - 4.2. Coarse recycled aggregates: -
  - 4.3. Additional aggregate requirements: -
5. Special requirements for cement/ combinations: To engineers specification
6. Consistence class: To engineers specification
7. Chloride class: To engineers specification
8. Admixtures: To engineers specification
9. Additional mix requirements: To engineers specification

### Materials, batching and mixing

#### 215 Ready-mixed concrete

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1. Production plant: Currently certified by a body accredited by UKAS to BS EN ISO/IEC 17065 for product conformity certification of ready-mixed concrete .
2. Source of ready-mixed concrete: Obtain from one source if possible . Otherwise, submit proposals .
  - 2.1. Name and address of depot: Submit before any concrete is delivered .
  - 2.2. Delivery notes: Retain for inspection .
3. Declarations of nonconformity from concrete producer: Notify immediately .

#### 221 Information about proposed concretes

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1. Submit when requested
  - 1.1. Details listed in BS 8500-1, clause 5.2.
  - 1.2. Additional information: Data concerning the anticipated rate of strength gain

#### 225 Changes to specification

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1. Changes to specification of fresh concrete (outside concrete producer's responsibility): Submit proposals

#### 230 Interruption of supply during concreting

---

1. Elements without joints: Where elements are detailed to be cast in a single pour without joints, make prior arrangements for a back-up supply of concrete.

2. Elsewhere
  - 2.1. Preparation: Manage pour to have a full face, and have materials available to form an emergency construction joint while concrete can still be worked.
  - 2.2. Before pour is completed: Submit location and details of joint, make proposals for joint preparation.

## Project testing/ certification - Not Used

## Placing/ compacting/ curing and protecting

### 640 Construction joints

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1. Location of joints: Pours to be continuous between movement joints
2. Preparation of joint surfaces: Remove surface laitance and expose aggregate by lightly brushing and spraying. Joint surface to be clean and damp immediately before placing fresh concrete

### 648 Adverse temperature conditions

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1. Requirement: Submit proposals for protecting concrete when predicted ambient temperatures indicate risk of concrete freezing or overheating.

### 650 Surfaces to receive concrete

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1. Cleanliness of surfaces immediately before placing concrete: Clean with no debris, tying wire clippings, fastenings or free water .

### 660 Inspection of surfaces

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1. Notice: Give notice to allow inspections of reinforcement and surfaces before each pour of concrete.
  - 1.1. Period of notice: Obtain instructions.
2. Timing of inspections: When reinforcement and formwork are ready for concreting

### 670 Transporting

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1. General: Avoid contamination, segregation, loss of ingredients, excessive evaporation and loss of workability . Protect from heavy rain .
2. Entrained air: Anticipate effects of transport and placing methods in order to achieve specified air content .

### 680 Placing

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1. Records: Maintain for time, date and location of all pours.
2. Timing: Place as soon as practicable after mixing and while sufficiently plastic for full compaction.
3. Temperature limitations for concrete: 30°C (maximum) and 5°C (minimum), unless otherwise specified. Do not place against frozen or frost covered surfaces.
4. Continuity of pours: Place in final position in one continuous operation up to construction joints. Avoid formation of cold joints.
5. Discharging concrete: Prevent uneven dispersal, segregation or loss of ingredients or any adverse effect on the formwork or formed finishes.
6. Thickness of layers: To suit methods of compaction and achieve efficient amalgamation during compaction.
7. Poker vibrators: Do not use to make concrete flow horizontally into position, except where necessary to achieve full compaction under void formers and cast-in accessories and at vertical joints.

## 690 Compacting

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1. **General:** Fully compact concrete to full depth to remove entrapped air. Continue until air bubbles cease to appear on the top surface.
  - 1.1. **Areas for particular attention:** Around reinforcement, under void formers, cast-in accessories, into corners of formwork and at joints.
2. **Consecutive batches of concrete:** Amalgamate without damaging adjacent partly hardened concrete.
3. **Methods of compaction:** To suit consistence class and use of concrete.

## 810 Curing generally

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1. **Requirement:** Keep surface layers of concrete moist throughout curing period, including perimeters and abutments, by either restricting evaporation or continuously wetting surfaces of concrete.
  - 1.1. **Surfaces covered by formwork:** Retain formwork in position and, where necessary to satisfy curing period, cover surfaces immediately after striking.
  - 1.2. **Top surfaces:** Cover immediately after placing and compacting. If covering is removed for finishing operations, replace it immediately afterwards.
2. **Surface temperature:** Maintain above 5°C throughout the specified curing period or four days, whichever is longer.
3. **Records:** Maintain details of location and timing of casting of individual batches, removal of formwork and removal of coverings. Keep records on site, available for inspection.

## 840 Protection

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1. **Prevent damage to concrete, including**
  - 1.1. **Surfaces generally:** From rain, indentation and other physical damage .
  - 1.2. **Surfaces to exposed visual concrete:** From dirt, staining, rust marks and other disfiguration .
  - 1.3. **Immature concrete:** From thermal shock, physical shock, overloading, movement and vibration .
  - 1.4. **In cold weather:** From entrapment and freezing expansion of water in pockets, etc .

Ω End of Section

## E20

# Formwork for in situ concrete

### Generally/ preparation

#### 110 Loadings

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1. Requirement: Design and construct formwork to withstand the worst combination of the following:
  - 1.1. Total weight of formwork, reinforcement and concrete.
  - 1.2. Construction loads including dynamic effects of placing, compacting and construction traffic.
  - 1.3. Wind and snow loads.

#### 120 Formwork details

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1. Provide the following:
  - Construction joints - positions and types
  - Panel joints - layout where exposed to view
  - Sealing methods - at panel joints, form tie holes and construction
  - Surface of forms, form liners and other means of obtaining specified finish
  - Tie holes - layout where exposed to view

#### 132 Propping

---

1. General: Prevent deflection and damage to the structure. Carry down props to bearings strong enough to provide adequate support throughout concreting operations.
2. Method statement: Submit proposals for prop bearings and sequence of propping/ repropping and backpropping.
  - 2.1. Timing of submission: To be agreed between the permanent works designer and the temporary works coordinator

#### 160 Cambers

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1. Application of specified upward cambers: To the concrete immediately before formwork is struck.
  - 1.1. Formwork: Allow for deflection under weight of fresh concrete.
  - 1.2. Top surfaces of concrete: Camber to maintain the required structural depths and profiles.
2. Checks after striking of formwork and removal of props: Levels to determine extent of any residual camber. Submit results.

#### 170 Work below ground

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1. Description: - RETAINING WALLS - FOUNDATIONS
2. Casting vertical faces against faces of excavation: Permitted below ground, provided face of excavation is stable
  - 2.1. Requirements: Prevent contamination of concrete by loose soil. Submit proposals for maintaining stability of excavated faces and preventing contamination of concrete by loose soil

### Construction

#### 310 Accuracy

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1. General requirement for formwork: Accurately and robustly constructed to produce finished concrete in the required positions and to the required dimensions.
2. Formed surfaces: Free from twist and bow (other than any required cambers).

3. Intersections, lines and angles: Square, plumb and true.

### **320 Joints in forms**

---

1. Requirements including joints in form linings and between forms and completed work
  - 1.1. Prevent loss of grout, using seals where necessary.
  - 1.2. Prevent formation of steps. Secure formwork tight against adjacent concrete.

### **330 Inserts, holes and chases**

---

1. Positions and details
  - 1.1. Dimensioned on drawings provided on behalf of the Employer: Do not change without consent.
  - 1.2. Undimensioned or from other sources: Submit proposals.
2. Positioning relative to reinforcement: Give notice of any conflicts well in advance of placing concrete.
3. Method of forming: Fix inserts or box out as required. Do not cut hardened concrete without approval.

### **350 Form ties**

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1. Metal associated with form ties/ devices: Prohibited within cover to reinforcement. Compatible with reinforcement metal.

### **380 Void formers**

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1. Manufacturer: To engineers specification
  - 1.1. Product reference: -

### **470 Release agents**

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1. Use: All formwork
2. General: Achieve a clean release of forms without disfiguring the concrete surface.
3. Product types: Compatible with formwork materials, specified formed finishes and subsequent applied finishes. Use the same product throughout the entire area of any one finish.
4. Protection: Prevent contact with reinforcement, hardened concrete, other materials not part of the form face, and permanent forms.

### **480 Surface retarders**

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1. Use: Obtain approval.
2. Reinforcement: Prevent contact with retarder.

## **Striking**

### **510 Striking formwork**

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1. Timing: Prevent any disturbance, damage or overloading of the permanent structure.

## **Formed finishes**

### **605 Control samples (part of the finished work)**

---

1. Quality of finish: Special finish E20/630
2. Location: Obtain instructions.
3. Area (minimum): 1m length
4. Features to be included: Seating steps and Steps

5. Approval of appearance: Obtain before proceeding with remainder of the work.

### **630 Special finish**

---

1. Location: Fair-faced surfaces for steps and seating units
2. Finish: Smooth and even. Formwork panels as large as practicable. Arrange in a regular pattern as a feature of the surface.
  - 2.1. Special requirements: None
3. Permissible deviation of surfaces
  - 3.1. Sudden irregularities (maximum): 3 mm.
  - 3.2. Gradual irregularities (maximum): 3 mm when measured from the underside of a 1 m straightedge, placed anywhere on surface.
4. Variations in colour
  - 4.1. Permitted: Those caused by impermeable formwork linings.
  - 4.2. Not permitted: Those caused by contamination, grout leakage and replacement of formwork panels.
5. Cover spacers: Submit proposals
6. Surface blemishes
  - 6.1. Permitted: Blowholes less than 4 mm in diameter and at an agreed frequency.
  - 6.2. Not permitted: Voids, honeycombing, segregation and other defects.
7. Formwork tie holes: In a regular pattern and filled with matching mortar

### **750 Arrises, margins and junctions**

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1. Requirements: As drawings

Ω End of Section

# F10

## Brick/ block walling

### Types of walling

#### 110 Clay facing brickwork

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1. Description: To match the building brickwork. Check final specification with Client team prior to ordering.
2. Bricks: To BS EN 771-1.
  - 2.1. Manufacturer: Wienerberger Ltd  
a: Wienerberger House, Brooks Drive, Cheadle Royal Business Park, Cheadle, Cheshire, SK8 3SA.  
t: 0161 4918200
    - 2.1.1. Product reference: Capelwick Multi
  - 2.2. Recycled content: Not applicable
  - 2.3. Special shapes: Brick on edge coping.  
Double stop end BD.4.3
3. Mortar: As section Z21.
  - 3.1. Standard: To BS EN 998-2
  - 3.2. Mix: 1:5 masonry cement:sand
  - 3.3. Additional requirements: Mortar to match the building
4. Bond:
  - Wall: Half-lap stretcher
  - Coping: Brick on edge header (2nr bricks to cover width of wall).
5. Joints: To match building
6. Features: Brick coping, as detailed

#### 385 Engineering brickwork - Below ground

---

1. Description: To wall type 7 below ground
2. Bricks: To BS EN 771-1.
  - 2.1. Manufacturer: Ketley Brick Company Ltd.  
A: Dreadnought Works, Dreadnought Road, Pensnett, Brierley Hill, West Midlands DY5 4TH.  
T: 01384 78361  
E: sales@ketley-brick.co.uk
    - 2.1.1. Product reference: STAFFORDSHIRE RED 'Class A' Engineering bricks.
  - 2.2. Mean compressive strength: Greater than or equal to 125 N/mm<sup>2</sup>
    - 2.2.1. Category: II
  - 2.3. Water absorption: Equal to or less than 4.5%
  - 2.4. Freeze/ thaw category: F2.
  - 2.5. Active soluble salts content category: S2.
  - 2.6. Additional requirements: None
3. Mortar: As section Z21.
  - 3.1. Standard: To BS EN 998-2
  - 3.2. Mix: 1:3 cement:sand
  - 3.3. Additional requirements: None
4. Bond: Half-lap stretcher

5. Joints: Flush.

## Testing - Not Used

### Workmanship generally

#### 430 Conditioning of clay bricks and blocks

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1. Bricks and blocks delivered warm from manufacturing process: Do not use until cold.
2. Absorbent bricks in warm weather: Wet to reduce suction. Do not soak.

#### 460 Mortar designations

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1. Mix proportions: For a specified designation select a mix from the following:
  - 1.1. Designation (i) (BS EN 998-2 M12 equivalent)
    - 1.1.1. 1:0-¼:3 (Portland cement:lime:sand with or without air entraining additive).
    - 1.1.2. 1:3 (Portland cement:sand and air entraining additive).
  - 1.2. Designation (ii) (BS EN 998-2 class M6 equivalent)
    - 1.2.1. 1:½:4-5 (Portland cement:lime:sand with or without air entraining additive).
    - 1.2.2. 1:3 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
    - 1.2.3. 1:2½-3½ (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
    - 1.2.4. 1:3-4 (Portland cement:sand and air entraining additive).
  - 1.3. Designation (iii) (BS EN 998-2 class M4 equivalent)
    - 1.3.1. 1:1:5-6 (Portland cement:lime:sand with or without air entraining additive).
    - 1.3.2. 1:3½-4 (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
    - 1.3.3. 1:4-5 (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
    - 1.3.4. 1:5-6 (Portland cement:sand and air entraining additive).
  - 1.4. Designation (iv) (BS EN 998-2 class M2 equivalent)
    - 1.4.1. 1:2:8-9 (Portland cement:lime:sand with or without air entraining additive).
    - 1.4.2. 1:4½ (masonry cement:sand containing Portland cement and lime in approximate ratio 1:1, and an air entraining additive).
    - 1.4.3. 1:5½-6½ (masonry cement:sand containing Portland cement and inorganic materials other than lime and air entraining additive).
    - 1.4.4. 1:7-8 (Portland cement:sand and air entraining additive).
2. Batching: Mix proportions by volume.
3. Mortar type: Continuous throughout any one type of masonry work.

#### 500 Laying generally

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1. Mortar joints: Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.
2. AAC block thin mortar adhesive and gypsum block adhesive joints: Fill vertical joints. Lay blocks on a full bed.
3. Clay block joints
  - 3.1. Thin-layer mortar: Lay blocks on a full bed.
  - 3.2. Interlocking perpend: Butted.
4. Bond where not specified: Half-lap stretcher.
5. Vertical joints in brick and concrete block facework: Even widths. Plumb at every fifth cross joint.

## **520 Accuracy**

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1. Courses: Level and true to line.
2. Faces, angles and features: Plumb.
3. Permissible deviations
  - 3.1. Position in plan of any point in relation to the specified building reference line and/ or point at the same level:  $\pm 10$  mm.
  - 3.2. Straightness in any 5 m length:  $\pm 5$  mm.
  - 3.3. Verticality up to 3 m height:  $\pm 10$  mm.
  - 3.4. Verticality up to 7 m height:  $\pm 14$  mm.
  - 3.5. Overall thickness of walls:  $\pm 10$  mm.
  - 3.6. Level of bed joints up to 5 m (brick masonry):  $\pm 11$  mm.
  - 3.7. Level of bed joints up to 5 m (block masonry):  $\pm 13$  mm.

## **545 Levelling of separate leaves**

---

1. Locations for equal levelling of cavity wall leaves: As follows:
  - 1.1. Every course containing vertical twist type ties or other rigid ties.
  - 1.2. Every third tie course for double triangle/ butterfly ties.
  - 1.3. Courses in which lintels are to be bedded.

## **560 Coursing brickwork**

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1. Gauge: Four brick courses including bed joints to 300 mm.

## **561 Coursing brickwork with existing**

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1. Gauge: Line up with existing brick courses.

## **580 Laying frogged bricks**

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1. Single frogged bricks: Frog uppermost.
2. Double frogged bricks: Larger frog uppermost.
3. Frog cavity: Fill with mortar.

## **635 Jointing**

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1. Profile: Consistent in appearance.

## **645 Accessible joints not exposed to view**

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1. Jointing: Struck flush as work proceeds.

## **665 Pointing**

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1. Description: Wally type 7
2. Joint preparation: Remove debris. Dampen surface.
3. Mortar: As section Z21.
  - 3.1. Standard: To BS EN 998-2
  - 3.2. Mix: 1:5 masonry cement:sand
  - 3.3. Additional requirements: Mortar to match building
4. Profile: To match building

## 690 Adverse weather

---

1. General: Do not use frozen materials or lay on frozen surfaces.
2. Air temperature requirements: Do not lay bricks/ blocks:
  - 2.1. In cement-gauged mortars when at or below 3°C and falling or unless it is at least 1°C and rising.
  - 2.2. In hydraulic lime:sand mortars when at or below 5°C and falling or below 3°C and rising, or as manufacturer's/ supplier's recommendations.
  - 2.3. In thin-layer mortars when outside the limits set by the mortar manufacturer.
3. Temperature of walling during curing: Above freezing until hardened.
4. Newly erected walling: Protect at all times from:
  - 4.1. Rain and snow.
  - 4.2. Drying out too rapidly in hot conditions and in drying winds.

## Additional requirements for facework

### 710 The term facework

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1. Definition: Applicable in this specification to brick/ block walling finished fair.
  - 1.1. Painted facework: The only requirement to be waived is that relating to colour.

### 750 Colour consistency of masonry units

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1. Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries.
2. Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.
3. Facing bricks should be blended on site from a minimum of three packs to ensure an even distribution of colour and texture variation.
4. Finished work: Free from patches, horizontal stripes and racking back marks.

### 760 Appearance

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1. Brick/ block selection: Do not use units with damaged faces or arrises.
2. Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
3. Quality control: Lay masonry units to match relevant reference panels.
  - 3.1. Setting out: To produce satisfactory junctions and joints with built-in features and components.
  - 3.2. Coursing: Evenly spaced using gauge rods.
4. Lifts: Complete in one operation.
5. Methods of protecting facework: Submit proposals.

### 780 Ground level

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1. Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.

### 830 Cleanliness

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1. Facework: Keep clean.
2. Mortar on facework: Allow to dry before removing with stiff bristled brush.
3. Removal of marks and stains: Rubbing not permitted.

Ω End of Section



## L37

# External stair, ramps, handrail and balustrades systems

## General

### 110A P-11: Cast In situ Concrete Steps

---

1. Description: To coffee park & Canal Square
2. Type: Built in situ
3. Base/ Fabric: Reinforced concrete, as section E10 and E30
4. Surface: Concrete surface
  - 4.1. Finish: Smooth floated
5. Unobstructed width: As drawings
6. Accessories:
  - 'Corduroy' hazard warning surface as section Q25
  - Handrail system L37/150A
  - Carborundum black colour inlay in tread and riser of step to demarcate step.

### 110B P-11A: Cast In situ Concrete Seating Steps

---

1. Description: To canal square
2. Type: Built in situ
3. Base/ Fabric: Reinforced concrete, as section E10 and E30
4. Surface: Concrete surface
  - 4.1. Finish: Smooth floated
5. Unobstructed width: As drawing
6. Accessories: None

### 110C P-12: Pre-cast Concrete Steps

---

1. Design intent specification, manufacturer to provide shop drawings for review prior to fabrication.
2. Description: Podium steps
3. Type: Fabricated off-site
4. Manufacturer: Bespoke Concrete Products  
A: Tynedale Works, Princess Way, Low Prudhoe, Northumberland NE42 6PL  
T: 01661 839340
  - 4.1. Product: Buff concrete step units
5. Surface: Buff Concrete
  - 5.1. Finish: Buff concrete, light acid etch finish
  - 5.2. Samples: Submit samples of proposed finishes for approval prior to fabrication.
6. Unobstructed width: Varies refer to drawings
  - 6.1. Dimensions: 900mm wide units (except where shown on the drawings)  
Bespoke unit for angled steps.
  - 6.2. Riser height : 190mm
7. Additional requirements: 20mm bullnosed edge to front face of steps  
Flat edges to allow units to be close butted.
8. Fitting: Close butted in a stacked bond as drawing.

## **112A W-1: Pre-cast wall to private terraces**

---

1. Design intent specification, manufacturer to provide shop drawings for review prior to fabrication.
2. Description: Podium terrace walls
3. Type: Fabricated off-site
4. Manufacturer: Bespoke Concrete Products  
A: Tynedale Works, Princess Way, Low Prudhoe, Northumberland NE42 6PL  
T: 01661 839340
  - 4.1. Product:: Buff concrete wall
5. Surface: Buff Concrete
  - 5.1. Finish: Buff concrete, light acid etch finish
  - 5.2. Samples: Submit samples of proposed finishes for approval prior to fabrication.
6. Dimension : L Shaped unit with foundation offset below soil.  
250mm wide, 740mm tall. 900mm long (except were shown on the drawings).  
300mm wide foundation width.
  - 6.1. Special units: Corner units 300mm x 300mm
    - 90 degree angles
    - Various angles as drawings
7. Additional requirements:: 10mm Chamfer to all edges (inc joints between units)
8. Fitting:: Close butted as drawing.

## **112B W-2: Pre-cast wall to steps and ramps**

---

1. Design intent specification, manufacturer to provide shop drawings for review prior to fabrication.
2. Description: Podium ramp and step walls
3. Type: Fabricated off-site
4. Manufacturer: Bespoke Concrete Products  
A: Tynedale Works, Princess Way, Low Prudhoe, Northumberland NE42 6PL  
T: 01661 839340
  - 4.1. Product:: Buff concrete wall
5. Surface: Buff Concrete
  - 5.1. Finish: Buff concrete, light acid etch finish
  - 5.2. Samples: Submit samples of proposed finishes for approval prior to fabrication.
6. Dimension : L Shaped unit with foundation offset below soil.  
250mm wide, 635mm tall. 900mm long (except were shown on the drawings).  
300mm wide foundation width.
  - 6.1. Special units:
    - Various angles as drawings
    - Oversized seat units at end of ramps as shown on drawings.
7. Additional requirements:: 10mm Chamfer to all edges (inc joints between units)
8. Fitting:: Close butted as drawing.

## **150A F-10: Single Handrail**

---

1. Description: Site Wide Steps
2. System manufacturer: ASD Lighting  
A: Mangham Road, Barbot Hall Industrial Estate, Rotherham, S61 4RJ,  
T: 01709 374898  
E: sales@asdlighting.com
3. Product: ViperRAIL LED
4. Material: 316 Austenitic stainless steel

- 4.1. Cross section: 48mm dia rail
- 4.2. Finish: Not required
5. Height (to upper surface of handrail)
  - 5.1. Above pitch line: 900-1000mm (Refer to details)
  - 5.2. Above landing: 900-1100 mm (Refer to details)
6. Accessories:
  - Integral IP65 LED lighting
  - Ends of rail to rotate 90 degrees to prevent clothing catch.
  - Cover plate to hide fixing at base.
  - Post to taper below handrail to manufacturers standard.
7. Fixing: Core drilled into concrete steps.

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### **150B                    F-10A: Double sided offset handrail**

---

1. Description: Canal Steps
2. System manufacturer: ASD Lighting  
A: Mangham Road, Barbot Hall Industrial Estate, Rotherham, S61 4RJ,  
T: 01709 374898  
E: sales@asdlighting.com
3. Product: ViperRAIL LED
4. Material: 316 Austenitic stainless steel
  - 4.1. Cross section: 48mm dia rail
  - 4.2. Finish: Not required
5. Height (to upper surface of handrail)
  - 5.1. Above pitch line: 900-1000mm (Refer to details)
  - 5.2. Above landing: 900-1100 mm (Refer to details)
6. Accessories:
  - Integral IP65 LED lighting
  - Double handrail offset from central post
  - Ends of rail to form closed loop.
  - Cover plate to hide fixing at base.
  - Post to taper below handrail to manufacturers standard.
7. Fixing: Core drilled into concrete steps.

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### **150C                    F-10B: Single sided offset handrail**

---

1. Description: Canal Steps
2. System manufacturer: ASD Lighting  
A: Mangham Road, Barbot Hall Industrial Estate, Rotherham, S61 4RJ,  
T: 01709 374898  
E: sales@asdlighting.com
3. Product: ViperRAIL LED
4. Material: 316 Austenitic stainless steel
  - 4.1. Cross section: 48mm dia rail
  - 4.2. Finish: Not required
5. Height (to upper surface of handrail)
  - 5.1. Above pitch line:  
  
900-1000mm (Refer to details)
  - 5.2. Above landing: 900-1100 mm (Refer to details)

6. Accessories:
  - Integral IP65 LED lighting
  - Single handrail offset from central post to match double rail.
  - Ends of rail to return to meet wall.
  - Cover plate to hide fixing at base.
  - Post to taper below handrail to manufacturers standard.
7. Fixing: Core drilled into concrete steps.

## **160A                      B-2 Metal Railing to Cannal**

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1. Description: Fall protection balustrade to higher section of canal tow path
2. System manufacturer: Broxap Ltd.  
A: Head Office. Rowhurst Industrial Estate, Chesterton, Newcastle-under-Lyme, Staffordshire, ST5 6BD  
T: 01782 564411
  - 2.1. Product: Bridgewater Ductile Iron 2 Rail  
(To match rails installed on the Segro site, specification to be confirmed prior to fabrication).
3. Guarding
  - 3.1. Material: Ductile Iron Post (110mm dia.)
  - 3.2. Finish: Manufacturers waterside paint specification.  
(Coverage with a zinc rich primer along with a micaceous undercoat and several acrylic topcoats providing a total coverage of approximately 250 microns).
4. Rail
  - 4.1. Cross section: 2nr: 48.3mm diameter rails
  - 4.2. Material: Ductile Iron
  - 4.3. Finish: Manufacturers waterside paint specification.  
(Coverage with a zinc rich primer along with a micaceous undercoat and several acrylic topcoats providing a total coverage of approximately 250 microns).
5. Height (to upper surface of rail)
  - 5.1. Above pitch line: 1150mm
  - 5.2. Above landing: 1150mm
6. Accessories: Secondary rail, 640 mm above pitch line
7. Fixing: Base plate fixed to concrete surface.
  - 7.1. Posts to be installed to follow the slope of the ramp. Rails to be bent at changes in direction of gradient.

## **System performance**

### **220 Design**

---

1. Description: All metalwork
2. Inclusive design: Complete detailed design in accordance with Building Regulations (Eng) Approved Document M, volume 2
3. Structure and associated features: Complete the design to meet structural and safety requirements of BS 6180 and in accordance with BS 8300-2
4. Structural performance criteria
  - 4.1. Horizontal uniformly distributed line loads on balustrade or handrail (maximum): 3.0 kN/m
5. Other performance criteria: n/a
6. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

## 221 Design

---

1. Description: All concrete structures
2. Inclusive design: n/a
3. Structure and associated features: Complete the design to meet structural and safety requirements of BS 6180 and in accordance with BS 8300-2
4. Other performance criteria: n/a
5. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

## Products - Not Used

### Fabrication

#### 510 Fabrication generally

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1. Design: Complete the detailed design and obtain approval prior to commencing fabrication.
2. Shop drawings: Submit.
3. Structural calculations: Submit.
4. Frameworks: Assemble and brace, including temporary members required for installation.
5. Contact between dissimilar metals: Avoid.
6. Fixings: Fully bolt together. Tighten bolts.
7. Temporary support: Do not subject members to non-design loadings.

### Execution

#### 610 Loading

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1. Site activities: Restrict, to ensure that design loads are not exceeded, or submit proposals for temporary supports.

#### 620 Concrete foundations generally

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1. Standard: To BS 8500-2.
2. Concrete: Designated not less than GEN 1 or standard prescribed not less than ST2.
3. Admixtures: Do not use.
4. Foundation holes: Neat vertical sides.
5. Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

#### 650 Installation generally

---

1. Fasteners: To section Z20.
2. Structural members: Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
3. Temporary support: Do not use finished work as temporary support or strutting for other work.
4. Applied finishes: Substrates to be even, dry, sound and free from contaminants. Make good substrate surfaces and prepare/ prime as finish manufacturer's recommendation before application.

#### 662 Adverse weather

---

1. General: Do not use frozen materials and do not lay on frozen surfaces.
2. Working limits: Do not lay blocks/ dressings:

- 2.1. Cement gauged mortars: When the air temperature is at or below 3°C and falling or below 1°C and rising (unless mortar has a temperature of not less than 4°C when laid and work is thoroughly protected).
- 2.2. Hydraulic lime:sand mortars: When the air temperature is at or below 5°C and falling or below 3°C and rising.
3. Temperature of the work: Maintain above freezing until mortar has fully set.
4. Newly erected work: Protect from precipitation; Prevent rapid drying in hot conditions.
5. Remedial work: Rake out and replace mortar damaged by frost.
  - 5.1. Damaged work: Rebuild.

## 670 Installation of tread inserts/ nosings

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1. Treads: Fully cured, sound and level.
2. Fixing
  - 2.1. Location/ position: In accordance with BS 8300-1
  - 2.2. Fixings: Epoxy adhesive and stainless steel screws
    - 2.2.1. Centres: As manufacturer's recommendations

## 680 Site painting and staining

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1. Timing: Prepare surfaces and apply finishes as soon as possible after installing components.

## Completion

## 920 Documentation

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1. Contents
  - 1.1. Copies of structural design calculations/ test reports.
2. General product information.
  - 2.1. Installation information.
  - 2.2. Inspection and maintenance reports.
3. Number of copies: 2
4. Submission: Two weeks prior to date when principal contractor expects work to be practically complete

Ω End of Section

## Q10

# Kerbs/ edgings/ channels/ paving accessories

## Types of kerbs/edgings and channels

### 110A E-1 & E1A Concrete kerb (150mm wide)

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1. Manufacturer: [Marshalls plc](#)
  - 1.1. Contact details
    - 1.1.1. Address: Landscape House  
Lowfields Business Park  
Elland  
West Yorkshire  
HX5 9HT
    - 1.1.2. Telephone: [+44 \(0\)330 0574472](tel:+44(0)3300574472)
    - 1.1.3. Web: [www.marshalls.co.uk](http://www.marshalls.co.uk)
    - 1.1.4. Email: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
  - 1.2. Product reference: [Half Battered Kerb](#)
2. Standard: To BS EN 1340:2003.
3. Physical properties
  - 3.1. Colour: Natural grey.
  - 3.2. Finish: Textured.
  - 3.3. Profile
    - 3.3.1. Designation: Half battered kerb.
  - 3.4. Dimensions: 150 x 305 mm (HB2).
  - 3.5. Radial units
    - 3.5.1. Radial face: n/a
    - 3.5.2. Radius: n/a
  - 3.6. Weathering resistance:  $\leq 1.0 \text{ kg/m}^2$  as a mean with no individual value  $> 1.5 \text{ kg/m}^2$  (freeze thaw durability).
  - 3.7. Abrasion resistance:  $\leq 23 \text{ mm}$  (Wide Wheel Abrasion Test).
  - 3.8. Bending strength: Characteristic bending strength of 3.5 MPa with no individual result less than 2.8 MPa.
  - 3.9. Unpolished Slip Resistance Value (USRV) (minimum):  $> 45$ .
4. Special shapes:
  - Dropper kerbs DL1 and DR1 to footway crossings
  - Internal angle HBIA
  - External angle HBXA

### 110B E-2 Concrete kerb (125mm wide)

---

1. Manufacturer: [Marshalls plc](#)
  - 1.1. Contact details
    - 1.1.1. Address: Landscape House  
Lowfields Business Park  
Elland  
West Yorkshire  
HX5 9HT
    - 1.1.2. Telephone: [+44 \(0\)330 0574472](tel:+44(0)3300574472)

- 1.1.3. Web: [www.marshalls.co.uk](http://www.marshalls.co.uk)
- 1.1.4. Email: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
- 1.2. Product reference: [Half Battered Kerb](#)
2. Standard: To BS EN 1340:2003.
3. Physical properties
  - 3.1. Colour: Natural grey.
  - 3.2. Finish: Textured.
  - 3.3. Profile
    - 3.3.1. Designation: Half battered kerb.
  - 3.4. Dimensions: 125 x 255 mm (HB2).
  - 3.5. Radial units
    - 3.5.1. Radial face: Radius, convex (external).  
Radius, concave (internal).
    - 3.5.2. Radius: Refer to layout drawings
  - 3.6. Weathering resistance:  $\leq 1.0 \text{ kg/m}^2$  as a mean with no individual value  $> 1.5 \text{ kg/m}^2$  (freeze thaw durability).
  - 3.7. Abrasion resistance:  $\leq 23 \text{ mm}$  (Wide Wheel Abrasion Test).
  - 3.8. Bending strength: Characteristic bending strength of 3.5 MPa with no individual result less than 2.8 MPa.
  - 3.9. Unpolished Slip Resistance Value (USRV) (minimum):  $> 45$ .
4. Special shapes:
  - Dropper kerbs DL1 and DR1 to footway crossings
  - Internal angle HBIA
  - External angle HBXA
  - External radius kerbs as shown on drawings
  - Flush Kerb at footway crossing as Q10/110E

## **110C E-3 Concrete Conservation kerb**

---

1. Manufacturer: [Marshalls plc](#)
  - 1.1. Contact details
    - 1.1.1. Address: Landscape House  
Lowfields Business Park  
Elland  
West Yorkshire  
HX5 9HT
    - 1.1.2. Telephone: [+44 \(0\)330 0574472](tel:+44(0)3300574472)
    - 1.1.3. Web: [www.marshalls.co.uk](http://www.marshalls.co.uk)
    - 1.1.4. Email: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
  - 1.2. Product reference: [Conservation X Kerb](#)
2. Standard: To BS 7533-6:1999.
3. Physical properties
  - 3.1. Colour: Silver grey.
  - 3.2. Finish: Textured.
  - 3.3. Dimensions: 145 x 255 x 915 mm.
  - 3.4. Weathering resistance:  $\leq 1.0 \text{ kg/m}^2$  as a mean with no individual value  $> 1.5 \text{ kg/m}^2$  (freeze thaw durability).
  - 3.5. Abrasion resistance:  $\leq 23 \text{ mm}$  (Wide Wheel Abrasion Test).

- 3.6. Bending strength: Characteristic bending strength of 3.5 MPa with no individual result less than 2.8 MPa
- 3.7. Unpolished Slip Resistance Value (USRV) (minimum): >45.
- 4. Special shapes: n/a

## **110D E-6 Concrete Edging**

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- 1. Manufacturer: [Marshalls plc](#)
  - 1.1. Contact details
    - 1.1.1. Address: Landscape House  
Lowfields Business Park  
Elland  
West Yorkshire  
HX5 9HT
    - 1.1.2. Telephone: [+44 \(0\)330 0574472](tel:+44(0)3300574472)
    - 1.1.3. Web: [www.marshalls.co.uk](http://www.marshalls.co.uk)
    - 1.1.4. Email: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
  - 1.2. Product reference: [Standard Edging \(Flat Top Edging\)](#)
- 2. Standard: To BS EN 1340:2003.
- 3. Physical properties
  - 3.1. Finish: Textured.
  - 3.2. Profile
    - 3.2.1. Designation: EF.
  - 3.3. Dimensions: 50 x 150 x 914 mm.
  - 3.4. Weathering resistance:  $\leq 1.0 \text{ kg/m}^2$  as a mean with no individual value  $> 1.5 \text{ kg/m}^2$  (freeze thaw durability).
  - 3.5. Abrasion resistance:  $\leq 23 \text{ mm}$  (Wide Wheel Abrasion Test).
  - 3.6. Unpolished Slip Resistance Value (USRV) (minimum): >45.

## **110E E-7 Concrete kerb flush (125mm wide)**

---

- 1. Manufacturer: [Marshalls plc](#)
  - 1.1. Contact details
    - 1.1.1. Address: Landscape House  
Lowfields Business Park  
Elland  
West Yorkshire  
HX5 9HT
    - 1.1.2. Telephone: [+44 \(0\)330 0574472](tel:+44(0)3300574472)
    - 1.1.3. Web: [www.marshalls.co.uk](http://www.marshalls.co.uk)
    - 1.1.4. Email: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
  - 1.2. Product reference: [Bullnosed Kerb](#)
- 2. Standard: To BS EN 1340:2003.
- 3. Physical properties
  - 3.1. Colour: Natural grey.
  - 3.2. Finish: Textured.
  - 3.3. Profile
    - 3.3.1. Designation: Bullnosed kerb
  - 3.4. Dimensions: 125 x 150 x 915 mm.

- 3.5. Weathering resistance:  $\leq 1.0 \text{ kg/m}^2$  as a mean with no individual value  $> 1.5 \text{ kg/m}^2$  (freeze thaw durability).
- 3.6. Bending strength: Characteristic bending strength of 3.5 MPa with no individual result less than 2.8 MPa.
- 3.7. Unpolished Slip Resistance Value (USRV) (minimum):  $> 45$ .
4. Laying: Square end laid upwards as engineers detail.
5. Special shapes: n/a

## **200A E-4 Aluminium Edging (Flush)**

---

1. Description: Flush metal edge to ground floor and podium
2. Manufacturer: Kinley,  
A: Kinley Innovation Centre, Paddock, Marley Lane Business Park, Battle,  
East Sussex, TN33 0RE.  
T: +44 (0)1580 830688  
E: sales@kinley.co.uk
  - 2.1. Product reference: Aluexcel
3. Size: 100mm depth
4. Type/ Material: Milled Aluminium
  - 4.1. Finish: Milled
  - 4.2. Colour: Silver
5. Accessories: As required:  
90° Welded Corner - External.  
90° Welded Corner - Internal.  
Large Connector Strip.  
Small Connector Strip.  
Spiral Fixing Stake (shallow at podium).
6. Bedding: Fresh concrete races
7. Joints: Close butted

## **200B E-5 Aluminium Edging (Raised)**

---

1. Description: Raised metal edge to ground floor and podium
2. Manufacturer: Kinley,  
A: Kinley Innovation Centre, Paddock, Marley Lane Business Park, Battle,  
East Sussex, TN33 0RE.  
T: +44 (0)1580 830688  
E: sales@kinley.co.uk
  - 2.1. Product reference: Aluexcel
3. Size: 150mm
4. Type/ Material: Milled Aluminium
  - 4.1. Finish: Milled
  - 4.2. Colour: Silver
5. Accessories: As required:  
90° Welded Corner - External.  
90° Welded Corner - Internal.  
Large Connector Strip.  
Small Connector Strip.  
Spiral Fixing Stake (shallow at podium).
6. Bedding: Cement mortar
7. Joints: Close butted

## 201 E-9 Timber edging

---

1. Description: Timber edging to ground and podium
2. Manufacturer: Contractor's choice
  - 2.1. Product reference: Submit proposals
3. Size: 25x150mm
4. Type/ Material: Pressure Treated Timber
  - 4.1. Finish: Sawn
  - 4.2. Colour: Green/Brown
5. Accessories: 50x50x450mm pressure treated timber stake
6. Bedding: n/a
7. Joints: Close butted

## Roads/paving accessories/ marking/ demarcation

### 395 Road marking (thermoplastic)

---

1. Standard: Sport markings to the relevant British standard and Sport England guidance.
2. Manufacturer: Contractor's choice
  - 2.1. Product reference: Submit proposals
3. Colour: White
4. Retroreflectivity to BS EN 1436: Not required (Class R0)

## Laying

### 510 Laying kerbs, edgings and channels

---

1. Cutting: Neat, accurate and without spalling. Form neat junctions.
  - 1.1. Long units (450 mm and over) minimum length after cutting: 300 mm.
  - 1.2. Short units minimum length after cutting: The lower of one third of their original length or 50 mm.
2. 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.
3. 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

---

1. 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

---

1. Standard: To BS 8500-2.
2. Designated mix: Not less than GEN0 or Standard mix ST1.
3. Workability: Very low.

### 540 Cement mortar bedding

---

1. General: To section Z21.
2. Mix (Portland cement:sand): 1:3.
  - 2.1. Portland cement: Class CEM I 42.5 to BS EN 197-1.

2.2. Sand: to BS EN 12620, grade 0/4 or 0/2 (MP).

3. Bed thickness: 12-40 mm.

---

### **547 Bedding/ Backing of units on fresh concrete races**

---

1. Standard: To BS 7533-6.

---

### **550 Kerb dowels**

---

1. Dowels: Steel bar to BS 4482.

1.1. Size: 12 mm diameter, 150 mm long.

2. Installation of dowels: Vertically into foundation while concrete is plastic.

2.1. Centres: To suit holes in kerbs.

2.2. Projection: 75 mm.

3. Grouting of holes in kerbs: Filled with 1:3 cement:sand mortar finished flush.

---

### **560 Haunching dowels**

---

1. Dowels: Steel bar to BS 4482.

1.1. Size: 12 mm diameter, 150 mm long.

2. Installation of dowels: Vertically into foundation while concrete is plastic.

2.1. Centres: 450 mm.

2.2. Distance from back face of kerb: 50 mm.

2.3. Projection: 75 mm.

3. Haunching: Rectangular cross section, cast against formwork, fully enclosing and protecting dowels.

---

### **570 Channels**

---

1. Installation: To an even gradient, without ponding or backfall.

2. Lowest points of channels: 6 mm above drainage outlets.

---

### **580 Drainage channel systems**

---

1. Installation: To an even gradient, without ponding or backfall. Commence laying from outlets.

2. Silt and debris: Removed from entire system immediately before handover.

3. Washing and detritus: Safely disposed without discharging into sewers or watercourses.

---

### **590 Drainage channel systems with built in fall**

---

1. Installation: Top of channels level, installed in correct sequence to form an even gradient without ponding or backfall. Commence laying from outlets.

2. Silt and debris: Removed from entire system immediately before handover.

3. Washings and detritus: Safely disposed without discharging into sewers or watercourses.

---

### **600 Radius kerbs/ channels**

---

1. Usage: Radii of 15 m or less.

---

### **610 Angle kerbs**

---

1. Usage: Internal and external 90° changes of direction.

2. Cutting of mitres: Not permitted.

## 620 Accuracy

---

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

## 625 Regularity of paved surfaces

---

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

## 630 Narrow mortar joints

---

1. Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled, tightly butted and surplus mortar removed immediately.
  - 1.1. Joint width: 3 mm.

## 640 Tooled mortar joints

---

1. Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled and tooled to a neat flush profile.
  - 1.1. Joint width: 6 mm.

## 650 Sealant movement joints

---

1. Joint filler: Compressible cellular rubber or plastics compatible with specified sealant.
2. Filler installation: Built in as work proceeds, extending through haunching and foundation. Filler positioned accurately to fully support sealant at the recommended depth below exposed faces of units.
3. Joint width: 6 mm
4. Sealant: High modulus silicone
  - 4.1. Colour: Colour match to kerbs
5. Sealant application: As section Z22.

Ω End of Section

## Q22

# Asphalt roads/ pavings

### Types of paving

#### 170A P-22 Coloured Macadam Running Track

---

1. Geotextile: To engineers specification
  - 1.1. Manufacturer: [Tarmac](#)
    - 1.1.1. Contact details
      - 1.1.1.1. Address: Portland House  
Bickenhill Lane  
Solihull  
Birmingham  
West Midlands  
B37 7BQ
      - 1.1.1.2. Telephone: [0121 787 5001](tel:01217875001)
      - 1.1.1.3. Web: <https://tarmac.com/contact/>
      - 1.1.1.4. Email: [enquiries@tarmac.com](mailto:enquiries@tarmac.com)
    - 1.1.2. Product reference: [ULTICOLOUR \(ULTICOLOUR SMA 10 mm.\)](#)
  - 1.2. Standard: To BS EN13108.
  - 1.3. Third party certification: BBA HAPAS Certified (16/H254).
  - 1.4. Target composition
    - 1.4.1. Designation: To engineers specification
    - 1.4.2. Binder grade: To engineers specification
  - 1.5. Colour: Leaf green.
  - 1.6. Aggregate properties
    - 1.6.1. Resistance to polishing - polished stone value (minimum): To engineers specification
    - 1.6.2. Resistance to surface abrasion - AAV (maximum): To engineers specification
  - 1.7. Thickness: To engineers specification
  - 1.8. Depth: To engineers specification

#### 170B P-15 Coloured Macadam Gym Area

---

1. Geotextile: To engineers specification
  - 1.1. Manufacturer: [Tarmac](#)
    - 1.1.1. Contact details
      - 1.1.1.1. Address: Portland House  
Bickenhill Lane  
Solihull  
Birmingham  
West Midlands  
B37 7BQ
      - 1.1.1.2. Telephone: [0121 787 5001](tel:01217875001)
      - 1.1.1.3. Web: <https://tarmac.com/contact/>
      - 1.1.1.4. Email: [enquiries@tarmac.com](mailto:enquiries@tarmac.com)
    - 1.1.2. Product reference: [ULTICOLOUR \(ULTICOLOUR Porous 6 mm.\)](#)
  - 1.2. Standard: To BS EN13108.
  - 1.3. Third party certification: BBA HAPAS Certified (16/H254).

- 1.4. Target composition
  - 1.4.1. Designation: To engineers specification
  - 1.4.2. Binder grade: To engineers specification
- 1.5. Colour: Light Buff quartzite.
- 1.6. Aggregate properties
  - 1.6.1. Resistance to polishing - polished stone value (minimum): To engineers specification
  - 1.6.2. Resistance to surface abrasion - AAV (maximum): To engineers specification
- 1.7. Thickness: To engineers specification
- 1.8. Depth: To engineers specification
- 1.9. Porosity: 5000 mm/hour.

## Preparatory work/ requirements

### 220 Bituminous materials generally

---

1. Suppliers' names: Submit.
  - 1.1. Timing (minimum): Two weeks before starting work.
2. Test certificates: At the time of delivery for each manufacturing batch submit certificate:
  - 2.1. Confirming compliance with this specification and the relevant standard.
  - 2.2. Stating full details of composition of mix.

### 240 Acceptance of surfaces

---

1. Surface: Sound, clean and suitably close textured.
2. Level tolerances: To BS 594987.
3. Kerbs and edgings: Complete, adequately bedded and haunched and to the required levels.

### 250 Abutments

---

1. Vertical edges of manholes, gullies, kerbs and other abutments: Clean and paint with a thin uniform coating of hot applied 40/60 paving grade bitumen.
2. Finishing: Tamp surface around projections.
  - 2.1. Level: Flush or not more than 3 mm above projections.

## Laying

### 310 Laying generally

---

1. Preparation: Remove all loose material, rubbish and standing water.
2. Adjacent work: Form neat junctions. Do not damage.
3. Channels, kerbs, inspection covers etc: Keep clean.
4. New paving
  - 4.1. Keep traffic free until it has cooled to prevailing atmospheric temperature.
  - 4.2. Do not allow rollers to stand at any time.
  - 4.3. Prevent damage.
  - 4.4. Lines and levels: With regular falls to prevent ponding.
  - 4.5. Overall texture: Smooth, even and free from dragging, tearing or segregation.
  - 4.6. State on completion: Clean.

### 320 Adverse weather

---

1. Frozen materials: Do not use.

2. Suspend laying
  - 2.1. During freezing conditions
  - 2.2. If the air temperature reaches 0°C, or in calm dry conditions -3°C, on a falling thermometer.
  - 2.3. Hot rolled asphalt: During periods of continuous or heavy rain or if there is standing water on the base.

### **330 Levels**

---

1. Permissible deviation from the required levels, falls and cambers (maximum): In accordance with BS 594987, clause 5.2.

### **340 Flatness/ Surface regularity**

---

1. Deviation of surface: Where appropriate in relation to the geometry of the surface, the variation in gap under a 3 m straightedge placed anywhere on the surface to be not more than:
  - 1.1. Base: To engineers specification
  - 1.2. Binder course: To engineers specification
  - 1.3. Surface course: Machine laid, 7 mm
  - 1.4. Where a straightedge cannot be used the surface must be of a comparable standard of accuracy when judged by eye.

## **Completion**

### **390 Documentation**

---

1. Standard: BS EN 13108-1
  - 1.1. Declaration of conformity: Submit.
2. Number of copies: 2
3. Submission: Two weeks prior to date when Contractor expects work to be complete

Ω End of Section

## Q23

# Gravel/ hoggin/ woodchip/ resin bound roads/ pavings/ overlays

## Types of surfacing

### 110A P10- Compacted Gravel

---

1. Description: Compacted gravel
2. Geotextile: To engineers specification
3. Granular sub-base: To engineers specification  
(No sub base above tree pits and ornamental planting beds)
  - 3.1. Compacted thickness: -
4. Surface course: Angular gravel, free from clay, with sufficient grit to enable compaction.
  - 4.1. Type: Granite
  - 4.2. Source: CED Stone Ltd  
A: 728 London Road, West Thurrock, Essex, RM20 3LU  
T: 01708 867 237  
E: sales@cedstone.co.uk
    - 4.2.1. Product: CEDEC Footpath Gravel
  - 4.3. Colour: Silver
  - 4.4. Size: Graded <6 mm
  - 4.5. Compacted thickness: 50mm
5. Installation : To manufacturers specification. Summary below, refer to latest manufacturers information for more details:
  - It must be slightly moist and should not be laid if dry.
  - Initial compaction should be carried out BEFORE further watering takes place, by a non-vibratory roller that is not so heavy as to distort the surface.
  - After initial compaction, thorough saturation with water is necessary, taking care to prevent heavy disturbance of the top surface.
  - Final compaction of the saturated surface will be required following the watering.
  - Further cycles of watering and compacting may be required within one week of laying, depending on the site conditions prevalent at the time.
6. Completion: Compact to produce a firm, regular surface, stable in use.

### 160A P-6: Loose gravel

---

1. Description: Gravel margin
2. Geotextile: Sheet
  - 2.1. Manufacturer: Contractor's choice
    - 2.1.1. Product reference: Submit proposals
3. Granular sub-base: Type 3 unbound mixture.
  - 3.1. Compacted thickness: Refer to detail drawings
4. Gravel: Loose laid and raked to uniform thickness.
  - 4.1. Type: Irish Barley Quartzite Aggregate
  - 4.2. Source: CED Ltd.  
A: 728 London Road, West Thurrock, Essex. RM20 3LU

T: 01708 867 237  
E: sales@cedstone.co.uk

- 4.3. Colour: Light grey cream
- 4.4. Size: 20mm
- 4.5. Thickness: 50 mm

## Laying

### 315 Materials

---

- 1. Compatibility: Chippings suitable for use with respective binders/ emulsions/ resin/ epoxy.

### 320 Samples

---

- 1. Submit: Representative samples of all aggregates.

### 340 Laying generally

---

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

### 350 Cold weather working

---

- 1. Frozen materials: Do not use.
- 2. Freezing conditions: Do not lay pavings.
- 3. Cold bituminous surface dressings: Do not apply when ambient temperature is below 10°C.
- 4. Other dressings or overlays: As manufacturers' recommendations.

### 360 Drainage falls

---

- 1. Sealed surfaces
  - 1.1. Falls and cross falls (minimum): 1:40.
  - 1.2. Camber (minimum): 1:50.
- 2. Unsealed surfaces (minimum): 1:30.

### 380 Laying granular surfaces in pedestrian areas and cycle tracks

---

- 1. Permissible deviation from required levels, falls and cambers (maximum):  $\pm 12$  mm.
- 2. General: Spread and level in layers. As soon as possible, compact each layer to manufacturers standard.
- 3. Dry weather: Lightly water layers during compaction.

### 390 Protection from traffic and plant

---

- 1. Paved areas: Restrict access to prevent damage.

## Completion - Not Used

Ω End of Section

## Q24

# Interlocking brick/ block roads/ pavings

## Types of paving

### 110A Vehicular block paving system

---

1. Description: Vehicular block paving
2. Subgrade improvement layer: To engineers specification
  - 2.1. Compacted thickness: -
3. Geotextile: To engineers specification
  - 3.1. Manufacturer: -
    - 3.1.1. Product reference: -
4. Granular sub-base: To engineers specification
  - 4.1. Compacted thickness: -
5. Base: To engineers specification
6. Laying course
  - 6.1. Material: In accordance with BS 7533-3.
    - 6.1.1. Category: To engineers specification
  - 6.2. Method of screeding, in accordance with BS 7533-3: -
  - 6.3. Nominal thickness after compaction: -
7. Paving units: P-14: Q24/121A  
P-20: Q24/123A  
P-21: Q24/124B
8. Jointing
  - 8.1. Material: In accordance with BS 7533-3.
  - 8.2. Joint width: 2-5 mm.
9. Sealer/ Stabilizer: Not required
10. Setting out
  - 10.1. Bond: Refer to P Type specification
  - 10.2. Features: Mortar bedded edge restraint
11. Accessories: None

### 119 A Permeable vehicular concrete block paving system

---

1. Description: Permeable vehicular block paving
2. Subgrade improvement layer: To engineers specification
  - 2.1. Compacted thickness: -
3. Impermeable membrane: To engineers specification
  - 3.1. Manufacturer: To engineers specification
    - 3.1.1. Product reference: -
4. Water collection system: To engineers specification
  - 4.1. Manufacturer: To engineers specification
    - 4.1.1. Product reference: -
5. Geotextile below granular sub-base: To engineers specification
6. Granular sub-base: To engineers specification
  - 6.1. Compacted thickness: -

7. Geotextile below laying course
  - 7.1. Manufacturer: To engineers specification
    - 7.1.1. Product reference: -
8. Laying course
  - 8.1. Material: In accordance with BS 7533-3, Annex D.2.2
  - 8.2. Compaction: In accordance with BS 7533-3. Determine by trial the depth of loose bedding material needed to ensure specified bedding course thickness after final compaction of paving.
  - 8.3. Nominal thickness after compaction: 50 mm
9. Paving Units: P-18: Q24/122A  
P-20A: Q24/123B
10. Jointing
  - 10.1. Material: Single size 5 mm washed aggregate
  - 10.2. Joint width: 6 mm
  - 10.3. Conventional sand jointing: Do not use
11. Setting out
  - 11.1. Bond: 90° herringbone
  - 11.2. Features:
    - Mortar bedded edge restraint
    - White marker blocks defining parking bays
12. Accessories: None

## **121A P-14 Granite aggregate concrete setts**

---

1. Blocks: To BS EN 1338.
  - 1.1. Manufacturer: Marshalls Plc.  
A: Landscape House, Lowfields Business Park, Elland, West Yorkshire  
HX5 9HT  
t: [+44 \(0\)330 0574472](tel:+44(0)3300574472)  
e: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
    - 1.1.1. Product reference: Modal
  - 1.2. Sizes: 200 x 100 x 80 mm (Size to be confirmed to match completed Block F3)
  - 1.3. Colour/ Finish: Silver Grey Granite Textured
  - 1.4. Requirements: -
    - 1.4.1. Freeze/ thaw resistance: Class 3
    - 1.4.2. Abrasion resistance: Class 3
    - 1.4.3. Slip/ Skid resistance: PTV to BS 7976-2 of 45
2. Setting out
  - 2.1. Bond: Double row stretcher

## **122A P-18 Permeable concrete block paving**

---

1. Blocks: To BS EN 1338.
  - 1.1. Manufacturer: Marshalls Plc.  
A: Landscape House, Lowfields Business Park, Elland, West Yorkshire  
HX5 9HT  
t: [+44 \(0\)330 0574472](tel:+44(0)3300574472)  
e: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
    - 1.1.1. Product reference: Keyblock Priora
  - 1.2. Sizes: 200 x 100 x 80 mm

- 1.3. Colour/ Finish: Brindle
- 1.4. Requirements: -
  - 1.4.1. Freeze/ thaw resistance: Class 3
  - 1.4.2. Abrasion resistance: Class 3
  - 1.4.3. Slip/ Skid resistance: PTV to BS 7976-2 of 45
- 2. Setting out
  - 2.1. Bond: 45° herringbone

## **123A P-20 Granite aggregate concrete block paving**

---

- 1. Geotextile: n/a
  - 1.1. Manufacturer: [Marshalls plc](#)
    - 1.1.1. Contact details
      - 1.1.1.1. Address: Landscape House  
Lowfields Business Park  
Elland  
West Yorkshire  
HX5 9HT
      - 1.1.1.2. Telephone: [+44 \(0\)330 0574472](tel:+44(0)3300574472)
      - 1.1.1.3. Web: [www.marshalls.co.uk](http://www.marshalls.co.uk)
      - 1.1.1.4. Email: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
    - 1.1.2. Product reference: Modal Paving
  - 1.2. Standard: To BS EN 1338.
  - 1.3. Physical properties
    - 1.3.1. Colour: Light Granite Textured
    - 1.3.2. Finish: Textured
    - 1.3.3. Profile
      - 1.3.3.1. Paver type: Regular plan form.
      - 1.3.3.2. Arrises: Chamfered.
    - 1.3.4. Dimensions and associated tolerances
      - 1.3.4.1. Nominal sizes: 200x100x80mm
    - 1.3.5. Arrises: Chamfered.
    - 1.3.6. Abrasion resistance: <23 mm.
    - 1.3.7. Slip resistance: USRV/ PSRV to BS EN 1338 of >45.
  - 1.4. Dimensions and tolerances: ±2 mm (length); ±2 mm (width); ±3 mm (thickness).
  - 1.5. Material density: 2300 kg/m<sup>3</sup>.
  - 1.6. Durability: <1.0 kg/m<sup>2</sup>.
  - 1.7. Surfacing layer: 4 mm (minimum)
  - 1.8. Reaction to fire: Class A1.
- 2. Setting out
  - 2.1. Bond: Stretcher

## **Execution**

### **200 Execution generally – concrete block and clay paver paving**

---

- 1. Standard: In accordance with BS 7533-3.

## 205 Execution generally – natural stone paving

---

1. **Standard:** In accordance with BS 7533-7, as relevant to flexible (non-rigid) laying and construction.
2. **Subgrade, sub-base and roadbase presentation:** Tight and dense surface, to prevent loss of laying course material into it during construction and use.
3. **Joint filling:** Do not work in damp conditions. Top joints up at the earliest opportunity.

## 211 Colour banding

---

1. **General:** Unless premixed by manufacturer, select blocks/ pavers/ setts from at least 3 separate packs in rotation, to avoid colour banding.

## 220 Samples

---

1. **General:** Before ordering, submit samples of all blocks/ pavers/ setts that are representative of colour and appearance.

## 240 Adverse weather

---

1. **General:** Do not use frozen materials or lay bedding on frozen or frost covered sub-bases.

## 485 Laying blocks/ pavers/ setts

---

1. **Setting out:** Start from an edge restraint.
2. **Cutting:** Cleanly, accurately and vertically, without spalling. Do not mark or damage visible surfaces.
3. **Cut edges:** Turn inwards where possible; do not position against edge restraints or other features.
4. **In situ mortar or concrete infill:** Do not use
5. **Compaction:** Vibrate to produce thoroughly interlocked paving of even overall appearance with regular joints and accurate to line, level and profile. Do not mark or damage paving units, kerbs and adjacent work.
  - 5.1. **Concrete blocks and clay pavers:** In accordance with BS 7533-3, Annex F, to site category required for laying course material.

## 495 In situ surrounds to obstructions

---

1. **Locations:**
  - Around circular drainage fittings
  - At circular street furniture bases
  - Where agreed on site
2. **Material:** 3:1 mix of coarse aggregate and mortar in accordance with BS 7533-3, clause 5.4.3.2.
3. **Shape and size:** Rectangular, 100 mm (minimum) all round obstruction.
4. **Thickness (minimum):** Combined depth of blocks/ pavers/ setts and sand laying course.
5. **Colour:** To match paving units
6. **Timing:** Lay and allow to cure in advance of laying blocks/ pavers/ setts.

## 505 Regularity of paved surfaces

---

1. **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.
2. **Joints between paving units or utility access covers**
  - 2.1. **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).

- 2.2. 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.
- 2.3. Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
3. Sudden irregularities: Not permitted.

## Completion

### 615 Completion of paving

---

1. Final compaction of the surface course: In accordance with BS 7533-3.
2. Vacuum cleaning machines: Not allowed.

Ω End of Section

## Q25 Slab/ brick/ sett/ cobble pavings

### General

#### 120 Concrete flag paving system (Pedestrian)

---

1. Description: Pedestrian Paving
2. Subgrade improvement layer: To engineers specification
  - 2.1. Compacted thickness: -
3. Granular sub-base: To engineers specification
  - 3.1. Compacted thickness: -
4. Base: n/a
  - 4.1. Thickness: -
5. Laying course: Sand/ fine aggregate (P-4 Stepping stones Bedding Mortar)
  - 5.1. Accessories: None
6. Paving units: P-4: Q25/315B  
P-9: Q25/315C  
P-28: Q25/
7. Jointing: Sand/ fine aggregate
  - 7.1. Bond: Half lap staggered
8. Accessories: Kerbs, as section Q10

#### 120A Concrete flag paving system (Vehicular)

---

1. Description: Pedestrian Paving
2. Subgrade improvement layer: To engineers specification
  - 2.1. Compacted thickness: -
3. Granular sub-base: To engineers specification
  - 3.1. Compacted thickness: -
4. Base: To engineers specification
  - 4.1. Thickness: -
5. Laying course: Sand/ fine aggregate
  - 5.1. Accessories: None
6. Paving units: P-7: Q25/316A  
P-7A: Q25/316C  
P-9A: Q25/315C  
P-13: Q25/316B
7. Jointing: Sand/ fine aggregate
  - 7.1. Bond: Half lap staggered
8. Accessories: Kerbs, as section Q10

#### 127 Pedestal supported paving slab/ flag system

---

1. Description: Pedestal paving at podium and roof
2. Preparation of existing base: Protection board to architects specification
3. Paving support: Pedestals as clause Q25/480A
4. Paving units: P-1: Q25/315A

## System performance - Not Used

### Products

#### 315A P-1: Concrete flags

---

1. Standard: To BS EN 1339.
  - 1.1. Manufacturer: [Marshalls plc](#)
    - 1.1.1. Contact details
      - 1.1.1.1. Address: Landscape House  
Lowfields Business Park  
Elland  
West Yorkshire  
HX5 9HT
      - 1.1.1.2. Telephone: [+44 \(0\)330 0574472](tel:+44(0)3300574472)
      - 1.1.1.3. Web: [www.marshalls.co.uk](http://www.marshalls.co.uk)
      - 1.1.1.4. Email: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
    - 1.1.2. Product reference: [Conservation X Paving](#)
  - 1.2. Standard: To BS EN 1339.
  - 1.3. Physical properties
    - 1.3.1. Colour: Cream.
    - 1.3.2. Finish: Textured.
    - 1.3.3. Dimensions and associated tolerances
      - 1.3.3.1. Nominal sizes: 600 x 600 x 50 mm.
      - 1.3.3.2. Tolerances on plan dimension and thickness (nominal): Length  $\pm 2$  mm, width  $\pm 2$  mm, thickness  $\pm 3$  mm.
    - 1.3.4. Weathering resistance:  $\leq 1.0$  kg/m<sup>2</sup> as a mean with no individual value  $> 1.5$  kg/m<sup>2</sup> (freeze thaw durability).
    - 1.3.5. Abrasion resistance:  $\leq 23$  mm (Wide Wheel Abrasion Test).
    - 1.3.6. Slip resistance:  $> 45$ .
    - 1.3.7. Skid resistance:  $> 45$ .

#### 315B P-4: Concrete flag stepping stones

---

1. Standard: To BS EN 1339.
  - 1.1. Manufacturer: [Marshalls plc](#)
    - 1.1.1. Contact details
      - 1.1.1.1. Address: Landscape House  
Lowfields Business Park  
Elland  
West Yorkshire  
HX5 9HT
      - 1.1.1.2. Telephone: [+44 \(0\)330 0574472](tel:+44(0)3300574472)
      - 1.1.1.3. Web: [www.marshalls.co.uk](http://www.marshalls.co.uk)
      - 1.1.1.4. Email: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
    - 1.1.2. Product reference: [Conservation X Paving](#)
  - 1.2. Standard: To BS EN 1339.
  - 1.3. Physical properties
    - 1.3.1. Colour: Cream.
    - 1.3.2. Finish: Textured.

- 1.3.3. Dimensions and associated tolerances
  - 1.3.3.1. Nominal sizes: 900 x 300 x 50 mm.
  - 1.3.3.2. Tolerances on plan dimension and thickness (nominal): Length  $\pm 2$  mm, width  $\pm 2$  mm, thickness  $\pm 3$  mm.
- 1.3.4. Weathering resistance:  $\leq 1.0$  kg/m<sup>2</sup> as a mean with no individual value  $> 1.5$  kg/m<sup>2</sup> (freeze thaw durability).
- 1.3.5. Abrasion resistance:  $\leq 23$  mm (Wide Wheel Abrasion Test).
- 1.3.6. Slip resistance:  $> 45$ .
- 1.3.7. Skid resistance:  $> 45$ .

### **315C P-9 & P9A: Concrete flags**

---

- 1. Standard: To BS EN 1339.
  - 1.1. Manufacturer: [Marshalls plc](#)
    - 1.1.1. Contact details
      - 1.1.1.1. Address: Landscape House  
Lowfields Business Park  
Elland  
West Yorkshire  
HX5 9HT
      - 1.1.1.2. Telephone: [+44 \(0\)330 0574472](tel:+44(0)3300574472)
      - 1.1.1.3. Web: [www.marshalls.co.uk](http://www.marshalls.co.uk)
      - 1.1.1.4. Email: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
    - 1.1.2. Product reference: P-9: Saxon Paving  
P-9A: Saxon Paving Traffica
  - 1.2. Standard: To BS EN 1339.
  - 1.3. Physical properties
    - 1.3.1. Colour: Natural
    - 1.3.2. Finish: Textured.
    - 1.3.3. Dimensions and associated tolerances
      - 1.3.3.1. Nominal sizes: P9: 450 x 450 x 50 mm.  
P9A: 450 x 450 x 70 mm.
      - 1.3.3.2. Tolerances on plan dimension and thickness (nominal): Length  $\pm 2$  mm, width  $\pm 2$  mm, thickness  $\pm 3$  mm.
    - 1.3.4. Weathering resistance:  $\leq 1.0$  kg/m<sup>2</sup> as a mean with no individual value  $> 1.5$  kg/m<sup>2</sup> (freeze thaw durability).
    - 1.3.5. Abrasion resistance:  $\leq 23$  mm (Wide Wheel Abrasion Test).
    - 1.3.6. Slip resistance:  $> 45$ .
    - 1.3.7. Skid resistance:  $> 45$ .

### **315D P-28 Concrete Step Tread and Riser**

---

- 1. Description: Building steps onto 1st Floor Podium
- 2. Standard: To BS EN 1339.
  - 2.1. Manufacturer: [Marshalls plc](#)
    - 2.1.1. Contact details
      - 2.1.1.1. Address: Landscape House  
Lowfields Business Park  
Elland

West Yorkshire  
HX5 9HT

- 2.1.1.2. Telephone: [+44 \(0\)330 0574472](tel:+44(0)3300574472)
- 2.1.1.3. Web: [www.marshalls.co.uk](http://www.marshalls.co.uk)
- 2.1.1.4. Email: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
- 2.1.2. Product reference: Saxon Textured Step Tread and Riser
- 2.2. Standard: To BS EN 1339.
- 2.3. Physical properties
  - 2.3.1. Colour: Natural with Black Inlay.
  - 2.3.2. Finish: Textured.
  - 2.3.3. Dimensions and associated tolerances
    - 2.3.3.1. Nominal sizes: Tread: 400x400x50mm (cut down in width to suit step size)  
Riser: 400x50x50mm
    - 2.3.3.2. Tolerances on plan dimension and thickness (nominal): Length  $\pm 2$  mm, width  $\pm 2$  mm, thickness  $\pm 3$  mm.
  - 2.3.4. Weathering resistance:  $\leq 1.0$  kg/m<sup>2</sup> as a mean with no individual value  $> 1.5$  kg/m<sup>2</sup> (freeze thaw durability).

## **316A P-7 Granite Aggregate Setts**

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- 1. Standard: To BS EN 1339.
  - 1.1. Manufacturer: [Marshalls plc](#)
    - 1.1.1. Contact details
      - 1.1.1.1. Address: Landscape House  
Lowfields Business Park  
Elland  
West Yorkshire  
HX5 9HT
      - 1.1.1.2. Telephone: [+44 \(0\)330 0574472](tel:+44(0)3300574472)
      - 1.1.1.3. Web: [www.marshalls.co.uk](http://www.marshalls.co.uk)
      - 1.1.1.4. Email: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
    - 1.1.2. Product reference: [Modal Paving](#)
  - 1.2. Standard: To BS EN 1338 and BS EN 1339.
  - 1.3. Physical properties
    - 1.3.1. Colour: Light Granite Textured
    - 1.3.2. Finish: Textured.
    - 1.3.3. Profile
      - 1.3.3.1. Flag type: Regular plan form.
    - 1.3.4. Dimensions and associated tolerances
      - 1.3.4.1. Nominal sizes: 300 x 100 x 80 mm. (Size to be confirmed to match completed Block F3)
      - 1.3.4.2. Tolerances on plan dimension and thickness (nominal): Length  $\pm 2$  mm, width  $\pm 2$  mm, thickness  $\pm 3$  mm.
    - 1.3.5. Weathering resistance:  $\leq 1.0$  kg/m<sup>2</sup> (as a mean with no individual value),  $> 1.5$  kg/m<sup>2</sup> (freeze thaw durability).
    - 1.3.6. Abrasion resistance:  $\leq 23$  mm (wide wheel abrasion test).
    - 1.3.7. Slip resistance:  $> 45$ .
    - 1.3.8. Skid resistance:  $> 45$ .

## 316B P-13 Granite Aggregate concrete flag paving

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1. Standard: To BS EN 1339.
  - 1.1. Manufacturer: [Marshalls plc](#)
    - 1.1.1. Contact details
      - 1.1.1.1. Address: Landscape House  
Lowfields Business Park  
Elland  
West Yorkshire  
HX5 9HT
      - 1.1.1.2. Telephone: [+44 \(0\)330 0574472](tel:+44(0)3300574472)
      - 1.1.1.3. Web: [www.marshalls.co.uk](http://www.marshalls.co.uk)
      - 1.1.1.4. Email: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
    - 1.1.2. Product reference: [Modal Paving](#)
  - 1.2. Standard: To BS EN 1338 and BS EN 1339.
  - 1.3. Physical properties
    - 1.3.1. Colour: Silver Grey Granite
    - 1.3.2. Finish: Textured.
    - 1.3.3. Profile
      - 1.3.3.1. Flag type: Regular plan form.
    - 1.3.4. Dimensions and associated tolerances
      - 1.3.4.1. Nominal sizes: 600 x 300 x 80 mm.
      - 1.3.4.2. Tolerances on plan dimension and thickness (nominal): Length  $\pm 2$  mm, width  $\pm 2$  mm, thickness  $\pm 3$  mm.
    - 1.3.5. Weathering resistance:  $\leq 1.0$  kg/m<sup>2</sup> (as a mean with no individual value),  $> 1.5$  kg/m<sup>2</sup> (freeze thaw durability).
    - 1.3.6. Abrasion resistance:  $\leq 23$  mm (wide wheel abrasion test).
    - 1.3.7. Slip resistance:  $> 45$ .
    - 1.3.8. Skid resistance:  $> 45$ .

## 316C P-7A Granite Aggregate Setts

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1. Standard: To BS EN 1339.
  - 1.1. Manufacturer: [Marshalls plc](#)
    - 1.1.1. Contact details
      - 1.1.1.1. Address: Landscape House  
Lowfields Business Park  
Elland  
West Yorkshire  
HX5 9HT
      - 1.1.1.2. Telephone: [+44 \(0\)330 0574472](tel:+44(0)3300574472)
      - 1.1.1.3. Web: [www.marshalls.co.uk](http://www.marshalls.co.uk)
      - 1.1.1.4. Email: [info@marshalls.co.uk](mailto:info@marshalls.co.uk)
    - 1.1.2. Product reference: [Modal Paving](#)
  - 1.2. Standard: To BS EN 1338 and BS EN 1339.
  - 1.3. Physical properties
    - 1.3.1. Colour:
      - Silver Grey Granite
    - 1.3.2. Finish: Textured.

1.3.3. Profile

1.3.3.1. Flag type: Regular plan form.

1.3.4. Dimensions and associated tolerances

1.3.4.1. Nominal sizes: 300 x 100 x 80 mm.

1.3.4.2. Tolerances on plan dimension and thickness (nominal): Length  $\pm 2$  mm, width  $\pm 2$  mm, thickness  $\pm 3$  mm.

1.3.5. Weathering resistance:  $\leq 1.0$  kg/m<sup>2</sup> (as a mean with no individual value),  $> 1.5$  kg/m<sup>2</sup> (freeze thaw durability).

1.3.6. Abrasion resistance:  $\leq 23$  mm (wide wheel abrasion test).

1.3.7. Slip resistance:  $> 45$ .

1.3.8. Skid resistance:  $> 45$ .

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**320A P-23 Hazard Warning Paving**

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1. Description: To all steps

2. Standard: To DD CEN/TS 15209.

3. Material: Precast concrete

3.1. Manufacturer: A: Landscape House, Lowfields Business Park, Elland, West Yorkshire, HX5 9HT

T: +44 (0)330 0574472

E: info@marshalls.co.uk

3.1.1. Product reference: Tactile Hazard Warning 450 x 450 x 50 Natural

4. Recycled content: Not applicable

5. Nominal sizes: 400 x 400 x 50mm

6. Colour: Natural

7. Type of surface: Rib – type R1

---

**371 Site mixed mortar**

---

1. Cement: For P-4 Bedding

1.1. Standard: As section Z21.

2. Sand / fine aggregate: For P-4 Bedding

3. Standard: To BS EN 12620, designations:

3.1. Flag and slab paving laying course:: Laying course: *GF85 0/4 (MP)*

3.2. Flag and slab paving jointing:: Jointing: *GF85 0/1 (MP)*.

---

**390 Sand/ fine aggregate for unbound laying course and jointing of concrete flag paving**

---

1. Description: Paving Units

2. Standard: To BS 7533-4, unbound construction laying course and jointing material.

3. Purity: Free from deleterious salts, contaminants, lime and cement.

4. Procurement: Obtain from one source and ensure consistent grading.

---

**420 Sand/ fine aggregate for laying course of concrete sett paving**

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1. Material: Sand/ fine aggregate for laying courses to BS 7533-4

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**480A Non combustible pedestals**

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1. Description: Paving at roof level

2. Manufacturer: Raaft Ltd  
A: Clerkenwell, London, EC1V 4JA, United Kingdom  
T: +44 (0)20 3146 7879  
E: enquiries@raaft.co
  - 2.1. Product reference: Metal Adjustable Pedestals  
341015: 90-140mm  
341016: 110-180mm
3. Type: Class A Fire-Rated Non-combustible pedestal
4. Material: Zinc-coated steel
5. Dimensions: 341015: 90-140mm  
341016: 110-180mm
6. Additional pedestals: Adjacent to perimeters
7. Accessories: Rubber shims, Spacer tabs

## Execution

### 610 Material samples

---

1. Samples representative of colour and appearance of designated materials: Submit before placing orders.
  - 1.1. Designated materials: Concrete slab paving Concrete sett paving

### 620 Adverse weather

---

1. General
  - 1.1. 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.
  - 1.2. Frozen materials: Do not use. Do not lay bedding on frozen or frost covered bases.
2. Paving with mortar joints and/ or bedding
  - 2.1. Protect from frost damage, rapid drying out and saturation until mortar has hardened.
3. Paving laid and jointed in sand/ fine aggregate
  - 3.1. Stockpiled laying course sand/ fine aggregate: Protect from saturation.
  - 3.2. Exposed areas of unbound laying course and uncompacted areas of unbound paving: Protect from heavy rainfall.
  - 3.3. Saturated unbound laying course: Remove and replace, or allow to dry before proceeding.
  - 3.4. Laying dry sand/ fine aggregate 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

---

1. Appearance: Smooth and even with regular joints and accurate to line, level and profile.
2. Falls: To prevent ponding.
3. Bedding of paving units: Firm so that rocking or subsidence does not occur or develop.
  - 3.1. Bedding/ Laying course: Consistently and accurately graded, spread and compacted to produce uniform thickness and support for paving units.
4. Slopes: Lay paving units upwards from the bottom of slopes.
5. Paving units: Free of mortar and sand stains.
6. Cutting: Cut units cleanly and accurately, without spalling, to give neat junctions with edgings and adjoining finishes.

### **630 Levels of paving**

---

1. Permissible deviation from specified levels
  - 1.1. Generally:  $\pm 6$  mm.
2. Height of finished paving above features
  - 2.1. At gullies: +6 to +10 mm.
  - 2.2. At drainage channels and kerbs: +3 to +6 mm.

### **637 Regularity of paved surfaces**

---

1. 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.
2. Joints between paving units or utility access covers
  - 2.1. 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).
  - 2.2. 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.
  - 2.3. Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
3. Sudden irregularities: Not permitted.

### **640 Colour banding**

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1. General: Unless premixed by manufacturer, select from at least 3 separate packs in rotation to avoid colour banding.

### **645 Protection**

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1. Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
2. Materials storage: Do not overload pavings with stacks of materials.
3. Handling: Do not damage paving unit corners, arrises, or previously laid paving.
4. Mortar bedded pavings: Keep free from traffic after laying:
  - 4.1. Pedestrian traffic (minimum): 24 hours
  - 4.2. Vehicular traffic (minimum): 7 days
5. Access: Restrict access to paved areas to prevent damage from site traffic and plant.

### **655 Condition of sub-bases/ bases before spreading laying course**

---

1. Trenches and excavation of soft or loose spots in subgrade: Fill and thoroughly compact.
2. 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.
3. Prepared existing and new bound bases (roadbases): Sound, clean, free from rutting or major cracking. Remove sharp stones, projections and debris.
4. Sub-base/ Roadbase level tolerances: To BS 7533-7, Annex A.
5. Levels and falls: Accurate and within the specified tolerances.
6. Drainage outlets: Within 0-10 mm of the required finished level.
7. Features in unbound paving (including mortar bedded restraints and drainage ironwork): Complete to required levels; adequately bed and haunch in mortar.
8. Sub-bases containing cement/ hydraulic binder: Cure for minimum times specified in BS 7533-4.

### **695 Site mixed mortar**

---

1. Description: - LAYING COURSE FOR CONCRETE STEPPING STONES
2. Mix: 1:3 cement:sand
3. Consistency: Workable
4. Admixtures: None

### **710 Laying flag and slab paving – sand/ fine aggregate laying course and jointing**

---

1. Standard: In accordance with BS 7533-4.
2. Flag installation and cutting: To Interpave 'Concrete flag paving'.
3. Laying course
  - 3.1. Nominal thickness after compaction: 50 mm
4. Joint width: 2-5 mm.

### **715 Laying flag and slab paving – mortar laying course and jointing**

---

1. Standard generally: In accordance with BS 7533-4.
2. Flag installation and cutting: To Interpave 'Concrete flag paving'.
3. Laying course
  - 3.1. Nominal thickness: 30 mm before laying paving slabs
4. Laying and jointing: Stacked bond
5. Joint width (nominal): 5 mm

### **810 Pedestal installation**

---

1. Surface to accept pedestals: Clean and free of debris.
2. Setting out: Mark centre-point of pedestal on substrate surface, with perpendicular guidelines to ensure square layout.
  - 2.1. Orientation: Align parallel with adjacent features.
  - 2.2. Spacing: To suit paving material and dimensions
3. Movement tolerance at perimeter of paver system (maximum): 5 mm.

## **Completion**

### **915 Completion of paving with dry sand or fine aggregate filled joints**

---

1. Sand dressing: Leave a thin layer of dry jointing sand/ fine aggregate over the paving, sweep clean before practical completion
2. Final compaction of the surface course: In accordance with BS 7533-3.
3. Vacuum cleaning machines: Not allowed.

### **920 Completion of grassed pavings**

---

1. Protection: Protect from traffic for 6-8 weeks or until grass can tolerate traffic.

Ω End of Section

## Q26

# Special surfacings/ pavings for sport/ general amenity

## Sports surfacing

### 230A P-5 Rubber Crumb Surfacing

---

1. Subgrade improvement layer: To engineers specification
  - 1.1. Compacted thickness: -
2. Sub-base: To engineers specification
  - 2.1. Compacted thickness: -
3. Manufacturer: Playtop Ltd

A: 11 Enterprise Way, Jubilee Business Park, Derby, DE21 4BB  
T: 01332 287 418  
E: sales@playtop.co.uk

  - 3.1. Product reference:: Playtop Outdoor
4. Base: Recycled tyre rubber
  - 4.1. Thickness: Minimum 40mm. Dependent on Critical Fall Height - refer to manufacturers information.
5. Wearing surface: Polyurethane bound EDPM rubber granules
  - 5.1. Colour: Earth Blend
  - 5.2. Texture: Porous
  - 5.3. Thickness: 18 mm
  - 5.4. Ignitability: Evidence of testing to BS 7188
6. Critical fall height when tested to BS EN 1177: Refer to play equipment manufacturers information.

### 240A P-8: Rubber Play Tile for Grass

---

1. Base: Topsoil for lawn as Q28/115A
2. Turf: Turf as Q30/400
3. Wearing surface: Rubber tiles above lawn.
  - 3.1. Manufacturer: Playsmart (UK)

A: Birchy Cross Business Centre, Unit 4, Broad Ln, Solihull B94 5DN  
T: 01564 742811  
E: info@playsmartuk.co.uk

    - 3.1.1. Product reference: FireSmart - Fire Retardant Grass Mat
  - 3.2. Colour: Black
  - 3.3. Thickness: 23mm
  - 3.4. Ignitability: The surface, when tested to BS 4790, must not be ignited or damaged enough to cause a ball to deviate from its true path.
  - 3.5. Impact surface: BS EN 1177
4. Fixing: Manufacturers 'harpoon' peg.
5. Special requirements: 300mm of edge tiles buried below adjacent lawn area. Refer to details.

### 260A P-2: Resin bound stone aggregate surfacing

---

1. Broof-T4 tested Resin bound aggregate product. Contractor to note that any substitutions need to meet BroofT4.
2. Sub-base: Type 3 to engineers detail

- 2.1. Compacted thickness: minimum 75mm
3. Base: Surecell reinforcement
  - 3.1. Description: Fully connected cellular reinforcement structure infilled with well compacted 4/10mm graded crushed aggregate to BS EN12620
  - 3.2. Thickness: 52mm
4. Wearing surface: Resin bound mixed stone aggregate of 6 mm nominal size. Finished with two layers of acrylic coloured resin.
  - 4.1. Thickness: 24mm
  - 4.2. Manufacturer: SureSet UK Ltd  
A: 32 Deverill Road Trading Estate, Sutton Veny, Warminster, Wiltshire, BA12 7BZ  
T: +44 (0)1985 841 180  
E: website@sureset.co.uk
    - 4.2.1. Product reference: Natural aggregate - permeable on SureCell base to meet BroofT4.
  - 4.3. Colour: Aztec Gold

## **260B P-3: Resin bound stone aggregate surfacing**

---

1. Broof-T4 tested Resin bound aggregate product. Contractor to note that any substitutions need to meet BroofT4.
2. Sub-base: Type 3 to engineers detail
  - 2.1. Compacted thickness: minimum 75mm
3. Base: Surecell reinforcement
  - 3.1. Description: Fully connected cellular reinforcement structure infilled with well compacted 4/10mm graded crushed aggregate to BS EN12620
  - 3.2. Thickness: 52mm
4. Wearing surface: Resin bound mixed stone aggregate of 6 mm nominal size. Finished with two layers of acrylic coloured resin.
  - 4.1. Thickness: 24mm
  - 4.2. Manufacturer: SureSet UK Ltd  
A: 32 Deverill Road Trading Estate, Sutton Veny, Warminster, Wiltshire, BA12 7BZ  
T: +44 (0)1985 841 180  
E: website@sureset.co.uk
    - 4.2.1. Product reference: Natural aggregate - permeable on SureCell base to meet BroofT4.
  - 4.3. Colour: Pearl Jam

## **260C P-6: Gravel aggregate**

---

1. Wearing surface: Gravel to match P-2
  - 1.1. Thickness: Varies, refer to details.
  - 1.2. Manufacturer: SureSet UK Ltd  
A: 32 Deverill Road Trading Estate, Sutton Veny, Warminster, Wiltshire, BA12 7BZ  
T: +44 (0)1985 841 180  
E: website@sureset.co.uk
    - 1.2.1. Product reference: Natural aggregate
  - 1.3. Colour: Aztec Gold

## **Impact attenuating surfacings for play areas**

### **300 Extent of impact attenuating surfacing**

---

1. General: Lay to the impact areas shown in the relevant parts of BS EN 1176.

### **301 Extent of impact attenuating surfacing**

---

1. General: Lay impact attenuating surfacing as indicated on drawings.

#### **Associated accessories**

#### **420A Line markings to surfacing type Q22**

---

1. Description: Sport markings to the relevant British standard and Sport England guidance.
2. Manufacturer: Promain UK Ltd (Or similar)  
A: Promain House, Knowl Piece Business Park, Wilbury Way, Hitchin, Hertfordshire, SG4 0TY  
T: 01462 421 333  
E: info@promain.co.uk
  - 2.1. Product: Britannia Line Marking Paint - SKU id24013
3. Method of application: Painted
4. Setting out: As layout drawing
5. Colour: White
6. Width: 50 mm

#### **Execution - Not Used**

#### **Completion**

#### **920 Play surface testing**

---

1. Standard: To BS EN 1177 and BS 7188, where applicable.
2. Testing body: A United Kingdom Accreditation Service (UKAS) independent laboratory.
3. Timing: Within ten days of completing the surfacing works.
4. Test results: Submit.

#### **930 Documentation**

---

1. Standard: To BS EN 1176-1.
2. Submission requirements
  - 2.1. Name and contact details of installer.
  - 2.2. Date of installation.
  - 2.3. Name and contact details of manufacturer.
  - 2.4. Type/ description/ reference of products used.
  - 2.5. Manufacturer's recommended inspection and maintenance procedures to maintain safety and impact attenuating performance.
3. Manufacturer's recommended cleaning and maintenance methods, where relevant.

Ω End of Section

## Q28

# Topsoil and soil ameliorants

### System outline

#### **115A S-5: Soil system for lawn areas**

---

1. Description: Ornamental lawn areas at ground floor
2. Composition
  - 2.1. Topsoil: Imported topsoil to BS 3882 Q28/315
  - 2.2. Ameliorants: None
  - 2.3. Accessories: None

#### **115B S-6: Soil system for wildflower lawn areas**

---

1. Description: Wild flower lawn areas at ground floor
2. Composition
  - 2.1. Topsoil: Imported low fertility topsoil Q28/330
  - 2.2. Ameliorants: None
  - 2.3. Accessories: None

#### **115C S-9: Lightweight soil system for roof level lawn areas.**

---

1. Description: Ornamental lawn areas on podium
2. Composition
  - 2.1. Topsoil: Light weight topsoil Q28/340A
  - 2.2. Ameliorants: Organic compost Q28/401
  - 2.3. Accessories: None

#### **135A S-1: Soil system for ornamental planting beds**

---

1. Description: Ornamental planting areas at ground floor
2. Composition
  - 2.1. Topsoil: Imported topsoil to BS 3882 Q28/315
  - 2.2. Subsoil: Imported subsoil to BS 8601 Q28/316
  - 2.3. Ameliorants: Organic compost Q28/401
  - 2.4. Accessories: Mulch system Q28/155

#### **135B S-2: Soil system for rain gardens**

---

1. Description: For rain gardens at ground floor
2. Composition
  - 2.1. Topsoil: Imported manufactured topsoil, custom mix Q28/335
  - 2.2. Subsoil: Imported manufactured subsoil, custom mix Q28/335
  - 2.3. Ameliorants: Organic compost Q28/401
  - 2.4. Accessories: Mulch system Q28/155

#### **135C S-7: Lightweight soil system for roof level planting beds.**

---

1. Description: Roof level ornamental planting
2. Composition

- 2.1. Topsoil: Lightweight topsoil Q28/340A
- 2.2. Subsoil: Lightweight subsoil Q28/340B
- 2.3. Ameliorants: Organic compost Q28/401
- 2.4. Accessories: Mulch system Q28/155

---

**135D S-1A: Soil system for ornamental planting beds (Canal Square)**

---

1. Description: Ornamental planting areas at ground floor
2. Composition
  - 2.1. Topsoil: Imported topsoil to BS 3882 Q28/315
  - 2.2. Subsoil: Imported subsoil to BS 8601 Q28/316
  - 2.3. Ameliorants: Organic compost Q28/401
  - 2.4. Accessories: Mulch system Q28/156

---

**135E S-7: Soil system for hedging**

---

1. Description: Hedging at ground floor
2. Composition
  - 2.1. Topsoil: Imported topsoil to BS 3882 Q28/315
  - 2.2. Subsoil: Imported subsoil to BS 8601 Q28/316
  - 2.3. Ameliorants: Organic compost Q28/401
  - 2.4. Accessories: Mulch system Q28/155  
(Canal Square Q28/156)

---

**145A S-3: Soil system for tree pits**

---

1. Description: Tree pits at ground floor
2. Composition
  - 2.1. Topsoil: Imported topsoil to BS 3882 Q28/315
  - 2.2. Subsoil: Imported subsoil to BS 8601 Q28/316
  - 2.3. Ameliorants: Organic compost Q28/401
  - 2.4. Accessories: Mulch system Q28/155

---

**145B S-4: Soil system for tree pits in rain gardens**

---

1. Description: Rain garden tree pits
2. Composition
  - 2.1. Topsoil: Imported manufactured topsoil, custom mix Q28/335
  - 2.2. Subsoil: Imported manufactured subsoil, custom mix Q28/336
  - 2.3. Ameliorants: Organic compost Q28/401
  - 2.4. Accessories: Mulch system Q28/155

---

**145C S-8: Lightweight soil system for roof level tree pits.**

---

1. Description: Roof level treeplanting
2. Composition
  - 2.1. Topsoil: Lightweight topsoil Q28/340A
  - 2.2. Subsoil: Lightweight subsoil Q28/340B
  - 2.3. Ameliorants: Organic compost Q28/401
  - 2.4. Accessories: Mulch system Q28/155

## **145D S-3A: Soil system for tree pits (Canal Square)**

---

1. Description: Tree pits in canal square
2. Composition
  - 2.1. Topsoil: Imported topsoil to BS 3882 Q28/315
  - 2.2. Subsoil: Imported subsoil to BS 8601 Q28/316
  - 2.3. Ameliorants: Organic compost Q28/401
  - 2.4. Accessories: Mulch system Q28/156

## **155 Mulching and top dressing system**

---

1. Description: Ornamental planting beds and tree pits
2. Composition
  - 2.1. Material: Bark Mulch Q28/355

## **156 Mulching and top dressing system (Canal Square)**

---

1. Description: Ornamental planting beds, hedges and tree pits in compacted gravel in canal square.
2. Composition
  - 2.1. Material: CEDEC gravel to match Q23/110A
    - 2.1.1. Depth: 50mm depth.  
Lightly compacted to retain material but without impacting on rooting zone.

## **Products**

### **300 Preparation materials generally**

---

1. Purity: Free of pests and disease.
2. Foreign matter: On visual inspection, free of fragments and roots of aggressive weeds, sticks, straw, subsoil, pieces of brick, concrete, glass, wire, large lumps of clay or vegetation, and the like.
3. Contamination: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
  - 3.1. Corrosive, explosive or flammable.
  - 3.2. Hazardous to human or animal life.
  - 3.3. Detrimental to healthy plant growth.
4. Subsoil: In areas to receive topsoil or planting media, do not use subsoil contaminated with the above materials.
5. Objectionable odour: None.
6. Give notice: If any evidence or symptoms of soil contamination are discovered on the site or in topsoil or planting media to be imported.

### **305 Permitted materials**

---

1. Materials: Composted bark, Composted green/ food waste certified to PAS 100, Bark, Composted animal manures
2. Give notice: before ordering or using.
3. Declaration of compliance in accordance with BS EN 13650: Not required

### **310 Materials not permitted**

---

1. Materials: Peat, Products containing peat, River and canal dredgings

### **315 Imported topsoil to BS 3882**

---

1. Description: Ornamental Planting and Lawn areas at ground floor.

2. **Quantity:** Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
3. **Standard:** To BS 3882.
4. **Classification:** Multipurpose (pH neutral)
  - 4.1. Soil textural class to BS 3882, Figure 1: Sandy loam
5. **Source:** BOURNE AMENITY LIMITED  
A: The Wharf, Rye Road, Kent TN18 5QG  
T: 01797 252 299  
E: info@bourneamenity.co.uk
  - 5.1. Product reference: TS1 Topsoil

### **316 Imported subsoil to BS 8601**

---

1. **Description:** Ornamental Planting and Lawn areas at ground floor.
2. **Quantity:** Provide as necessary to make up any deficiency of subsoil existing on site and to complete the work.
3. **Standard:** To BS 8601
4. **Classification:** Multipurpose (pH neutral)
  - 4.1. Soil textural class to BS 3882, Figure 1: Sandy loam subsoil
5. **Source:** BOURNE AMENITY LIMITED  
A: The Wharf, Rye Road, Kent TN18 5QG  
T: 01797 252 299  
E: info@bourneamenity.co.uk
  - 5.1. Product reference: Sandy Loam Subsoil

### **330 Imported manufactured topsoil/ growing medium**

---

1. **Description:** Wildflower areas at ground floor
2. **Type:** Low fertility
  - 2.1. Soil textural class: Loamy sand
3. **Manufacturer:** BOURNE AMENITY LIMITED  
A: The Wharf, Rye Road, Kent TN18 5QG  
T: 01797 252 299  
E: info@bourneamenity.co.uk
  - 3.1. Product reference: TS5 Topsoil - Low Fertility Topsoil

### **335 Imported manufactured topsoil, custom mix**

---

1. **Description:** Rain Garden Soil
2. **Quantity:** For all rain gardens
3. **Source:** BOURNE AMENITY LIMITED  
A: The Wharf, Rye Road, Kent TN18 5QG  
T: 01797 252 299  
E: info@bourneamenity.co.uk
  - 3.1. Product reference: Rain Garden Soil
4. **Soil textural class:** Sand
5. **Reaction,** to BS 1377-3: pH Neutral.
6. **Organic matter** to PD CR 13456: Minimum 4%
7. **Nutrient content:** Minimum index values for nitrogen, phosphorus, potassium and magnesium to be as for BS 3882 multipurpose topsoil.
8. **Crumb structure:** Made up of discernible crumbs.
9. **Stone size** in any dimension (maximum): 10 mm

### **336 Imported manufactured subsoil, custom mix**

---

1. Description: Rain Garden Sub Soil
2. Quantity: For all rain gardens
3. Source: BOURNE AMENITY LIMITED  
A: The Wharf, Rye Road, Kent TN18 5QG  
T: 01797 252 299  
E: info@bourneamenity.co.uk
  - 3.1. Product reference: Loamy Sand Subsoil
4. Soil textural class: Sand
5. Reaction, to BS 1377-3: pH Neutral.
6. Organic matter to PD CR 13456: Minimum 4%
7. Nutrient content: n/a
8. Crumb structure: Made up of discernible crumbs.
9. Stone size in any dimension (maximum): 10 mm

### **340A Lightweight Topsoil**

---

1. Description: Roof level topsoil
2. Standard: BS3882:2015
3. Manufacturer: BOURNE AMENITY LIMITED  
A: The Wharf, Rye Road, Kent TN18 5QG  
T: 01797 252 299  
E: info@bourneamenity.co.uk
  - 3.1. Product reference: Intensive Topsoil - Lightweight Topsoil
4. pH (range): 7-7.9
5. Organic matter content: 6.6%

### **340B Lightweight Subsoil**

---

1. Description: Roof level subsoil
2. Standard: BS3882:2015
3. Manufacturer: BOURNE AMENITY LIMITED  
A: The Wharf, Rye Road, Kent TN18 5QG  
T: 01797 252 299  
E: info@bourneamenity.co.uk
  - 3.1. Product reference: Intensive Subsoil - Lightweight Subsoil
4. pH (range): 7-7.9
5. Organic matter content: 0.5%

### **355 Bark Mulch**

---

1. Description: FOR TOP DRESSING/ MULCHING
2. Type: Fine grade bark
3. Source: Melcourt Industries Limited,  
A: Boldridge Brake, Long Newnton, Tetbury, Gloucestershire. GL8 8RT  
T: +44(0)1666 502711
  - 3.1. Product reference: Amenity Bark Mulch™

### **401 Organic compost**

---

1. Description: For all planting areas.

2. Manufacturer/ source: Dalefoot Composts  
Dalefoot Farm, Heltondale, Nr Penrith, Cumbria CA10 2QL  
T: 01931 713281  
E: sales@dalefootcomposts.co.uk
  - 2.1. Product reference: Wool Compost Double Strength DSWOOL1
3. Standard: In accordance with the Fertilizer Industry Assurance Scheme (FIAS)
4. Purpose: General purpose fertilizer
5. Type: Organic compost & soil conditioner
6. Availability to plants: Slow-release

## Execution

### 610 Topsoil & Subsoil analysis

---

1. Soil to be analysed: Imported topsoil & Manufactured topsoil
2. Soil analyst: Contractors Choice
3. Samples: Collect in accordance with BS 3882.
4. Submit
  - 4.1. Declaration of analysis: In accordance with BS 3882, clause 6 and Table 1.
  - 4.2. Additional analysis: Chemical analysis & Potentially toxic elements (PTEs)
  - 4.3. Report detailing soil analyst's recommendations and suitability for use in the intended location.

### 620 Importing topsoil

---

1. Give notice: Before stripping topsoil for transfer to site.
  - 1.1. Notice period: 5 days

### 625 Sample loads

---

1. Description: FOR IMPORTED TOPSOIL & COMPOST
2. Deliver to site a sample load: of 5 kg
3. Give notice: Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
  - 3.1. Notice period: 7 days

### 630 Documentation for imported topsoil

---

1. Description: FOR IMPORTED TOPSOIL
2. Timing: Submit at handover.
3. Contents
  - 3.1. Full description of all soil components.
  - 3.2. Record of source for all soil components.
  - 3.3. Record drawings showing the location and depth of all soils by type and grade.
  - 3.4. Declaration of analysis: in accordance with BS 3882, clause 6 and Table 1.
4. Number of copies: Two

### 635 Documentation for compost and composted materials

---

1. Description: FOR COMPOST
2. Timing: Submit at handover.
3. Contents

- 3.1. Full description of all compost components.
  - 3.2. Record of source for all compost components.
  - 3.3. Analyst's report for each test carried out.
  - 3.4. Declaration of compliance: in accordance with PAS 100 and BSI PD CR 13456.
  - 3.5. Quality Compost Protocol certification: Not required
4. Number of copies: Two

## **650 Notice**

---

1. Give notice before
  - 1.1. Setting out.
  - 1.2. Spreading topsoil.
  - 1.3. Applying herbicide.
  - 1.4. Applying fertilizer.
  - 1.5. Visiting site during maintenance period.
2. Period of notice: 3 working days

## **655 Mechanical tools**

---

1. Restrictions: Do not use within 100 mm of tree and plant stems. Do not damage adjacent planting.

## **660 Grading subsoil for:**

---

1. Description: ORNAMENTAL PLANTING BEDS & GRASSED AREAS
2. Standard: In accordance with BS 8601.
3. General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
4. Areas of thicker topsoil: Excavate locally.
5. Avoid compaction.
6. Excess subsoil: Remove.

## **665 Subsoil surface preparation for:**

---

1. Description: ORNAMENTAL PLANTING BEDS & GRASSED AREAS
2. Standard: In accordance with BS 3882.
3. General: Excavate and/ or place fill to required profiles and levels, as section D20.
4. Loosening
  - 4.1. When ground conditions are sufficiently dry to allow breaking up of soils, loosen thoroughly to specified depth
    - 4.1.1. Light and noncohesive subsoils: 300 mm
    - 4.1.2. Stiff clay and cohesive subsoils: 450 mm
    - 4.1.3. Rock and chalk subgrades: Lightly scarify to promote free drainage.
  - 4.2. Wet conditions: Do not loosen subsoils.
5. Stones: Immediately before spreading topsoil, remove stones larger than 20 mm.
6. Remove from site: Arisings, contaminants, debris & builders rubble

## **675 Preparation of undisturbed topsoil**

---

1. Standard: In accordance with BS 4428.
  - 1.1. Grading and cultivation: Category C
2. Hard ground: Break up thoroughly.
3. Clearing: Remove visible roots and large stones with a diameter greater than 50 mm.

4. Areas covered with turf or thick sward: Plough or dig over to full depth of topsoil.
5. Fallow period (minimum): One month
  - 5.1. Weed control: At appropriate times treat with a suitable translocated nonresidual herbicide.

### **680 Surplus topsoil to be retained**

---

1. Generally: Spread and level on site:
  - 1.1. Locations: Any areas where topsoil is required for new planting
  - 1.2. Protected areas: Do not raise soil level within root spread of trees that are to be retained.

### **685 Surplus materials to be removed**

---

1. Topsoil removal from site: Topsoil remaining after completion of all landscaping work
2. Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.

### **700 Grading of topsoil**

---

1. Topsoil condition: Reasonably dry and workable.
2. Contours: Smooth and flowing, with falls for adequate drainage.
  - 2.1. Hollows and ridges: Not permitted.
3. Give notice: If required levels cannot be achieved by movement of existing soil.

### **705 Handling topsoil**

---

1. Standard: In accordance with BS 3882.
2. Aggressive weeds: Give notice and obtain instructions before moving topsoil.
3. Plant: Select and use plant to minimize disturbance, trafficking and compaction.
4. Contamination: Do not mix topsoil with:
  - 4.1. Subsoil, stone, hardcore, rubbish or material from demolition work.
  - 4.2. Other grades of topsoil.
5. Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
6. Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall, or when the moisture content is greater than the plastic limit.

### **710 Spreading topsoil on:**

---

1. Description: ORNAMENTAL GRASS AREAS, ORNAMENTAL PLANTING BEDS & TREE PITS
2. Standard: In accordance with BS 3882.
3. Temporary roads/ surfacing: Remove before spreading topsoil.
4. Layers
  - 4.1. Depth (maximum): 150 mm.
  - 4.2. Gently firm each layer before spreading the next.
5. Depth after firming and settlement: Ornamental grass areas: 200mm  
Ornamental Planting: 300mm  
Tree Planting Pits 450mm
6. Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

### **715 Loose tipping of topsoil**

---

1. Standard: In accordance with BS 3882.

2. **General:** Do not firm, consolidate or compact topsoil when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.

### **718 Final cultivation**

---

1. **Description:** FOR PLANTING BEDS & TURFING
2. **Compacted topsoil:** Break up to full depth.
3. **Tilth:** Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
4. **Depth:** 150 mm
5. **Particle size (maximum):** 10 mm
6. **Timing:** After grading and fertilizing, and within a few days before planting
7. **Weather and ground conditions:** Suitably dry.
8. **Surface:** Leave regular and even.
9. **Levels:** 25 mm above adjoining paving or kerbs,  
50 mm above adjoining lawns  
Minimum 150 mm below dpc of adjoining buildings
10. **Undesirable material brought to the surface**
  - 10.1. Remove visible weeds.
  - 10.2. Remove roots and large stones with any dimension exceeding 20 mm.

### **720 Finished levels of topsoil after settlement**

---

1. In relation to adjoining paving, kerbs or hard surfaces: Flush
2. In relation to dpc of adjoining buildings: Not less than 150 mm below.
3. In relation to adjacent grass areas: 25 mm above
4. **Seeded areas:** Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.
5. **Sportsfields:** To even levels and within the following permitted deviations:
  - 5.1. From levels or gradients shown on drawings:  $\pm 75$  mm.
  - 5.2. From line between boning rods 30 m apart:  $\pm 25$  mm.
6. Within root spread of existing trees and shrubs to be retained: Do not dig or cultivate.
7. Adjoining soil areas: Marry in.
8. Thickness of turf or mulch: Included.

### **730 Green roof growing medium installation**

---

1. **Handling:** Minimize.
  - 1.1. **Conditions:** Handle in the driest condition possible. Do not handle or install when wet or frozen.
2. **Layers**
  - 2.1. **Depth (maximum):** 150 mm.
  - 2.2. **Sequence:** Gently firm each layer before spreading the next.

### **810 Applying compost**

---

1. **Description:** ORNAMENTAL PLANTING BEDS & TREE PITS
2. **Application rate for trees and shrubs:** 50 mm thick
  - 2.1. **Timing:** Apply prior to cultivation.
3. **Application rate for grass:** n-a
  - 3.1. **Timing:** Apply prior to cultivation.

4. Application rate for planters: 50 mm-thick layer
  - 4.1. Timing: Apply prior to cultivation.
5. Other requirements: Submit details of recent chemical and physical analysis before ordering

### **825 Applying fertilizer to proposed grass areas**

---

1. Description: TO TURFED AREAS (EXCEPT WILDFLOWER MEADOWS)
2. Application: Before final cultivation and three to five days before seeding/ turfing.
3. Coverage:
4. Spread evenly, in transverse directions.
  - 4.1. Rate: To manufacturer's recommendations

### **845 Applying loose mulch (Bark Mulch)**

---

1. Description: FOR PLANTING BEDS & TREE PITS
2. Timing: Immediately after planting
3. Preparation: Clear all weeds. Ensure that soil is thoroughly moistened, applying water where necessary
4. Coverage of mulch (minimum)
  - 4.1. Planting beds (depth): 50 mm depth
  - 4.2. Trees: 50 mm depth
  - 4.3. Container planting: 50 mm depth
5. Finished level of mulch: 30 mm below adjacent grassed or paved areas

### **846 Applying loose mulch (Gravel Mulch - Canal Square)**

---

1. Description: FOR PLANTING BEDS & TREE PITS IN CANAL SQUARE
2. Timing: Immediately after planting
3. Preparation: Clear all weeds. Ensure that soil is thoroughly moistened, applying water where necessary
4. Coverage of mulch (minimum)
  - 4.1. Planting beds (depth): 50 mm depth
  - 4.2. Trees: 50 mm depth
  - 4.3. Container planting: n/a
5. Finished level of mulch: 30 mm below adjacent grassed or paved areas

## **Completion**

### **905 Applying maintenance fertilizer to soil**

---

1. Description: TO PLANTING BEDS & TREE PITS
2. Duration: Carry out the following operations from completion of seeding/ turfing until the end of the rectification period.
3. Time of year: March or April
4. Application: Evenly spread, carefully incorporating below mulch materials.
5. Rate: To manufacturer's recommendations

### **910 Applying maintenance fertilizer to grass swards**

---

1. Description: TO ALL GRASSED AREAS EXCEPT WILDFLOWER MEADOWS
2. Duration: Carry out the following operations from completion of seeding/turfing until the end of the rectification period.

3. Time of year: March or April
4. Application: Evenly spread
5. Rate: To manufacturer's recommendations

## **920 Applying mulch**

---

1. Timing: At end of the rectification period
2. Watering: Ensure that soil is thoroughly moistened prior to mulching, applying water where necessary.
3. Planting beds: Re-mulch.
  - 3.1. Depth (minimum): 50 mm
4. Trees: Remulch.
  - 4.1. Depth (minimum): 50 mm
5. Container planting: Remulch.
  - 5.1. Depth (minimum): 50 mm

Ω End of Section

## Q30 Seeding/ turfing

### General information/requirements

#### 115 Seeded and turfed areas

---

1. **Growth and development:** Healthy, vigorous grass sward, free from the visible effects of pests, weeds and disease.
2. **Appearance:** A closely knit, continuous ground cover of even density, height and colour.

#### 120 Climatic conditions

---

1. **General:** Carry out the work while soil and weather conditions are suitable.

#### 145 Watering

---

1. **Quantity:** Wet full depth of topsoil.
2. **Application:** Even and without displacing seed, seedlings or soil.
3. **Frequency:** As necessary to ensure the establishment and continued thriving of all seeding/turfing.

#### 150 Water restrictions

---

1. **Timing:** If water supply is or is likely to be restricted by emergency legislation do not carry out seeding/turfing until instructed. If seeding/turfing has been carried out, obtain instructions on watering.

#### 160 Notice

---

1. Give notice before
  - 1.1. Setting out.
  - 1.2. Applying herbicide.
  - 1.3. Applying fertilizer.
  - 1.4. Preparing seed bed.
  - 1.5. Seeding or turfing.
  - 1.6. Visiting site during maintenance period.
2. Period of notice: 1 week

#### 170 Setting out

---

1. **Boundaries:** Mark clearly.
2. **Delineation:** In straight lines or smoothly flowing curves as shown on drawings.

### Preparation

#### 212 Seed bed cleaning before sowing

---

1. **Description:** ALL GRASSED AREAS
2. **Operations:** Remove weeds by hand weeding and hoeing.

#### 250 Soil requirements

---

1. Type
  - 1.1. **Seeded areas:** Wildflower, as section Q28.
  - 1.2. **Turfed areas:** Soil for grass swards, as section Q28

- 1.3. Reinforced grass areas: Manufacturers soil system as Q30/361A

## Seeding

### 361A Reinforced grass planting systems

---

1. Manufacturer: [ABG](#)
  - 1.1. Contact details
    - 1.1.1. Address: Unit E7  
Meltham Mills Industrial Estate  
Meltham Mills Road  
Meltham  
West Yorkshire  
HD9 4DS
    - 1.1.2. Telephone: +44 (0)1484 852096
    - 1.1.3. Web: [www.abgltd.com](http://www.abgltd.com)
    - 1.1.4. Email: [enquiries@abgltd.com](mailto:enquiries@abgltd.com)
  - 1.2. Product reference: [ABG Advanced Turf](#)
2. Site preparation
  - 2.1. Fertilizer: ABG BF1 Installation Fertiliser.
3. Reinforced root zone growing medium: 200 mm thick layer of ABG Advanced Turf ATS400/B Netlon Mesh Element reinforced root zone.
4. Turf: ABG BT1 sandy loam grown natural turf.
5. Surface reinforcement layer
  - 5.1. Type: Plastics mesh reinforcement.
6. Sub-base layer: Required, DoT Type 3 to engineers specification
7. Density: 0.905–0.908 g/cm<sup>3</sup>.
8. TensileStrength: 3.3 kN/m.
9. Blend: 5.4 kg/m<sup>3</sup>.

## Turfing

### 400 Cultivated turf

---

1. Description: FOR ALL GRASSED AREAS
2. Supplier: Lindum Turf Ltd,  
A: West Grange, Thorganby, York YO19 6DJ  
T: 01904 448675.  
E: [lindum@turf.co.uk](mailto:lindum@turf.co.uk)
  - 2.1. Product reference: LT8 Festival Plus turf
3. Properties of soil used for turf production: Peat-free, well drained sandy loam

### 401 Cultivated wildflower turf

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1. Description: Wildflower areas
2. Supplier: Wildflower Turf Ltd.  
Ashe Warren Farm, Overton, Basingstoke, Hampshire, RG25 3AW  
T: 01256 771222  
E: [wildflower@wildflowerturf.co.uk](mailto:wildflower@wildflowerturf.co.uk)
  - 2.1. Product reference: WFT–Shade-41 - Shade Tolerant Wildflower Turf
3. Properties of soil used for turf production: Peat-free, well drained sandy loam

## 420 Delivery and storage

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1. Timing: Lay turf with minimum possible delay after lifting. If delay occurs, lay turf out on topsoil and keep moist.
2. Frosty weather or waterlogged ground: Do not lift turf.
3. Delivery: Arrange to avoid need for excessive stacking.
4. Stacking height (maximum): 1 m.
5. Dried out or deteriorated turf: Do not use.
6. Certification
  - 6.1. Standard: To BS 3969.
  - 6.2. Declaration: Species mix, including percentage of specified species

## 430 Turfing generally

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1. Time of year: Autumn or early winter ( To be agreed)
2. Timing of laying
  - 2.1. Spring and summer: Within 18 hours of delivery.
  - 2.2. Autumn and winter: Within 24 hours of delivery.
3. Weather conditions: Do not lay turf when persistent cold or drying winds are likely to occur or soil is frost bound, waterlogged or excessively dry.
4. Working access: Planks laid on previously laid turf. Do not walk on prepared bed or newly laid turf.
5. Jointing: Laid with broken joints, well butted up. Do not stretch turf.
6. Edges: Whole turfs, trimmed to a true line.
7. Adjusting levels: Remove high spots and fill hollows with fine soil.
8. Consolidating: Lightly and evenly firm as laying proceeds to ensure full contact with substrate. Do not use rollers.
9. Dressing, brushed well in to completely fill all joints: Sand and topsoil mix
10. Watering: Thoroughly water completed turf immediately after laying. Check that water has penetrated into the soil below.

## 440 Turfing on banks exceeding 30° slope

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1. Turf configuration: Diagonal or horizontal.
2. Securing turfs
  - 2.1. Fixings: Galvanized wire pins, bent or hairpin pattern, 200 mm long x 4 mm diameter
  - 2.2. Frequency of fixings: Every second row
3. Removal of fixings: When turf is thoroughly self anchored by its roots. Make good any damage to grass until area is accepted

## 450 Trimming turf

---

1. Newly planted tree pits: Neatly cut away around individual trees.
  - 1.1. Diameter: 1000 mm
  - 1.2. Tree pit surface: Respread existing mulch

## Protecting/cutting

## 510 Protective fencing

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1. Fencing type: Chestnut pale fencing to BS 1722-4
  - 1.1. Height: 1.1 m
2. Erection: On completion of seeding/ turfing.

3. Removal: After grass is well established. Fencing will remain the property of the Contractor

### **530 First cut of grassed areas**

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1. Timing: When grass is reasonably dry.
  - 1.1. Height of initial growth: 40-75 mm
2. Preparation
  - 2.1. Debris and litter: Remove.
  - 2.2. Stones and earth clods larger than 25 mm in any dimension: Remove
3. Height of first cut: 40 mm
4. Mower type: Rotary
5. Arisings: Remove from site

### **550 Areas not to be cut**

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1. Do not cut: Meadow grass containing wildflowers

### **590 Cleanliness**

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1. Soil and arisings: Remove from hard surfaces.
2. General: Leave the works in a clean, tidy condition at Completion and after any maintenance operations.

## **Maintenance**

### **610 Failures of seeding/ turfing**

---

1. Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
2. Defective materials or workmanship: Areas that have failed to thrive.
  - 2.1. Exclusions: Theft or malicious damage.
3. Method of making good: Recultivation and reseeding/ returfing.
4. Timing of making good: The next suitable planting season

### **620 Maintaining**

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1. Description: GENERAL GRASSED AREAS
2. Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
3. Maximum height of growth at any time: 75 mm
4. Preparation: Before each cut remove all litter and debris.
5. Cutting: As and when necessary to a height of 25 mm.
  - 5.1. Arisings: Remove
6. Bulb planting areas: Do not cut until bulb foliage has died down.
7. Trimming: All edges.
  - 7.1. Arisings: Remove.
8. Weed control: Substantially free of broad leaved weeds.
  - 8.1. Method: Application of a suitable selective herbicide.
9. Stones brought to the surface: Remove regularly.
  - 9.1. Size: Exceeding 25 mm in any dimension.
10. Areas of settlement: Make good.
11. Watering: As required to establish lawn

## **650 Maintaining grassed areas with perennial wildflowers**

---

1. Duration: Carry out the following operations from completion of seeding/ turfing until: the end of the rectification period.
2. Preparation: Before each cut remove all litter and debris.
3. Height and frequency of cut in first growing season
  - 3.1. Time of first cut: June/ July
  - 3.2. Height of first cut: 75 mm
  - 3.3. Frequency of subsequent cutting (minimum): Every 6-8 weeks until autumn
  - 3.4. Height of growth permitted (maximum): n/a
4. Height and frequency of cut in second growing season
  - 4.1. Time of cut: Single cut in October
  - 4.2. Height of cut: 75 mm
5. Trimming: All edges.
  - 5.1. Arisings: Remove.
6. Watering: As required to establish lawn

Ω End of Section

## Q31 External planting

### General information/ requirements

#### 112 Site clearance generally

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1. General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
2. Stones: Remove those with any dimension exceeding 50 mm.
3. Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
4. Vegetation: Clear scrub to ground level and remove arisings; retain and protect trees indicated on drawings
5. Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
6. Additional requirements: n/a

#### 118 Soil conditions

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1. Soil for cultivating and planting: Moist, friable and (except in aquatic/ marginal planting) not waterlogged.
2. Frozen or snow covered soil: Give notice before planting. Provide additional root protection. Prevent planting pit sides and bases and backfill materials from freezing.

#### 120 Climatic conditions

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1. General: Carry out the work while soil and weather conditions are suitable.
  - 1.1. Strong winds: Do not plant.

#### 125 Times of year for planting

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1. Deciduous trees and shrubs: Late October to late March.
2. Conifers and evergreens: September/ October or April/ May.
3. Herbaceous plants (including marginal): September/ October or March/ April.
4. Container grown plants: At any time if ground and weather conditions are favourable.
  - 4.1. Watering and weed control: Provide as necessary.
5. Dried bulbs, corms and tubers: September/ October.
6. Colchicum (crocus): July/ August.
7. Green bulbs: After flowering in spring.
8. Wildflower plugs: Late August to mid November or March/ April.
9. Aquatic plants: May/ June or September/ October.

#### 130 Mechanical tools

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1. Restrictions: Do not use within 100 mm of tree and plant stems.

#### 145 Watering

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1. Quantity: Wet full depth of topsoil.
2. Application: Even and without damaging or displacing plants or soil.
3. Frequency: As necessary to ensure establishment and continued thriving of planting.

## 150 Water restrictions

---

1. **General:** If water supply is or is likely to be restricted by emergency legislation, do not carry out planting until instructed. If planting has been carried out, obtain instructions on watering.

## 160 Notice

---

1. Give notice before
  - 1.1. Setting out.
  - 1.2. Applying herbicide.
  - 1.3. Applying fertilizer.
  - 1.4. Delivery of plants/ trees.
  - 1.5. Planting shrubs.
  - 1.6. Planting trees into previously dug pits.
  - 1.7. Watering.
  - 1.8. Visiting site during maintenance period.
2. Period of notice: One week

## 170 Soil requirements

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1. Type
  - 1.1. Planted beds: Planting bed soil system, as section Q28
  - 1.2. Tree pits, shrub pits and other backfilling: Plant pit backfilling soil system, as section Q28
  - 1.3. External container planting: Container planting growing media system, as section Q28
  - 1.4. Mulch applied after planting: Mulching and top dressing system, as section Q28

## 200 Plants/ Trees – general

---

1. **Condition:** Materially undamaged, sturdy, healthy and vigorous.
2. **Appearance:** Of good shape and without elongated shoots.
3. **Hardiness:** Grown in a suitable environment and hardened off.
4. **Health:** Free from pests, diseases, discoloration, weeds and physiological disorders.
5. **Budded or grafted plants:** Bottom worked.
6. **Root system and condition:** Balanced with branch system.
  - 6.1. **Standard:** The National Plant Specification
7. **Species:** True to name.
8. **Origin/ Provenance:** Contractors choice - submit proposals for approval.

## 215 Plants/ Trees – specification criteria

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1. **Name, forms, dimensions, provenance and other criteria:** As scheduled and defined in the National Plant Specification (available on CS Design Software Limited's website).

## 225 Bulbs/ Corms/ Tubers

---

1. **Condition:** Firm, entire, not dried out or shrivelled.
2. **Health:** Free from pests, diseases and fungus.
3. **Handling:** Remove from packaging immediately.
4. **Storage:** Permitted only when necessary.
  - 4.1. **Location:** Well ventilated, dark, covered, rodent proof container, away from exhausts and fruit.
  - 4.2. **Duration:** Minimum period.

4.3. Temperature: 18-21°C.

### **235 Container grown plants/ Trees**

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1. **Growing medium:** With adequate nutrients for plants to thrive until permanently planted.
2. **Plants:** Centred in containers, firmed and well watered.
3. **Root growth:** Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.
4. **Hardiness:** Grown in the open for at least two months before being supplied.
5. **Containers:** With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

### **245 Labelling and information**

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1. **General:** Provide each plant/ tree or group of plants/ trees of a single species or cultivar with supplier's labelling for delivery to site, showing:
  - 1.1. Full botanical name.
  - 1.2. Total number.
  - 1.3. Number of bundles.
  - 1.4. Part bundles.
  - 1.5. Supplier's name.
  - 1.6. Employer's name and project reference.
  - 1.7. Plant specification, in accordance with scheduled National Plant Specification categories.
2. **Additional information:** Submit on request: Country of origin.

### **256 Plants/ Trees inspection at supplier's premises**

---

1. **Types/ Species:** All tree species
2. **Predelivery inspection:**
  - Give minimum 2 weeks notice for inspection and selection of trees in the nursery.
  - Costs for visit to Nursery to be covered by contractor.
3. **Labelling:** Identify inspected plants/ trees as reserved for use on this project.

### **260 Plant/ Tree substitution**

---

1. **Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering:** Submit alternatives, stating:
  - 1.1. Price.
  - 1.2. Difference from specified plants/ trees.
2. **Approval:** Obtain before making any substitution.

### **265 Plant handling, storage transport and planting**

---

1. **Standard:** To CPSE 'Handling and establishing landscape plants'.
2. **Frost:** Protect plants from frost.
3. **Handling:** Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
4. **Plant packaging:** Coextruded polyethylene bags with black interior and white exterior
5. **Packaging of bulk quantities:** Pallets or bins sealed with polyethylene and shrink wrapped
6. **Planting:** Upright or well balanced with best side to front.

## 280 Treatment of tree wounds

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1. Cutting: Keep wounds as small as possible.
  - 1.1. Cut cleanly back to sound wood using sharp, clean tools.
  - 1.2. Leave branch collars. Do not cut flush with stem or trunk.
  - 1.3. Set cuts so that water will not collect on cut area.
2. Fungicide/ Sealant: Do not apply unless instructed.

## 285 Protection of existing grass

---

1. General: Protect areas affected by planting operations using boards/ tarpaulins.
  - 1.1. Excavated or imported material: Do not place directly on grass.
  - 1.2. Duration: Minimum period.

## 290 Surplus material

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1. Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.

## Plant containers

### 296A W-5 Timber raised planter

---

1. Materials generally: To BS EN 942.
  - 1.1. Manufacturer: Suregreen  
A: Viridis House, Toppesfield Road, Finchingfield, Essex, CM7 4NZ  
T: 01376 503869  
E: sales@sure-green.com
    - 1.1.1. Product: Green Treated Railway Sleeper | 2.4m x 200mm x 100mm
  - 1.2. Preservative treatment: As section Z12 and Wood Protection Association Commodity Specification C4.
    - 1.2.1. Type: To provide a 30 year service life
  - 1.3. Finish: Unfinished
  - 1.4. Adhesive: n/a
  - 1.5. Joinery workmanship: As section Z10.
2. Fixings: Coach bolts As section Z20.
  - 2.1. Material/ Finish: Stainless steel
3. Height: 5A - 900mm high  
5B - 300mm high
4. Lining/ Reservoir: Geotextile sheet
5. Accessories:
  - 50x50mm timber stakes as detail drawing to provide support
  - Fresh concrete races to support sleeper

## Preparation of planting beds/ planting materials

### 305 Weed control

---

1. Description: FOR INVASIVE NON-NATIVE WEEDS
2. Locations: All planting areas
3. General: Prevent weeds from seeding and perennial weeds from becoming established, by hand weeding.

## Planting shrubs/ herbaceous plants/ bulbs

### 400 Random plant layout

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1. Description: TO ALL BEDS
2. Spacing: Random groups of 3-11 plants of the same species.
3. Density: As plant schedule

### 405 Shrub planting pits

---

1. Timing: Excavate 1-2 days (maximum) before planting.
2. Sizes: Wide enough to accommodate roots when fully spread and 75 mm deeper than root system
3. Pit bottom improvement Break up to a depth of 150 mm, incorporating soil ameliorant/ conditioner at 50 g/m<sup>2</sup>.

### 420 Climbing plants

---

1. Planting: 150 mm clear of supporting structure (e.g. wall/ fence) with roots spread outward.
  - 1.1. Branches: Lightly secured to supports.
2. Climber supports: Green plastics coated steel wire
  - 2.1. Base height: 300 mm above ground
  - 2.2. Extent: As drawings
  - 2.3. Centres: 300 mm
  - 2.4. Distance from wall: 50 mm
3. Fixings: Stainless steel screw eyes
  - 3.1. Centres: 1 m

### 435 Climbing plants used as ground cover

---

1. Planting
  - 1.1. Canes or other supports: Remove.
  - 1.2. Arrangement: Spread stems.
2. Fixing: Pinned to ground to ensure good contact.

### 445 Planting bulbs/ Corms/ Tubers

---

1. Depth: Top of bulb/ corm/ tuber at a depth of approximately twice its height, base in contact with bottom of hole.
2. Backfilling: Finely broken soil. Lightly firm to existing ground level.
3. Naturalized planting in existing grassed areas
  - 3.1. Scattering: Random. Plant bulbs/ corms/ tubers where they fall.
  - 3.2. Planting: Neatly remove a plug of turf and replace after planting.

### 470 Formal hedges

---

1. Shrubs for hedges: Consistent in species, cultivar and clone to ensure a uniform hedge.
2. Planting: In trenches large enough to take full spread of roots. Set out plants evenly.

### 480 After planting

---

1. Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
2. Firming: Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.

3. Top dressing: Mulching and top dressing system, as section Q28
  - 3.1. Depth: 50 mm

## Planting trees

### 500 Tree planting

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1. Standard: Prepare trees and transplant in accordance with BS 8545

### 505 Tree pits

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1. Sizes: Twice the width of the root spread, and 1.5 times the depth of the root system
2. Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
3. Excavated material: Remove arisings
4. Pit bottoms: Excavate with slightly raised centre: Break up base to a depth of 200 mm.
  - 4.1. Treatment: Soil ameliorant worked into pit bottoms
5. Pit sides: Scarify.
6. Backfilling material: Proprietary tree backfilling material, as section Q28

### 510A Tree root barrier

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1. Locations: Wherever the installed rootball will be within 2 m of a building foundation, paved area or will be within 3 m of an existing underground service route.
2. Manufacturer: [GreenBlue Urban Ltd](#)
  - 2.1. Contact details
    - 2.1.1. Address: Northpoint  
Compass Park  
Junction Road  
Bodiam  
East Sussex  
TN32 5BS
    - 2.1.2. Telephone: +44 (0)1580 830800
    - 2.1.3. Web: [www.greenblue.com](http://www.greenblue.com)
    - 2.1.4. Email: [hello@greenblueurban.com](mailto:hello@greenblueurban.com)
  - 2.2. Product reference: [ReRoot Root Barriers \(RER600A\)](#)
3. Roll depth: 600 mm.
4. Profile: Ribbed.

### 510B Tree root barrier (Canal Edge)

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1. Locations: For all tree planting areas adjacent to the canal steps.
2. Manufacturer: [GreenBlue Urban Ltd](#)
  - 2.1. Contact details
    - 2.1.1. Address: Northpoint  
Compass Park  
Junction Road  
Bodiam  
East Sussex  
TN32 5BS
    - 2.1.2. Telephone: +44 (0)1580 830800
    - 2.1.3. Web: [www.greenblue.com](http://www.greenblue.com)
    - 2.1.4. Email: [hello@greenblueurban.com](mailto:hello@greenblueurban.com)

- 2.2. Product reference: [ReRoot Root Barriers \(RER1000A\)](#)
- 3. Roll depth: 1000 mm.
- 4. Profile: Ribbed.

## 512 Tree irrigation rings

---

- 1. Locations: All tree pits
- 2. Manufacturer: [GreenBlue Urban Ltd](#)
  - 2.1. Contact details
    - 2.1.1. Address: Northpoint  
Compass Park  
Junction Road  
Bodiam  
East Sussex  
TN32 5BS
    - 2.1.2. Telephone: +44 (0)1580 830800
    - 2.1.3. Web: [www.greenblue.com](http://www.greenblue.com)
    - 2.1.4. Email: [hello@greenblueurban.com](mailto:hello@greenblueurban.com)
  - 2.2. Product reference: [RootRain Civic \(RRCIVIC1A\)](#)
- 3. Hose
  - 3.1. Material: PE-HD.
  - 3.2. Colour: Black.
  - 3.3. Dimensions: 3 m x 60 mm.
- 4. Filling tube: PE-HD grille inlet with powder-coated aluminium cap and retainer chain.
- 5. Inlet: 95 mm diameter.
- 6. Accessories: None.

## 526 Root ball securing frames

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- 1. Manufacturer: [GreenBlue Urban Ltd](#)
  - 1.1. Contact details
    - 1.1.1. Address: Northpoint  
Compass Park  
Junction Road  
Bodiam  
East Sussex  
TN32 5BS
    - 1.1.2. Telephone: +44 (0)1580 830800
    - 1.1.3. Web: [www.greenblue.com](http://www.greenblue.com)
    - 1.1.4. Email: [hello@greenblueurban.com](mailto:hello@greenblueurban.com)
  - 1.2. Product reference: [ArborGuy - drive-in \(SASLCB\)](#)
- 2. Tensioning devices: Galvanized steel cables and ratchet tensioner.
- 3. Anchors
  - 3.1. Type: Drive-in ground anchors.
- 4. Accessories: Drive rod - large. Large tool kit. J-Hook tensioner.
- 5. Components: 6 x 1000 mm galvanized steel wire and 35 mm x 12 m webbing strap.
- 6. Anchor: Composite.

## 527 Root ball securing frames (roof level)

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1. Manufacturer: [GreenBlue Urban Ltd](#)
  - 1.1. Contact details
    - 1.1.1. Address: Northpoint  
Compass Park  
Junction Road  
Bodiam  
East Sussex  
TN32 5BS
    - 1.1.2. Telephone: [+44 \(0\)1580 830800](tel:+44(0)1580830800)
    - 1.1.3. Web: [www.greenblue.com](http://www.greenblue.com)
    - 1.1.4. Email: [hello@greenblueurban.com](mailto:hello@greenblueurban.com)
  - 1.2. Product reference: [ArborGuy - AnchorPlate \(SASAP10A\)](#)
2. Tensioning devices: Galvanized steel cables and ratchet tensioner.
3. Anchors
  - 3.1. Type: Galvanized mild steel deadman anchors.
  - 3.2. Number: 3.
4. Components: 6 x 1100 mm galvanized steel wire and 35 mm x 8 m webbing strap.
5. Depth: 1000 mm RootSpace depth.

## 576 Tree pit surfacing – loose fill mulch

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1. Surfacing material: Bark Mulch, as section Q28
2. Area: Full extent of tree pit surface
3. Depth: 50 mm
4. Watering: Water soil thoroughly before laying.
5. Installation: Ensure the base of the tree stem is kept free from loose filled material.

## 577 Tree pit surfacing – loose fill (Canal Square)

---

1. Surfacing material: Gravel Mulch, as section Q28
2. Area: Full extent of tree pit surface
3. Depth: 50 mm
4. Watering: Water soil thoroughly before laying.
5. Installation: Ensure the base of the tree stem is kept free from loose filled material.

## Woodland/ matrix/ buffer zone planting - Not Used

## Protecting/ maintaining/ making good defects

### 710 Maintenance

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1. Duration: Carry out the operations in the following clauses from completion of planting until the end of the rectification period.
2. Frequency of maintenance visits: In accordance with the agreed maintenance schedule

### 720 Failures of planting

---

1. Defects due to materials or workmanship not in accordance with the Contract: Plants/ trees/ shrubs that have failed to thrive.
  - 1.1. Exclusions: Theft or malicious damage after completion.

- 1.2. Rectification: Replace with equivalent plants/ trees/ shrubs.
2. Replacements: To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
3. Timing of making good: During the next suitable planting season

#### **740 Cleanliness**

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1. Soil and arisings: Remove from hard surfaces and grassed areas.
2. General: Leave the works in a clean tidy condition at completion and after any maintenance operations.

#### **750 Planting maintenance generally**

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1. Weed control: Maintain weed free area around each tree and shrub.
  - 1.1. Diameter (minimum): The larger of 1 m or the surface of original planting pit.
  - 1.2. Keep planting beds clear of weeds: By hoeing and maintaining full thickness of mulch
2. Planted areas: Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.
3. Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
4. Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
5. Trees: Spray crown when in leaf during warm weather.
  - 5.1. Timing: After dusk.
6. Tree accessories: Check condition of stakes, ties, guys, guards and irrigation and ventilation systems.
  - 6.1. Broken or missing items: Replace.
  - 6.2. Loose stakes: Re-firm in the ground or replace as necessary to provide support to the tree.
  - 6.3. Loose guys: Re-firm anchor points and adjust as necessary to provide support to the tree.
  - 6.4. Ties: Adjust to accommodate growth and prevent constriction or abrasion.
  - 6.5. Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
  - 6.6. Frequency of checks: At each scheduled maintenance visit
7. Watering: As required for healthy establishment, depending on weather conditions

#### **760 Planting maintenance – pruning**

---

1. General: Prune to promote healthy growth and natural shape.
  - 1.1. Dead, dying, diseased wood and suckers: Remove.
  - 1.2. Timing: As appropriate to the species
  - 1.3. Trees: Favour a single central leading shoot.
2. Arisings: Remove.

#### **780 Maintenance instructions**

---

1. General: Before end of the maintenance period, submit printed instructions recommending procedures to be established by the Employer for maintenance of the planting work for one full year: Provide a schedule of any ongoing maintenance problems experienced during the rectification period.

#### **790 Final mulching**

---

1. Timing: At end of the maintenance period.
2. Watering: Ensure that soil is thoroughly moistened prior to remulching, applying water where necessary.

3. Planting beds: Remulch.
4. Depth (minimum): 50 mm
5. Trees: Remulch.
6. Depth (minimum): 50 mm

Ω End of Section

## Q35 Landscape maintenance

### Generally

#### 110 Notice

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1. Give notice before
  - 1.1. Application of herbicide.
  - 1.2. Application of fertilizer.
  - 1.3. Watering.
  - 1.4. Each site maintenance visit.
2. Period of notice: Seven days

#### 130 Reinstatement

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1. Damage or disturbance to soil structure, planting, grass, fencing, hard landscaping, structures or buildings: Reinstatement to original condition.

#### 155 Watering

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1. Supply: Site supply
2. Quantity: Wet to field capacity
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: As necessary for the continued thriving of all planting

#### 160 Water restrictions

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1. General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.

#### 170 Disposal of arisings

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1. General: Unless specified otherwise, dispose of arisings as follows:
  - 1.1. Biodegradable arisings: Remove to recycling facility
  - 1.2. Grass cuttings: Remove to recycling facility
  - 1.3. Tree roots and stumps: Remove from site
  - 1.4. Shrub and tree prunings: Remove to recycling facility
  - 1.5. Litter and nonbiodegradable arisings: Remove from site

#### 181 Mechanical equipment

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1. General: Minimize.
2. Prohibited equipment: Chippers
3. Timing: Use of mechanical equipment allowed between the hours of 10:00 am and 4:00 pm only

#### 190 Litter

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1. Extraneous rubbish not arising from the contract work: Collect and remove from site.

#### 195 Protection of existing grass

---

1. General: Protect areas affected by maintenance operations using boards/tarpaulins. Do not place excavated or imported materials directly on grass.

## 197 Cleanliness

---

1. Soil and arisings: Remove from hard surfaces.
2. General: Leave the works in a clean, tidy condition at completion and after any maintenance operations.

## Grassed areas

### 210 Performance-based maintenance of grassed areas

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1. General: Maintain turf in a manner appropriate to the intended use.
2. Soil and grass
  - 2.1. Condition: Maintain a healthy vigorous sward, free from disease, fungal growth, discolouration, scorch or wilt.
  - 2.2. Waterlogging and compaction: Prevent.
  - 2.3. Damage: Repair trampling, abrasion or scalping.
3. Ornamental lawns: Maintain reasonably free from moss, excessive thatch, weeds, frost heave, worm casts and mole hills.
  - 3.1. Edges: Neat and well defined, in clean, straight lines or smooth-flowing curves.
4. Litter and fallen leaves: Remove regularly to maintain a neat appearance.

### 220 Grass cutting generally

---

1. Before mowing: Remove litter, rubbish and debris.
2. Finish: Neat and even, without surface rutting, compaction or damage to grass.
3. Edges: Leave neat and well defined. Neatly trim around obstructions.
4. Adjoining hard areas: Sweep clear and remove arisings.
5. Drought or wet conditions: Obtain instructions.

### 225 Tree stems

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1. Precautions: Do not allow nylon filament rotary cutters and other mechanical tools closer than 100 mm to the stem of any tree. Complete operations close to stems using hand tools

### 235 Bulbs and corms in grassed areas

---

1. Before flowering: Do not cut.
2. Interval between end of flowering and start of grass cutting (minimum): 6 weeks

### 240 Mowing strips

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1. Location: Around each tree trunk
2. Width (approximate): 150 mm.
3. Operations: Maintain by hand-weeding and cultivation

### 250 Leaf removal

---

1. Operations: Collect fallen leaves.
2. Special requirements: None
3. Disposal: Remove from site for recycling

### 260 Mowing lawns

---

1. Grass height: Maintain between 25 and 50 mm
2. Arisings: Remove

## **272 Maintaining grassed areas with perennial wildflowers**

---

1. Preparation: Before each cut remove litter and debris.
2. Height and frequency of cut in first growing season
  - 2.1. Time of first cut: March/ April
  - 2.2. Height of first cut: 100 mm
  - 2.3. Frequency of subsequent cutting (minimum): Every six to eight weeks until autumn
  - 2.4. Height of growth permitted (maximum): 150 mm
3. Height and frequency of cut in second growing season
  - 3.1. Time of cut: Single cut in October
  - 3.2. Height of cut: 100 mm
4. Trimming: All edges.
  - 4.1. Arisings: Remove.
5. Watering: As required to establish wild flowers

## **275 Cutting summer flowering wildflower meadows**

---

1. Times of year/ frequency of cutting: September
2. Height of cut: 75 mm
3. Arisings: Leave for two to three days after cutting then remove

## **285 Top dressing**

---

1. Location: All lawns
2. Timing: Following scarification and aeration
3. Material: Sandy loam
4. Supplier: Contractor's choice
  - 4.1. Product reference: Submit proposals.
5. Declaration of analysis: Submit.
6. Additional analyses: Not required
7. Samples: Not required
8. Application rate: 3-4 mm depth

## **295 Spiking**

---

1. Location: Ornamental lawns
2. Timing: As necessary to relieve compaction
3. Operations: Aerate the soil and improve surface water penetration.
4. Depth (minimum): 100 mm

## **300 Scarifying**

---

1. Location: All lawns
2. Timing: October or November, before top dressing
3. Operations: Relieve thatch conditions and remove dead grass.
4. Depth (maximum): 15 mm
5. Arisings: Remove

## **307 Hollow tining**

---

1. Location: All lawns

2. Timing: As necessary to relieve compaction, October or November, before top dressing
3. Depth: 75 mm

### **311 Re-forming grass edges**

---

1. Location: All edges, where damage occurs
2. Method: Draw back soil and re-form edges to clean, straight lines or smooth-flowing curves, sloping slightly back from vertical
3. Finishing: Damaged parts of turned turf replaced with sound turf
  - 3.1. Support: Not required

### **320 Levelling hollows and bumps in turf**

---

1. Standard: To BS 7370-3, clauses 12.4 and 12.5.

### **325 Relieving surface compaction in turf**

---

1. Standard: To BS 7370-3.
2. Method: Spiking
3. Top dressing: Fine sand
  - 3.1. Depth: 2-3 mm

### **340 Spot weed killing in rough grass areas**

---

1. Herbicide: Non-selective systemic type
2. Operations: Spot-treat All broad-leaved weeds.

### **350 Fertilizer – spring application**

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1. Type: Organic
2. Application rate: Manufacturers recommendations

### **360 Fertilizer – autumn application**

---

1. Type: Organic
2. Application rate: Manufacturers recommendations

### **380 Reinstatement of damaged lawns**

---

1. Damaged turf: Remove to a depth of 40 mm.
2. Preparation: Cultivate substrate to a fine tilth.
3. Reinstatement: Contractor's choice of returfing or topsoiling and reseeding:
  - 3.1. Returfing: Quality and appearance to match existing.
  - 3.2. Reseeding: Fill with fine topsoil to BS 3882 multipurpose class, free from stones, debris and weeds. Reseed with a seed mix to match existing grass in quality and appearance.
4. Protection and watering: Provide as necessary to promote successful germination and/ or establishment.

## **Flower beds/ seasonal beddings**

### **470 Flower beds generally**

---

1. Operations
  - 1.1. Remove: Dead flower heads, fallen leaves, litter and debris.
  - 1.2. Weeds: Thoroughly hand-weed.

- 1.3. Cultivate: Lightly hoe.
- 1.4. Trim: Clip grass edges.
2. Fungicide: Not required
3. Insecticide: Not required

## Shrubs/ trees/ hedges

### 500 Establishment of new planting

---

1. Duration: until completion of the rectification period
2. Weed control
  - 2.1. Method: Keep planting beds clear of weeds by Hoeing and screefing & Maintaining full thickness of mulch.
  - 2.2. Area: Maintain a weed-free area around each tree and shrub, minimum diameter the larger of 1 m or the surface of the original planting pit.
3. Soil condition: Fork over beds to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.
4. Watering: As required to establish planting

### 502 Establishment of new planting – fertilizer

---

1. Time of year: March or April.
2. Type: Organic
3. Spreading: Spread evenly.
  - 3.1. Application rate: As manufacturer's recommendations

### 510 Tree stakes and ties

---

1. Inspection/ maintenance times: As scheduled and immediately after strong winds
2. Stakes
  - 2.1. Replace loose, broken or decayed stakes to original specification.
  - 2.2. If longer than half of clear tree stem height, cut to this height in spring. Retie to tree firmly but not tightly with a single tie.
3. Ties: Adjust, refix or replace loose or defective ties, allowing for growth and to prevent chafing.
  - 3.1. Where chafing has occurred, reposition or replace ties to prevent further chafing.
4. Removal of stakes and ties: During spring when no longer required to support the tree
  - 4.1. Fill stake holes with lightly compacted soil.

### 515 Tree guy wires

---

1. Inspection/ maintenance times: Immediately after strong winds
2. Operations
  - 2.1. Replace or resecure loose or missing guy wires.
  - 2.2. Adjust to suit stem growth and to provide correct and uniform tension.
3. Removal: During spring when no longer required to support the tree

### 520 Refirming of trees and shrubs

---

1. Timing: After strong winds, frost heave and other disturbances.
2. Refirming: Tread around the base until firmly bedded.
3. Collars in soil at base of tree stems, created by tree movement: Break up by fork, avoiding damage to roots. Backfill with topsoil and refirm.

### **537 Nesting wild birds**

---

1. **Survey:** Before starting hedge or tree work during the period of February to August (inclusive), carry out a survey by a qualified ecologist and submit report
2. **Accidental disturbance:** Report immediately.

### **540 Pruning generally**

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1. **Pruning:** In accordance with good horticultural and arboricultural practice.
  - 1.1. **Removing branches:** Do not damage or tear the stem or bark.
  - 1.2. **Wounds:** Keep as small as possible and cut cleanly back to sound wood.
  - 1.3. **Cutting:** Make cuts above and sloping away from an outward-facing healthy bud, angled so that water will not collect on cut area.
  - 1.4. **Larger branches:** Prune neither flush nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide.
2. **Appearance:** Thin, trim and shape each specimen appropriately to species, location, season, and stage of growth, leaving a well-balanced natural appearance.
3. **Tools:** Use clean sharp secateurs, hand saws or other approved tools. Trim off ragged edges of bark or wood with a sharp knife.
4. **Disease or infection:** Give notice if detected.
5. **Growth retardants, fungicide or pruning sealant:** Do not use unless instructed.

### **555 Pruning trees and shrubs**

---

1. **Standard:** To BS 7370-4.
2. **Special requirements:** None

### **570 Formative pruning of young trees**

---

1. **Standard:** Type and timing of pruning operations to suit the plant species.
2. **Time of year:** Do not prune during the late winter/ early spring sap flow period.
3. **Young trees up to 4 m high**
  - 3.1. **Crown prune** by removing dead branches and reducing selected side branches by one third to preserve a well-balanced head and ensure the development of a single strong leader.
  - 3.2. **Remove duplicated branches** and potentially weak or tight forks. In each case, cut back to live wood.
4. **Whips or feathered trees:** Do not prune.
5. **Operatives:** Member of the Arboricultural Association

### **575 Pruning ornamental shrubs**

---

1. **General:** Prune to encourage healthy and bushy growth and desirable ornamental features, e.g. flowers, fruit, autumn colour, stem colour.
2. **Suckers:** Remove by cutting back level with the source stem or root.

### **580 Pruning flowering species of shrubs and roses**

---

1. **Time of year**
  - 1.1. **Winter flowering shrubs:** Spring.
  - 1.2. **Shrubs flowering between March and July:** Immediately after the flowering period.
  - 1.3. **Shrubs flowering between July and October:** Back to old wood in winter.
  - 1.4. **Rose bushes:** Early spring to encourage basal growths and a balanced, compact habit.

## **600 Trimming rapidly establishing hedges**

---

1. General: Allow to reach planned height as rapidly as possible.
  - 1.1. Form: Trim back lateral branches moderately.

## **605 Trimming slowly establishing hedges**

---

1. Operations
  - 1.1. Timing: Cut back hard in June and September to encourage bushy growth down to ground level.
  - 1.2. Form: Allow to reach planned dimensions only by gradual degrees, depending on growth rate and habit.

## **610 Trimming tapering established hedges**

---

1. Time of year: Trim once in July or August
2. Operations
  - 2.1. Form: Trim carefully and neatly to regular line and shape, with the width at the top less than that at the base.
  - 2.2. Trim: Remove current growth rather than old wood.
3. Tools/ cutting: Suitable mechanical cutters

## **620 Removal of dead plant material**

---

1. Operations: At the end of the growing season, check all shrubs and remove all dead foliage, dead wood, and broken or damaged branches and stems.

## **625 Climbing plants**

---

1. Pruning: Remove excess growth, to ensure that signs, light fittings, doors and windows are kept clear at all times.
2. Insecure growth: Attach to supporting wires or structures using Plastics clips.
3. Supporting structures: Check and repair as necessary.

## **630 Dead and diseased plants**

---

1. Removal: As soon as possible
2. Replacement: In the next scheduled round of replacement planting

## **635 Reinstatement of shrub/ herbaceous areas**

---

1. Dead and damaged plants: Remove.
2. Mulch/ matting materials
  - 2.1. Carefully move to one side and dig over the soil, leaving it fit for replanting.
3. Do not disturb roots of adjacent plants.
4. Replacement plants
  - 4.1. Use pits and plants: To original specification or to match the size of adjacent or nearby plants of the same species, whichever is the greater.
  - 4.2. Additional requirements: Submit proposals
5. Dressing: Slow-release fertilizer:
  - 5.1. Type: Organic
  - 5.2. Application rate: As manufacturer's recommendations

## **645 Weed control generally**

---

1. Weed tolerance: At all times, weed cover less than 5% and no weed to exceed 100 mm high
2. Adjacent plants, trees and grass: Do not damage.

## **650 Hand-weeding**

---

1. General: Remove weeds entirely, including roots.
2. Disturbance: Remove the minimum quantity of soil, and disturb plants, bulbs and mulched surfaces as little as possible.
3. Completion: Rake area to a neat, clean condition.
4. Mulch: Reinstate to original depth.

## **675 Digging over**

---

1. General: Dig over beds. Do not damage existing plants, bulbs and roots.
  - 1.1. Depth of dig (minimum): 75 mm

## **680 Soil aeration**

---

1. Compacted soil surfaces
  - 1.1. Prick up: To aerate the soil of root areas and break surface crust.
  - 1.2. Size of lumps: Reduce to crumb and level off.
  - 1.3. Damage: Do not damage plants and their roots.

## **685 Soil level adjustment**

---

1. Level of soil/mulch at edges of beds: Reduce to 50 mm below adjacent grass or hard surface.
  - 1.1. Arisings (if any): Spread evenly over the bed.

## **690 Maintenance of loose mulch**

---

1. Thickness (minimum): 50 mm
  - 1.1. Top up: Annually
2. Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.
3. Weeding: Remove weeds growing on or in mulch by Hand-weeding.

## **695 Fertilizing established trees and shrubs**

---

1. Time of year: During April or May
2. Type of fertilizer: Organic
3. Application: Spread evenly.
  - 3.1. Rate: As manufacturer's recommendations

## **Green walls - Not Used**

## **Tree work**

### **810 Tree work generally**

---

1. Identification: Before starting work agree which trees, shrubs and hedges are to be removed or pruned.
2. Protection: Avoid damage to neighbouring trees, plants and property
3. Standard: To BS 3998.

4. **Removing branches:** Cut vertical branches similarly, with no more slope on the cut surface than is necessary to shed rainwater.
5. **Appearance:** Leave trees with a well-balanced natural appearance.
6. **Chain saw work:** Operatives must hold a certificate of competence.
7. **Tree work:** To be carried out by an approved member of the Arboricultural Association.

### **815 Additional work**

---

1. **Defective, diseased, unsafe or weak parts of trees additional to those scheduled for attention:** Give notice if detected.

### **820 Prevention of wound bleeding**

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1. **Standard:** To BS 3998.

### **825 Prevention of disease transmission**

---

1. **Standard:** To BS 3998.

### **830 Cleaning out and deadwooding**

---

1. **Remove**
  - 1.1. Dead, dying or diseased wood, broken branches and stubs.
  - 1.2. Fungal growths and fruiting bodies.
  - 1.3. Rubbish, windblown or accumulated in branch forks.
  - 1.4. Wires, clamps, boards and metal objects, if removable without causing further damage and not part of a support structure that is to be retained.
  - 1.5. Other unwanted objects, e.g. tree houses, swings.

### **835 Cutting and pruning generally**

---

1. **Tools:** Appropriate, well maintained and sharp.
2. **Final pruning cuts**
  - 2.1. **Chainsaws:** Do not use on branches of less than 50 mm diameter.
  - 2.2. **Hand saws:** Form a smooth cut surface.
  - 2.3. **Anvil type secateurs:** Do not use.
3. **Removing branches:** Do not damage or tear the stem.
4. **Wounds:** Keep as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.
5. **Cutting:** Cut at a fork or at the main stem to avoid stumps wherever possible.
6. **Large branches:** Remove only with prior approval
  - 6.1. Remove in small sections and lower to ground with ropes and slings.
7. **Dead branches and stubs:** When removing, do not cut into live wood.
8. **Unsafe branches:** Remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.
9. **Disease or fungus:** Give notice if detected. Do not apply fungicide or sealant unless instructed.

### **845 Crown lifting**

---

1. **Clearances:** Remove branch systems to give clearance.
  - 1.1. **Height:** 2.5 m above footpaths
2. **Removing branches:** Remove whole branches back to the stem, or cut lower portions of branches back to lateral or sublateral buds or branches. Do not leave stumps.

## 850 Crown thinning

---

1. Removing branches: Remove inward-growing, crossing, rubbing, dead and damaged branches.
2. Thinning: Selectively remove secondary and small live branch growth evenly throughout the crown.
  - 2.1. Quantity: 10 %
3. Cutting: Make no cuts of more than 35 mm diameter.
  - 3.1. Branches: Cut back to lateral or sublateral buds or branches without leaving stumps.
4. Appearance: Leave a uniform and well-balanced structure of branches and foliage.

## 855 Cutting tree roots

---

1. Excavating: Use hand tools only.
2. Protected area: Do not cut roots within an area which is the larger of:
  - 2.1. The branch spread of the tree.
  - 2.2. An area with a radius of half the tree's height, measured from the trunk.
3. Outside protected area: Give notice of roots exceeding 50 mm in diameter. Do not cut without approval.
4. Cutting
  - 4.1. Cutting: Make clean smooth cuts with a hand saw.
  - 4.2. Wounds: Minimize. Avoid ragged edges.
  - 4.3. Finishing: Pare cut surfaces smooth with a sharp knife.
5. Backfilling
  - 5.1. Protection: Cover cut roots with clean sharp sand.
  - 5.2. Material: Backfill with original topsoil.

## 860 Removing trees, shrubs and hedges

---

1. Standard: To BS 3998.
2. Existing services: Check for below and above ground services. Give notice if they may be affected.
3. Shrubs and smaller trees: Cut down and grub up roots.
4. Tree stumps
  - 4.1. Treatment: Remove mechanically to a minimum depth of 300 mm below ground level
  - 4.2. Removal by winching: Give notice. Do not use other trees as supports or anchors.
5. Protection: Avoid damage to neighbouring trees, plants and property
6. Work near retained trees: Where tree canopies overlap and in confined spaces generally, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.
7. Filling holes
  - 7.1. Material: Use as-dug material and/ or imported soil as required.
  - 7.2. Finishing: Consolidate and grade to marry in with surrounding ground level.

## 865 Bark damage

---

1. Wounds
  - 1.1. Do not attempt to stop sap bleeding.
  - 1.2. Bark: Remove ragged edges using a sharp knife.
  - 1.3. Wood: Remove splintered wood from deep wounds.
  - 1.4. Size: Keep wounds as small as possible.
2. Liquid or flux oozing from apparently healthy bark: Give notice.

## **870 Cavities in trees**

---

1. Investigation: Remove rubbish and rotten wood. Probe the cavity to find the extent of any decay, and give notice.
2. Water-filled cavities: Do not drain.
3. Sound wood inside cavities: Do not remove.
4. Cavity openings: Cover, as scheduled, with galvanized wire mesh, lightly secured

## **Water areas - Not Used**

## **Hard landscape areas/ fencing**

## **910 Hard surfaces and gravel areas**

---

1. Herbicide: Apply a suitable foliar-acting or residual herbicide. Allow recommended period for herbicide to take effect before clearing arisings.
2. Hard surfaces: Remove litter, leaves and other debris.
3. Surface gutters and channels: Remove mud, silt and debris.
4. Drainage gullies: Empty traps and flush clean.
5. Gravel areas: Rake over. Remove weeds, litter, leaves and debris, and level off.
6. Repairs to flexible bituminous pavings: In accordance with the original paving specification or BS 7370-2, clause 4.12.
7. Stain removal: In accordance with BS 7370-2, Table 4.

Ω End of Section

## Q37 Green roofs

### General

#### 130 Extensive green roof

---

1. Description: Ventilation structure roof
2. Roof type: Cold
  - 2.1. Substrate: Proprietary profiled steel decking to architects detail
  - 2.2. Slope: As Architects drawing
3. Waterproofing: To architects specification
4. Thermal insulation: To architects specification
5. Protection: To architects specification
6. Moisture control layers: Drainage mat: Q37/350A
7. Growing medium: Green roof growing media system Q37/400A
  - 7.1. Depth: 130-150 mm
8. Vegetation: Turfing, as section Q37/400B
9. Accessories:
  - Fire breaks Q37/440
  - Edge-retaining profile Q37/420A
  - Filter fleece Q37/360A

### Performance - Not Used

### Products

#### 350A Drainage Mat 40mm

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1. Manufacturer: [Radmat Building Products Ltd](#)
  - 1.1. Contact details
    - 1.1.1. Address: Holland House  
Valley Way  
Rockingham Road  
Market Harborough  
Leicestershire  
LE16 7PS
    - 1.1.2. Telephone: +44 (0)1858 410372
    - 1.1.3. Web: [www.radmat.com](http://www.radmat.com)
    - 1.1.4. Email: [techenquiries@radmat.com](mailto:techenquiries@radmat.com)
  - 1.2. Product reference: [MedO D40 Reservoir & Drainage Board](#)
2. Physical properties
  - 2.1. Material: Recycled polystyrene
  - 2.2. Capacity: 19.59 L/m<sup>2</sup>.
  - 2.3. Recycled content (minimum): 80%.
3. Sheet thickness: 40 mm.
4. Fire performance: To DIN 4102: B2.

### **350B**                      **Drainage Mat 80mm**

---

1. Manufacturer: [Radmat Building Products Ltd](#)
  - 1.1. Contact details
    - 1.1.1. Address: Holland House  
Valley Way  
Rockingham Road  
Market Harborough  
Leicestershire  
LE16 7PS
    - 1.1.2. Telephone: [+44 \(0\)1858 410372](tel:+44(0)1858410372)
    - 1.1.3. Web: [www.radmat.com](http://www.radmat.com)
    - 1.1.4. Email: [techenquiries@radmat.com](mailto:techenquiries@radmat.com)
  - 1.2. Product reference: [MedO D80 LOW Reservoir & Drainage Board](#)
2. Physical properties
  - 2.1. Material: High-density polyethylene (HDPE).
  - 2.2. Capacity: 27 L/m<sup>2</sup>.
  - 2.3. Recycled content (minimum): 50%.
3. Sheet thickness: 80 mm.

### **350C**                      **Drainage Mat 25mm**

---

1. Manufacturer: [Radmat Building Products Ltd](#)
  - 1.1. Contact details
    - 1.1.1. Address: Holland House  
Valley Way  
Rockingham Road  
Market Harborough  
Leicestershire  
LE16 7PS
    - 1.1.2. Telephone: [+44 \(0\)1858 410372](tel:+44(0)1858410372)
    - 1.1.3. Web: [www.radmat.com](http://www.radmat.com)
    - 1.1.4. Email: [techenquiries@radmat.com](mailto:techenquiries@radmat.com)
  - 1.2. Product reference: [MedO DM25 Drainage Board](#)
2. Material: High-density polyethylene (HDPE).
3. Compressive strength at 10% compression: 31 kN/m.
4. Depth: 26.6 mm.
5. Infill: none
6. Recycled content: 100%.
7. Elongation: 50%.
8. Colour: Black.
9. Weight (minimum): 82.35 kg.

### **360A**                      **Polyester (PES) fibre fleece reinforcement**

---

1. Manufacturer: [Radmat Building Products Ltd](#)
  - 1.1. Contact details
    - 1.1.1. Address: Holland House  
Valley Way  
Rockingham Road  
Market Harborough

Leicestershire  
LE16 7PS

1.1.2. Telephone: +44 (0)1858 410372

1.1.3. Web: [www.radmat.com](http://www.radmat.com)

1.1.4. Email: [techenquiries@radmat.com](mailto:techenquiries@radmat.com)

1.2. Product reference: [MedO G12 Geotextile Filter Fleece](#)

2. Weight (maximum): 200 g/m<sup>2</sup>.

3. Tensile strength

3.1. Transverse strength (minimum): 14.5 kN/m.

3.2. Longitudinal strength (minimum): 13.5 kN/m.

4. Roll width (minimum): 2000 mm.

## **400A Green roof substrates**

---

1. Manufacturer: [Radmat Building Products Ltd](#)

1.1. Contact details

1.1.1. Address: Holland House  
Valley Way  
Rockingham Road  
Market Harborough  
Leicestershire  
LE16 7PS

1.1.2. Telephone: +44 (0)1858 410372

1.1.3. Web: [www.radmat.com](http://www.radmat.com)

1.1.4. Email: [techenquiries@radmat.com](mailto:techenquiries@radmat.com)

1.2. Product reference: [MedO GM30 Wildflower Substrate](#)

2. General requirements: Topsoil, growing medium, subsoil and preparation materials generally

3. Standard: Compliant with GRO substrate guidelines.

4. pH (range): 7.8.

5. Grain size: 10 mm.

## **400B Pre-planted vegetation mats**

---

1. Manufacturer: [Radmat Building Products Ltd](#)

1.1. Contact details

1.1.1. Address: Holland House  
Valley Way  
Rockingham Road  
Market Harborough  
Leicestershire  
LE16 7PS

1.1.2. Telephone: +44 (0)1858 410372

1.1.3. Web: [www.radmat.com](http://www.radmat.com)

1.1.4. Email: [techenquiries@radmat.com](mailto:techenquiries@radmat.com)

1.2. Product reference: [MedO Wildflower Mat](#)

2. General requirements: Turf, pre-planted and pre-seeded products generally

3. Dimensions: 1200 mm.

4. Plants

4.1. Mix type: Sedum and wildflower mix.

- 4.2. **Species:** Plantago media. Plantago lanceolata. Origanum vulgare. Lotus corniculatus. Leucanthemum vulgare. Knautia arvensis. Leontodon hispidus. Galium verum. Galium album / Galium mollugo. Filipendula ulmaria. Daucus carota. Centaurea s.cabiosa Achillea millefolium.

## 420A Metal edgings

---

1. Manufacturer: [Radmat Building Products Ltd](#)
  - 1.1. Contact details
    - 1.1.1. Address: Holland House  
Valley Way  
Rockingham Road  
Market Harborough  
Leicestershire  
LE16 7PS
    - 1.1.2. Telephone: [+44 \(0\)1858 410372](tel:+44(0)1858410372)
    - 1.1.3. Web: [www.radmat.com](http://www.radmat.com)
    - 1.1.4. Email: [techenquiries@radmat.com](mailto:techenquiries@radmat.com)
  - 1.2. Product reference: [MedO GS EdgeGuard](#)
2. Material: Aluminium.
3. Edging
  - 3.1. Form: Straight.
  - 3.2. Length (minimum): 2400 mm.
  - 3.3. Size: 150 x 150 x 1.5 mm.
  - 3.4. Colour: Silver.
4. Connectors: GS-CP145.

## 440 Fire breaks

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1. Description: To edge of parapet and surrounding any penetrations through ventilation structure roof.
2. Material: 20-40 mm rounded pebbles
3. Submit proposals
4. Depth: 100 mm
5. Width: 300 mm

## Execution

### 710 Installation generally

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1. Preparation: Clear all surfaces of debris.
  - 1.1. Timing: After certification of waterproof membrane integrity.
  - 1.2. Surface condition: Visually inspect waterproof membrane, report any damage.
2. Faults in waterproof membrane: Report.
3. Contamination: Do not use materials detrimental to healthy plant growth.
4. Storage: Do not overload.
  - 4.1. Point loads: Avoid.
5. Outlets: Do not block.
  - 5.1. Outlet grilles: Installed.

## 720 Adverse weather

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1. Unfinished work: Secure from damage and wind uplift.
2. Conditions: Do not install or work with frozen materials.

## 740 Root barrier installation

---

1. Joints: Minimize.
  - 1.1. Overlaps (minimum): 500 mm
2. Upstands: Extend to top of growing medium.

## 750 Protection layer installation

---

1. Joints: Minimize.
  - 1.1. Overlaps (minimum): 500 mm
2. Upstands: Extend to top of growing medium.

## 770 Drainage layer installation

---

1. Extent: Continuous over entire roof area.
2. Fitting: Overlapping to manufacturer's recommendation
3. Upstands: Fit closely around penetrations and outlets.

## 780 Filter membrane installation

---

1. Joints: Minimize.
  - 1.1. Overlaps (minimum): 300 mm
2. Fitting: Loose laid to manufacturer's recommendation
3. Upstands: Extend to top of growing medium.

## 790 Growing medium installation

---

1. Handling: Minimize.
  - 1.1. Conditions: Handle in the driest condition possible. Do not handle or install when wet or frozen.
2. Layers
  - 2.1. Depth (maximum): 150 mm.
  - 2.2. Sequence: Gently firm each layer before spreading the next.

## 800 Vegetation blanket installation

---

1. Handling blankets
  - 1.1. Timing: Lay within 36 hours of lifting from growing position.
  - 1.2. Excessive stacking: Not permitted.
  - 1.3. Material loss (maximum): 3% of total surface area.
2. Growing medium condition: Thoroughly watered.
3. Laying blankets
  - 3.1. Dry, damaged, frosty or waterlogged blankets: Do not lay.
  - 3.2. Orientation: Diagonal or perpendicular to slope of roof.
  - 3.3. Joints: Stagger. Butt together or slightly overlap to prevent gaps. Do not stretch blankets. Secure with biodegradeable pegs.
  - 3.4. Edges: Finish with whole blankets.

- 3.5. **Consolidation:** Firm as laying proceeds to ensure full contact with the growing medium. Do not use rollers.
4. **Dressing:** Coarse washed river sand with neutral pH
  - 4.1. **Application:** Brush in to fill joints.
5. **Watering:** Thorough, immediately after laying and dressing.

## **820 Edge-retaining profile installation**

---

1. **Cutting:** Neat, accurate and without spalling.
  - 1.1. **Junctions:** vertical, secured using proprietary connectors.
2. **Position:** True to line and level. Smooth continuous lines.
3. **Fixing:** Manufacturer's standard

## **Completion**

### **910 Inspection**

---

1. **Timing:** Before handover.
  - 1.1. **Give notice (minimum):** Three days.

### **920 Completion**

---

1. **General:** Leave the works in a clean, tidy condition.
2. **Surfaces:** Clean immediately before handover.
3. **Outlets:** Clean and clear of obstructions.
4. **Completed green roof:** Protect from adjacent or high level working.

### **930 Documentation**

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1. **Timing:** Submit at handover.
2. **Contents**
  - 2.1. **Growing medium declaration of analysis.**
  - 2.2. **Manufacturers' guarantees and warranties.**
  - 2.3. **Procedures for maintenance of the green roof.**
  - 2.4. **Record drawings showing the location of planting and associated features.**
3. **Number of copies:** 2

Ω End of Section

## Q40 Fencing

### Fencing systems

#### 340A                    **B-4: Play area vertical bar fencing**

---

1. Manufacturer: [Jacksons Fencing](#)
  - 1.1. Contact details
    - 1.1.1. Address: 209 Stowting Common  
Ashford  
Kent  
TN25 6BN
    - 1.1.2. Telephone: [0800 408 4757](tel:08004084757)
    - 1.1.3. Web: [www.jacksons-security.co.uk](http://www.jacksons-security.co.uk)
    - 1.1.4. Email: [sales@jacksons-fencing.co.uk](mailto:sales@jacksons-fencing.co.uk)
  - 1.2. Product reference: [Playtime Steel Fencing](#)
2. Standard: BS EN 1176.
3. Posts: 60 x 60 mm.
4. Post foundations: Over length set in concrete.
5. Rails: Horizontal rails, 60 x 40 mm hollow section.
6. Panels: 25 x 25 mm welded at 129 mm centres, 2490 mm wide.
7. System accessories: Matching single leaf gates Q40/560A
8. Worked finish: Galvanized and powder-coated, black RAL 9005.

### Gates, posts and stiles

#### 560A                    **G-1 METAL GATE (B-4)**

---

1. Description: Play area gate
2. Standard
  - 2.1. Domestic gates: To BS 4092-1.
  - 2.2. Steel palisade gates: To BS 1722-12.
3. Manufacturer: Jacksons Fencing  
A: 209 Stowting Common, Ashford, Kent, TN25 6BN  
T: 0800 408 4757  
E: [sales@jacksons-fencing.co.uk](mailto:sales@jacksons-fencing.co.uk)
  - 3.1. Product reference: Single leaf gate with self closing floor hinge
4. Materials and workmanship: As section Z11.
5. Finish: Hot-dip galvanized to BS EN ISO 1461 & Polyester powder-coated, as section Z31
  - 5.1. Colour: Black RAL 9005
6. Jointing: Welded.
7. Fittings: Two self closing adjustable hinges, cushioned slam plate and automatic catch
8. Finish: Hot-dip galvanized to BS EN ISO 1461 & Polyester powder-coated, as section Z31, black
9. Method of fixing: Root fixed into concrete foundation
10. Accessories: Self closer

## Accessories - Not Used

### Execution

#### 710 Installation generally

---

1. Set out and erect
  - 1.1. Alignment: Straight lines or smoothly flowing curves.
  - 1.2. Tops of posts: Following profile of the ground.
  - 1.3. Setting posts: Rigid, plumb and to specified depth, or greater where necessary to ensure adequate support.
  - 1.4. Fixings: All components securely fixed.

#### 715 Competence

---

1. Operatives: Contractors must employ competent operatives.
2. Qualifications: Submit certification of training.
  - 2.1. NHSS Sector Scheme 2A sub categories: (a) (b) (g)
  - 2.2. NHSS Sector Scheme 2C sub categories: n/a

#### 720 Setting posts in concrete

---

1. Standard: To BS 8500-2.
2. Mix: Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2.
3. 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.
4. Admixtures: Do not use.
5. Holes: Excavate neatly and with vertical sides.
6. Filling: Position post/ strut and fill hole with concrete to not less than the specified depth, well rammed as filling proceeds and consolidated.
7. Backfilling of holes not completely filled with concrete: Excavated material, well rammed and consolidated.

#### 730 Exposed concrete foundations

---

1. Filling: Compact until air bubbles cease to appear on the upper surface.
2. Finishing: Weathered to shed water and trowelled smooth.

#### 770 Site cutting of wood

---

1. General: Kept to a minimum.
2. Below or near ground level: Cutting prohibited.
3. 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

---

1. 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.
2. Thickness: Apply sufficient material to provide a zinc coating at least equal in thickness to the original layer.

#### 790 Site painting

---

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

## Completion

### 910 Cleaning

---

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

### 920 Fixings

---

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

### 930 Gates

---

1. Hinges, latches and closers: Adjust to provide smooth operation. Lubricate where necessary.
  - 1.1. Timing: Before handover.

Ω End of Section

## Q50 Site/ street furniture/ equipment

### Gates, barriers and parking controls

#### 190A F-16A: Bollards

---

1. Description: Ground floor fixed bollards
2. Manufacturer: [Broxap Ltd](#)
  - 2.1. Contact details
    - 2.1.1. Address: Rowhurst Industrial Estate  
Chesterton  
Newcastle-under-Lyme  
Staffordshire  
ST5 6BD
    - 2.1.2. Telephone: +44 (0)1782 571700
    - 2.1.3. Web: [www.broxap.com](http://www.broxap.com)
    - 2.1.4. Email: [nbs@broxap.com](mailto:nbs@broxap.com)
  - 2.2. Product reference: [Stainless Steel Sheffield Bollard](#)
3. Dimensions
  - 3.1. Size and profile: 114 mm diameter.
  - 3.2. Height: 1000 mm.
  - 3.3. Length below ground: 300 mm.
4. Top profile: Flat.
5. Base: Root fixed.
6. Finishes
  - 6.1. Worked finishes: Satin.
7. Accessories: Non reflective single black band
8. Weight: 42 kg.
9. Steel grade: Stainless steel grade 1.4401 (316).

#### 192A F-16C: Stainless steel telescopic bollards

---

1. Description: To canal square access
2. Manufacturer: [Broxap Ltd](#)
  - 2.1. Contact details
    - 2.1.1. Address: Rowhurst Industrial Estate  
Chesterton  
Newcastle-under-Lyme  
Staffordshire  
ST5 6BD
    - 2.1.2. Telephone: +44 (0)1782 571700
    - 2.1.3. Web: [www.broxap.com](http://www.broxap.com)
    - 2.1.4. Email: [nbs@broxap.com](mailto:nbs@broxap.com)
  - 2.2. Product reference: [Lift Assist Telescopic Post - Stainless Steel \(BX20 5371\)](#)
3. Dimensions
  - 3.1. Size and profile: Overall Diameter: 114mm.
  - 3.2. Height: 900 mm.
4. Top profile: Telescopic handle.

5. Base: Telescopic.
6. Finishes
  - 6.1. Worked finishes: Satin.
7. Accessories: Yellow reflective bands.
8. Material: 316 grade stainless steel
9. Special features: 2nr yellow reflective bands, at top of bollard

## **196A**                      **F-16B: Removable Bollards**

---

1. Description: Ground floor removable bollards
2. Manufacturer: [Broxap Ltd](#)
  - 2.1. Contact details
    - 2.1.1. Address: Rowhurst Industrial Estate  
Chesterton  
Newcastle-under-Lyme  
Staffordshire  
ST5 6BD
    - 2.1.2. Telephone: [+44 \(0\)1782 571700](tel:+44(0)1782571700)
    - 2.1.3. Web: [www.broxap.com](http://www.broxap.com)
    - 2.1.4. Email: [nbs@broxap.com](mailto:nbs@broxap.com)
  - 2.2. Product reference: [Stainless Steel Sheffield Bollard](#)
3. Dimensions
  - 3.1. Size and profile: 114 mm diameter.
  - 3.2. Height: 1000 mm.
  - 3.3. Length below ground: 300 mm.
4. Top profile: Flat.
5. Base: Removable.
6. Finishes
  - 6.1. Worked finishes: Satin.
7. Accessories: Non reflective single black band  
Additional socket for storing bollard when lifted from original location.
8. Weight: 42 kg.
9. Steel grade: Stainless steel grade 1.4401 (316).

## **Site and street furniture**

### **210A**                      **F-17: Cycle stands**

---

1. Manufacturer: [Broxap Ltd](#)
  - 1.1. Contact details
    - 1.1.1. Address: Rowhurst Industrial Estate  
Chesterton  
Newcastle-under-Lyme  
Staffordshire  
ST5 6BD
    - 1.1.2. Telephone: [+44 \(0\)1782 571700](tel:+44(0)1782571700)
    - 1.1.3. Web: [www.broxap.com](http://www.broxap.com)
    - 1.1.4. Email: [nbs@broxap.com](mailto:nbs@broxap.com)
  - 1.2. Product reference: [Sheffield Cycle Stand \(BXMW/GS0 Senior With Tapping Bar Sheffield Cycle Stand\)](#)

2. Stand type: Sheffield Cycle Stand
3. Number of stands: Single.
4. Base: Root fixed.
5. Finish as delivered: Stainless steel. 1.4401 (316 grade)
6. Colours: n/a
7. Size:: 800 x 715 mm.
8. Method of fixing: Concrete foundation to engineers specification.

---

## **210B F-17A: Cycle stands above slab**

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1. Manufacturer: [Broxap Ltd](#)
  - 1.1. Contact details
    - 1.1.1. Address: Rowhurst Industrial Estate  
Chesterton  
Newcastle-under-Lyme  
Staffordshire  
ST5 6BD
    - 1.1.2. Telephone: [+44 \(0\)1782 571700](tel:+44(0)1782571700)
    - 1.1.3. Web: [www.broxap.com](http://www.broxap.com)
    - 1.1.4. Email: [nbs@broxap.com](mailto:nbs@broxap.com)
  - 1.2. Product reference: [Sheffield Cycle Stand \(BXMW/GS0 Senior With Tapping Bar Sheffield Cycle Stand\)](#)
2. Stand type: Sheffield Cycle Stand
3. Number of stands: Single.
4. Base: Root fixed. Baseplated.
5. Finish as delivered: Stainless steel. 1.4401 (316 grade)
6. Colours: n/a
7. Size:: 800 x 715 mm.
8. Method of fixing: Concrete foundation to engineers specification.

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## **215A Motorcycle locking point**

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1. Manufacturer: Broxap Ltd.  
A: Rowhurst Industrial Estate, Chesterton, Newcastle-under-Lyme, Staffordshire, ST5 6BD  
T: 01782 564411  
e: [info@broxap.com](mailto:info@broxap.com)
  - 1.1. Product reference: Arbroath Motorcycle Rack
2. Material: Steel
  - 2.1. Finish: Hot-dip galvanized to BS EN ISO 1461 and Polyester powder-coated, as section Z31
  - 2.2. Colour: Anthracite Grey RAL 7016
3. Number of stands: 3 Capacity: 2500mm
4. Accessories: n/a
5. Method of fixing: Base plate bolted to concrete base 100 mm below paving surface

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## **220A F-3 Concrete Bench**

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1. Description: Concrete bench to podium
2. Manufacturer: Bespoke Concrete Products  
A: Tynedale Works, Princess Way, Low Prudhoe, Northumberland NE42 6PL  
T: 01661 839340

- 2.1. Product reference: Newton Bench Solo
3. Material: Precast Buff Concrete
  - 3.1. Finish: Light Acid Etched
  - 3.2. Colour: Buff concrete, to match W-1 & W-2.
4. Size: 2000 x 400 x 450mm
5. Accessories/ Special requirements: 25mm radius to above ground corners
6. Method of fixing: Sat on concrete foundation below resin bound gravel finish.

## **220B F-21 Ventilation Bench**

---

1. Design intent specification, fabricator to provide fabrication drawings prior to manufacture/installation. Allow for developing fixing details and coordination with engineers to agree ventilation requirements.
2. Description: Ventilation bench to podium
3. Manufacturer: Bespoke Concrete Products  
A: Tynedale Works, Princess Way, Low Prudhoe, Northumberland NE42 6PL  
T: 01661 839340
  - 3.1. Product reference: Bespoke concrete ventilation bench
4. Material: Precast Buff Concrete
  - 4.1. Finish: Light Acid Etched
  - 4.2. Colour: Buff concrete, to match W-1 & W-2.
5. Size: 1480mm x 4590mm
6. Seating unit: Timber and metal seat to top of ventilation bench
  - 6.1. Timber : Kebony clear.
    - 6.1.1. Manufacturer: Kebony Norge AS  
+47 96 62 69 91  
nl@kebony.com
    - 6.1.2. Size: 145mm wide x 30mm deep.
  - 6.2. Frame: Galvanised steel frame
    - 6.2.1. Manufacturer: Contractors Choice
    - 6.2.2. Size: 25 x 50mm RHS (3mm thick)
  - 6.3. Fixing: Galvanised steel fixings
7. Ventilation Grille: Ventilation grilles built into bench.
  - 7.1. Manufacturer: Lang + Fulton  
A: Newbridge Industrial Estate, Newbridge, Edinburgh, EH28 8PJ  
T: 0131 441 1255  
E: sales@langandfulton.co.uk
  - 7.2. Product: DeltaWing-90.  
33mm louvre spacing, 90% visual screening, 63% free area
  - 7.3. Free area: Minimum 47% free area
  - 7.4. Size: Structural opening, 300mm high, 1330mm wide.
  - 7.5. Additional requirements: Insect mesh behind the louvre with free area 66%
8. Method of fixing: Type 1 base / Concrete foundation to engineers specification

## **225A F-1 Metal and timber Seat**

---

1. Manufacturer: [Vestre](#)
  - 1.1. Contact details

- 1.1.1. Address: Profile West Suite 2, Floor 1  
950 Great West Road  
Brentford  
TW8 9ES
  - 1.1.2. Telephone: +44(0)207 846 8725
  - 1.1.3. Web: [www.vestre.com](http://www.vestre.com)
  - 1.1.4. Email: [uk@vestre.com](mailto:uk@vestre.com)
  - 1.2. Product reference: [Kong Bench \(Kong Bench - root fixed\)](#)
- 2. Length: 1800 mm.
  - 3. Base: Root.
  - 4. Material: Steel and wood.
  - 5. Finish as delivered: Hot-dip galvanized and powder-coated.
  - 6. Colours: RAL 6033 (all metalwork)
  - 7. Accessories: Armrests to each end. Backrest.
  - 8. Wood species/ Finish: Kebony clear.
  - 9. Width: 399 mm.
  - 10. Height: 450 mm.

---

## **225B F-6 Metal and timber seat**

---

- 1. Manufacturer: [Vestre](#)
    - 1.1. Contact details
      - 1.1.1. Address: Profile West Suite 2, Floor 1  
950 Great West Road  
Brentford  
TW8 9ES
      - 1.1.2. Telephone: +44(0)207 846 8725
      - 1.1.3. Web: [www.vestre.com](http://www.vestre.com)
      - 1.1.4. Email: [uk@vestre.com](mailto:uk@vestre.com)
    - 1.2. Product reference: [Bloc Seat \(Bloc Seat with Armrests: 1517\)](#)
- 2. Length: 1740 mm.
  - 3. Base: Ground mounted.
  - 4. Material: Steel.
  - 5. Finish as delivered: Hot-dip galvanized and powder-coated.
  - 6. Colours: RAL 3027
  - 7. Film thickness (minimum): 8 mm.
  - 8. Wood species/ Finish: Linseed oil proofed Nordic pine.
  - 9. Depth: 670 mm.
  - 10. Backrest height: 790 mm.
  - 11. Height: 460 mm.
  - 12. Armrests: With armrests.
  - 13. Accessories: Not required.

---

## **240A F-20 Litter bins**

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- 1. Manufacturer: [Vestre](#)
  - 1.1. Contact details

1.1.1. Address: Profile West Suite 2, Floor 1  
950 Great West Road  
Brentford  
TW8 9ES

1.1.2. Telephone: +44(0)207 846 8725

1.1.3. Web: [www.vestre.com](http://www.vestre.com)

1.1.4. Email: [uk@vestre.com](mailto:uk@vestre.com)

1.2. Product reference: [Bloc Litter Bin \(Bloc Litter Bin 140 Litres with Ashtray: 1545\)](#)

2. Material: Steel.
3. Base: Anchored bases.
4. Finish as delivered: Hot-dip galvanized and powder-coated.
5. Colours: Grey.
6. Film thickness (minimum): 3 mm.
7. Accessories: Not required.
8. Width: 550 mm.
9. Depth: 450 mm.
10. Height: 922 mm.
11. Capacity: 140 L.
12. Mounting: Ground mounted.

## **340A A-5: Bespoke sculpture Blue Tank Family**

---

1. Landscape design intent only, specification refers to the interface with the landscape items. Refer to 'Art Strategy Approach, 04 November 2019' for details of the art approach and any design intent and fixing for the artwork.
2. Artist: Oliver Barratt - Art Strategy Approach 04 November 2019
3. Description: From art strategy:
  - Standing tanks, distributed in 'family clusters' around the site, and adapted as sculptural pieces for play, climbing, sitting, shelter etc
  - 13 / 14 tanks total, in groups of 3
  - Landscape surfaces to suit, with required adjustments to landscape design
  - Foundations to suit
  - Specialist Lighting
  - Potential to include found-object ladders
4. Material: Steel (TBC)
5. Approximate weight: To be confirmed by artist
6. Approximate size: To be confirmed by artist
7. Delivery/ Handling/ Storage requirements: To be confirmed by artist
8. Method of fixing: Feet bolted or welded to steel brackets to ensure that the concrete foundation is not visible at the surface.  
If all fixing points on the flanges are not used for bolts weld bolt heads to fixing points not used to maintain the original aesthetic of the fixing.
  - 8.1. Bracket finishes:
    - Galvanised for any brackets below ground.
    - Powder coated for any brackets visible above ground.
  - 8.2. Foundation:: Concrete foundation to engineers specification 100mm below paving level.

### **340B A-7: Bespoke sculpture Play Pipes**

---

1. Landscape design intent only, specification refers to the interface with the landscape items. Refer to 'Art Strategy Approach, 04 November 2019' for details of the art approach and any design intent and fixing for the artwork.
2. Artist: Oliver Barratt - Art Strategy Approach 04 November 2019
3. Description: From art strategy:
  - Sculptural pipe installations within landscape along Northern edge, for incidental play, sitting etc
  - Possible inclusion of dials etc
  - Use of colour TBC
4. Material: Steel (TBC)
5. Approximate weight: To be confirmed by artist
6. Approximate size: To be confirmed by artist
7. Delivery/ Handling/ Storage requirements: To be confirmed by artist
8. Method of fixing: Pipes bolted or welded to steel brackets to ensure that the concrete foundation is not visible at the surface.  
If all fixing points on the flanges are not used for bolts weld bolt heads to fixing points not used to maintain the original aesthetic of the fixing.
  - 8.1. Bracket finishes:
    - Galvanised for any brackets below ground.
    - Powder coated for any brackets visible above ground.
  - 8.2. Foundation: Concrete foundation to engineers specification 100mm below paving level.

### **340C A-8a: Bespoke sculpture Red Angular Pipes**

---

1. Landscape design intent only, specification refers to the interface with the landscape items. Refer to 'Art Strategy Approach, 04 November 2019' for details of the art approach and any design intent and fixing for the artwork.
2. Artist: Oliver Barratt - Art Strategy Approach 04 November 2019
3. Description: From art strategy:
  - A selection of angular pipes to create an art work ground fixed.
4. Material: Steel (TBC)
5. Approximate weight: To be confirmed by artist
6. Approximate size: To be confirmed by artist
7. Delivery/ Handling/ Storage requirements: To be confirmed by artist
8. Method of fixing: Pipes bolted or welded to steel brackets or packers to ensure that the concrete foundation is not visible at the surface.  
If all fixing points on the flanges are not used for bolts weld bolt heads to fixing points not used to maintain the original aesthetic of the fixing.
  - 8.1. Bracket finishes:
    - Galvanised for any brackets below ground.
    - Powder coated for any brackets visible above ground.
  - 8.2. Foundation: Concrete foundation to engineers specification 100mm below paving level.

### **340D A-8b: Bespoke sculpture Red Pipes Trim Trial**

---

1. Landscape design intent only, specification refers to the interface with the landscape items. Refer to 'Art Strategy Approach, 04 November 2019' for details of the art approach and any design intent and fixing for the artwork.
2. Artist: Oliver Barratt - Art Strategy Approach 04 November 2019

3. Description: From art strategy:
  - A selection of pipes to create an art work ground mounted. potential to use as benches.
4. Material: Steel (TBC)
5. Approximate weight: To be confirmed by artist
6. Approximate size: To be confirmed by artist
7. Delivery/ Handling/ Storage requirements: To be confirmed by artist
8. Method of fixing: Pipes bolted or welded to steel brackets or packers to ensure that the concrete foundation is not visible at the surface.  
If all fixing points on the flanges are not used for bolts weld bolt heads to fixing points not used to maintain the original aesthetic of the fixing.
  - 8.1. Bracket finishes:
    - Galvanised for any brackets below ground.
    - Powder coated for any brackets visible above ground.
  - 8.2. Foundation: Concrete foundation to engineers specification 100mm below paving / grass level.

---

### **340E                      A-8f: Bespoke sculpture Walking Whisk Lights**

---

1. Landscape design intent only, specification refers to the interface with the landscape items. Refer to 'Art Strategy Approach, 04 November 2019' for details of the art approach and any design intent and fixing for the artwork.
2. Artist: Oliver Barratt - Art Strategy Approach 04 November 2019
3. Material: From art strategy:
  - 16 large whisks (# TBC) mounted in a straight line on bespoke lighting poles
  - Solar powered light fitted on the top and reflectors up and down
  - Reflectors new or found-objects (TBC)
  - All or some of the whisks with a handle at the base to turn – interactive - mechanism solution (TBC)
4. Approximate weight: To be confirmed by artist
5. Approximate size: To be confirmed by artist
6. Delivery/ Handling/ Storage requirements: To be confirmed by artist
7. Method of fixing: Steel bolted or welded to steel brackets or packers to ensure that the concrete foundation is not visible at the surface.  
If all fixing points on the flanges are not used for bolts weld bolt heads to fixing points not used to maintain the original aesthetic of the fixing.
  - 7.1. Bracket finishes:
    - Galvanised for any brackets below ground.
    - Powder coated for any brackets visible above ground.
  - 7.2. Foundation: Concrete foundation to engineers specification 100mm below paving / soil level.

---

### **346 F-18 Timber log piles**

---

1. Supplier: Contractor's choice
2. Material: Hardwood timber logs from broad leaf trees.  
Bark left on the trunks.
3. Approximate size: 800-1100 high  
100-250mm diameter
4. Method of fixing: 6nr stumps stood vertically in topsoil in a cluster. Each stump to touch the adjacent stump. Heights of stumps to vary. 500mm depth of the stump below ground.

## **350A F-19 Ecology Pole, Nesting boxes**

---

1. Design intent specification, fabricator to provide fabrication drawings prior to manufacture/installation. Allow for developing fixing details and coordination with engineers.
2. Description: Bird House Pole
3. Manufacturer: Jupiter Play  
A: 23 Rectory Road, West Bridgford, Nottingham, NG2 6BE  
T: 0115 969 9859  
E: info@jupiterplay.co.uk
  - 3.1. Product reference: BESPOKE-SP33 Ecology Pole
4. Pole: 75mm dia FSc timber pole (minimum 3m tall above ground)
5. Houses: 2nr bird houses per pole
  - 5.1. Type: Mixture of Box 1, Box 2 & Box 3.  
20% Box 1 (190x180x180mm - hole 110x80mm)  
40% Box 2 (365x170x160mm - hole 32mm dia.)  
40% Box 3 (230x160x170mm - hole 26mm dia.)  
Majority of poles to have two different houses. Small number of the poles to have 2nr Box 2 houses.
  - 5.2. Material: Timber
  - 5.3. Colour: Bright colours shown in manufacturer's standard images. Submit samples for approval.
6. Accessories/ Special requirements: Galvanised steel shallow base plate fixing for podium level installation.
7. Method of fixing: Ground floor: Root fixed in concrete foundation to engineers specification.  
Podium: Base plate fixed with galvanised steel shoe to concrete foundation by engineers.

## **Installation**

### **510 Concrete foundations generally**

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1. Standard: To BS 8500-2.
2. Concrete: To engineers specification
3. Admixtures: Do not use.
4. Foundation holes: Neat vertical sides.
5. Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

### **515 Setting components in concrete**

---

1. Holes: To engineers specification
2. Components: Accurately positioned and securely supported.
3. Concrete fill: Fully compacted as filling proceeds.
4. Concrete foundations exposed to view: Compacted until air bubbles cease to appear on the upper surface, then weathered to shed water and trowelled smooth.
5. Temporary component support: Maintain undisturbed for minimum 48 hours.

### **530 Preservative treated timber**

---

1. 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.
2. Heavily worked sections: Re-treat.

### **545 Erection of timber and prefabricated structures**

---

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

### **550 Damage to galvanized surfaces**

---

1. **Minor damage in areas up to 40 mm<sup>2</sup> (including on fixings and fittings):** Make good.
  - 1.1. **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.
  - 1.2. **Thickness:** Sufficient to provide a zinc coating at least equal to the original layer.

### **560 Site painting**

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

Ω End of Section

## Q52

# Play and sports equipment

### General - Not Used

### System performance

#### 210 Design

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1. Design: Complete the design of the bespoke playground equipment.
2. Proposals: Submit drawings, technical information, calculations and manufacturers' literature.

### Products

#### 320A PL-07 Balance beam

---

1. Description: Coffee Park Play
2. Standard: To BS EN 1176-1.
3. Manufacturer: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 3.1. Product reference: Quotation Ref: PE.HS.01  
Outdoor Balance Beam  
Single oak balance beam.
4. Materials: Solid Oak Timber & Stainless Steel fixings
  - 4.1. Finish: Natural
  - 4.2. Colour: None
5. Length: 2 m
6. Height: 300 mm
7. Features:
  - Stainless steel shoes for increasing longevity of items
8. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation.

#### 321A PL-13 Wobble beam

---

1. Description: Canal Side Play
2. Standard: To BS EN 1176-1.
3. Manufacturer: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 3.1. Product reference: Wobble Beam
4. Materials: Solid Oak Timber & Stainless Steel fixings
  - 4.1. Finish: Natural
  - 4.2. Colour: None
5. Length: 2.7 m
6. Height: 400 mm
7. Features:
  - Stainless steel shoes for increasing longevity of items

8. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation.

### **330A Causeway Poles**

---

1. Description: Canal side play area
2. Standard: To BS EN 1176-1.
3. Manufacturer: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 3.1. Product reference: Causeway Poles
4. Type: Stepping Stilts
5. Materials: Solid Oak Timber & Stainless Steel fixings
  - 5.1. Finish: Natural
  - 5.2. Colour: None
6. Plan size: 3750x450mm
7. Height: 2000 (550mm fall height)
8. Features:
  - Stainless steel shoes for increasing longevity of items
9. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation.

### **330B Stepping Poles**

---

1. Description: Stepping poles to podium
2. Standard: To BS EN 1176-1.
3. Manufacturer: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 3.1. Product reference: Quotation Ref: PE.HS.01  
Stepping Poles  
Robinia stepping poles as an interesting trail route.
4. Type: Stepping Stilts
5. Materials: Solid Oak Timber & Stainless Steel fixings
  - 5.1. Finish: Natural
  - 5.2. Colour: None
6. Features:
  - Stainless steel shoes for increasing longevity of items
7. Method of fixing: Shallow proprietary anchored bases to manufacturer's standard fixed to concrete foundation. Reduced build up at roof level.

### **340A PL-14 Play structure**

---

1. Design intent specification, fabricator to provide developed design and fabrication drawings prior to manufacture/installation. Allow for developing design for approval and then preparation of fabrication details for construction.
2. Description: Multiplay structure to podium
3. Standard: To BS EN 1176-1.
4. Manufacturer: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG

T: 0203 627 0769  
E: info@playequip.com

- 4.1. **Product reference:** Quotation Ref: PE.HS.01  
Play Structure  
Play tower with slide, fireman's pole, and steel core scramble net routes.
5. **Components:** Inclined net, Fireman's pole, Slide
6. **Materials:** Solid Oak Timber & Stainless Steel fixings
  - 6.1. **Finish:** Natural
  - 6.2. **Colour:** None
7. **Highest platform height:** 1195mm
8. **Features:**
  - Stainless steel shoes for increasing longevity of items
9. **Method of fixing:** Shallow proprietary anchored bases to manufacturer's standard fixed to concrete foundation. Reduced build up at roof level.

---

### **340B PL-15 Clamber Stack**

1. **Description:** Multiplay structure to podium
2. **Standard:** To BS EN 1176-1.
3. **Manufacturer:** Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 3.1. **Product reference:** Quotation Ref: PE.HS.01  
Robinia Clamber Stack  
Multi level climbing frame made out of Robinia hardwood with steel core connecting nets and ropes
4. **Components:** Net, climbing poles
5. **Materials:** Solid Robinia Timber & Stainless Steel fixings
  - 5.1. **Finish:** Natural
  - 5.2. **Colour:** None
6. **Highest platform height:** To be confirmed by supplier
7. **Features:**
  - Stainless steel shoes for increasing longevity of items
8. **Method of fixing:** Shallow proprietary anchored bases to manufacturer's standard fixed to concrete foundation. Reduced build up at roof level.

---

### **340C PL-15 Clamber Stack 2**

1. **Description:** Multiplay structure to podium
2. **Standard:** To BS EN 1176-1.
3. **Manufacturer:** Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 3.1. **Product reference:** Quotation Ref: PE.HS.01  
Robinia Clamber Stack 2  
Large multi level climbing frame made out of Robinia hardwood with steel core connecting nets and ropes.
4. **Components:** Net, climbing poles

5. **Materials:** Solid Robinia Timber & Stainless Steel fixings
  - 5.1. **Finish:** Natural
  - 5.2. **Colour:** None
6. **Highest platform height:** To be confirmed by supplier
7. **Features:**
  - Stainless steel shoes for increasing longevity of items
8. **Method of fixing:** Shallow proprietary anchored bases to manufacturer's standard fixed to concrete foundation. Reduced build up at roof level.

---

### **350A PL-08 Musical Play Chimes**

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1. **Description:** Sandow Square
2. **Standard:** To BS EN 1176-1.
3. **Manufacturer:** Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 3.1. **Product reference:** Quotation Ref: PE.HS.01  
Chimes  
Percussion Chimes with beaters.
4. **Sensory features:** Aural
5. **Components:** Chimes
6. **Materials:** Stainless steel
  - 6.1. **Finish:** Matt brushed finish
  - 6.2. **Colour:** None
7. **Size:** 8nr Chimes  
1400mm wide 1100mm high
8. **Features:**
  - Rubber coated beaters
  - Stainless steel shoes for increasing longevity of items
9. **Method of fixing:** Proprietary anchored bases to manufacturer's standard fixed to concrete foundation.

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### **355A PL-11 Sailing boat**

---

1. **Design intent specification,** fabricator to provide developed design and fabrication drawings prior to manufacture/installation. Allow for developing design for approval and then preparation of fabrication details for construction.
2. **Description:** Canal side play
3. **Standard:** To BS EN 1176-1.
4. **Manufacturer:** Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 4.1. **Product reference:** Quotation Ref: PE.HS.01  
Play Boat  
Large wooden ship, climbing and imagination play feature.  
(Submit detail drawings prior to fabrication)  
\*\* Equipment to have design features that are inclusive and allow access for less able bodied users.
5. **Components:** Slide, climbing rope net, Imaginative Play: Wheel, Mast and Flag. Ramp Access.
6. **Materials:** Solid Oak Timber & Stainless Steel

- 6.1. Finish: Natural
- 6.2. Colour: None
7. Highest platform height: 0.6 m
8. Features:
  - Stainless steel shoes for increasing longevity of items
9. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation.

### **356A PL-05 Play Train**

---

1. Design intent specification, fabricator to provide developed design and fabrication drawings prior to manufacture/installation. Allow for developing design for approval and then preparation of fabrication details for construction.
2. Description: Coffee park play
3. Standard: To BS EN 1176-1.
4. Manufacturer: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
- 4.1. Product reference: Quotation Ref: PE.HS.01  
Play Train  
Large multi piece train as climbing structure encouraging imaginative pretend play. To match principles of Richter Spielgeräte Product: 4.24100 Big Railway. (Submit detail drawings prior to fabrication)  
\*\* Equipment to have design features that are inclusive and allow access for less able bodied users.
5. Components: Train and 3nr carriages. Imaginative play features such as chimney, cab, seating carriages, freight carriages.
6. Materials: Solid Oak Timber & Stainless Steel
  - 6.1. Finish: Natural
  - 6.2. Colour: None
7. Highest platform height: 0.6 m
8. Features:
  - Stainless steel shoes for increasing longevity of items
9. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation.

### **360A PL-02 Play Boulders**

---

1. Description: Ground and Podium Play Areas
2. Standard: To BS EN 1176-1.
3. Supplier: CED Stone Ltd.  
A: Trout Road, West Drayton, Middlesex UB7 7RS  
T: 01895 422 411  
E: sales@cedstone.co.uk
4. Product: Play Boulders
5. Materials: Glacial boulders
  - 5.1. Finish: Natural
6. Size: PL-02(A): 1300-1800 x 700-1000 x 400-700mm  
PL-02(B): 900-1200 x 500-800 x 400-700mm
7. Method of fixing: Set in concrete below surrounding surface.

### **361A PL-03 Playground Logs**

---

1. Description: Sandow Square and Coffee Park Play Areas
2. Standard: To BS EN 1176-1.
3. Supplier: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
4. Product: Quotation Ref: PE.HS.01  
Oak playground logs (without bark)  
Large oak feature logs for climbing and seating.
5. Materials: Oak  
5.1. Finish: Natural - bark removed
6. Size: Length: 3000-4000mm  
Diameter: 400-700mm  
Minimum 2nr branches
7. Method of fixing: Laid flat. Set in concrete below surrounding surface.

### **365A F-4: Concrete chess table and seats**

---

1. Description: Bespoke concrete table tennis and 2nr seats
2. Standard: To BS EN 1176-1.
3. Manufacturer: Bespoke Concrete Products  
A: Tynedale Works, Princess Way, Low Prudhoe, Northumberland NE42 6PL  
T: 01661 839340
4. Materials: Precast concrete  
4.1. Finish: Buff Concrete, Light Acid Etch Finish
5. Size: 600x600mm square table top  
450x450mm square seats with backrest.
6. Height: Seat 450mm  
Table 760mm
7. Method of fixing: Set in concrete below surrounding paved surface.

### **365B F-5: Table tennis**

---

1. Description: Metal table tennis
2. Standard: To BS EN 1176-1.
3. Manufacturer: Cornilleau UK  
Core Leisure Limited trading as Cornilleau UK  
A: Unit 4 Lloyds Court, Manor Royal, Crawley, West Sussex. RH10 9QU  
T: +44 (0) 1293 243980
4. Product: PARK Outdoor Table
5. Materials: Resin laminate 9 mm  
Hot dip galvanised steel
6. Size: 274 x 167 x 76 cm (L x W x H)
7. Height: 76cm
8. Accessories: Anchorage Kit for Park Table
9. Method of fixing: Socket base set in concrete

### **380A PL-10 Talking Tube**

---

1. Description: Ground and Podium Play Areas

2. Standard: To BS EN 1176-1.
3. Manufacturer: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 3.1. Product reference: Quotation Ref: PE.HS.01  
Talk Tube / Playground Telephones
4. Materials: Stainless steel
  - 4.1. Finish: Matt, brushed finish
  - 4.2. Colour: None
5. Size: 1m Tall
6. Features:
  - 15m of 30mm bend proof and pressure proof linking pipe with steel inlay
7. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation. Shallow fixing at roof level.

### **381A PL-04 Activity Panel**

---

1. Description: Coffee Park Play Area
2. Standard: To BS EN 1176-1.
3. Manufacturer: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 3.1. Product reference: Activity Panel
4. Materials: Solid Oak Timber & Stainless Steel
  - 4.1. Finish: Natural and Yellow
  - 4.2. Colour: Yellow spinning drums
5. Size: 1270mm Tall, 1000mm wide. 150mm square posts
6. Features:
  - Stainless steel shoes for increasing longevity of items
7. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation. Shallow fixing at roof level.

### **390A PL-01 Spring Disks**

---

1. Description: Ground floor and podium play areas
2. Standard: To BS EN 1176-1 and -6.
3. Manufacturer: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 3.1. Product reference: Quotation Ref: PE.HS.01  
Spring Disks
4. Type: Wobble springy disks
5. Materials: Robinia timber and powder coated steel
  - 5.1. Finish: Polyester powder coated metal
  - 5.2. Colour: RAL 3000 red
6. Features: n/a

7. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation. Shallow fixing at roof level.

### **390B PL-16 Seesaw**

---

1. Description: See saw to podium
2. Standard: To BS EN 1176-1 and -6.
3. Manufacturer: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 3.1. Product reference: Quotation Ref: PE.HS.01  
Solid oak see-saw
4. Type: See-saw
5. Number of seats: 2
6. Materials: Solid Oak Timber & Stainless Steel
  - 6.1. Finish: Natural
  - 6.2. Colour: n/a
7. Features:
  - Stainless steel shoes for increasing longevity of items
8. Method of fixing: Shallow proprietary anchored bases to manufacturer's standard fixed to concrete foundation. Reduced build up at roof level.

### **430A PL-06 Small Roundabout**

---

1. Description: Coffee Park Play
2. Standard: To BS EN 1176-1 and -5.
3. Manufacturer: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 3.1. Product reference: Quotation Ref: PE.HS.01  
Small Roundabout  
Metal framed carousel roundabout.
4. Type, to BS EN 1176-5: B
5. Materials: Stainless steel
  - 5.1. Finish: Matt brushed finish
  - 5.2. Colour: None
6. Diameter: 1300mm
7. Deck height: 150 mm
8. Features: Speed restrictor
9. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation.

### **440A PL-09 Cantilever Swing**

---

1. Description: Sandow Square
2. Standard: To BS EN 1176-1 and -2.
3. Manufacturer: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com

- 3.1. Product reference: Quotation Ref: PE.HS.01  
Cantilever Swing.  
Heavy duty Oak single beam swing with group basket swing fixing.
4. Type: 3
5. Frame: Cantilevered
  - 5.1. Materials: Solid Oak Timber & Stainless Steel
  - 5.2. Finish: Natural
  - 5.3. Colour: None
  - 5.4. Height: 3.2m
6. Seats: Mesh basket swing
  - 6.1. Materials: Manufacturer's standard
  - 6.2. Ground clearance: Manufacturer's standard
7. Features:
  - Anti-wrap chain
  - Integral safety guards
  - Stainless steel shoes for increasing longevity of items
8. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation.

#### **441A PL-19 Nursery Swing**

---

1. Description: Podium garden
2. Standard: To BS EN 1176-1 and -2.
3. Manufacturer: Play Equip Ltd.  
A: Studio 21, 38 Crawley Road, London. N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 3.1. Product reference: Nursery Swing
4. Type: 2
5. Frame: Basket
  - 5.1. Materials: Solid Oak Timber & Stainless Steel
  - 5.2. Finish: Natural
  - 5.3. Colour: None
  - 5.4. Height: 1.5m
6. Seats: Mesh basket swing
  - 6.1. Materials: Manufacturer's standard
  - 6.2. Ground clearance: Manufacturer's standard
7. Features:
  - Anti-wrap chain
  - Integral safety guards
  - Stainless steel shoes for increasing longevity of items
8. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation. Shallow fixing at roof level.

#### **560A F-11: Exercise equipment - Log Hops**

---

1. Description: Coffee park
2. Manufacturer: Playequip Ltd.  
A: Studio 21, 38 Crawley Road, London N22 6AG

T: 0203 627 0769  
E: info@playequip.com

2.1. Product reference: Quotation Ref: PE.HS.01  
Up and Unders  
Multi level beams as an exercise station.

3. Type: Hurdles

4. Materials: Solid Oak Timber & Stainless Steel

4.1. Finish: Natural

5. Size: 2.5x3.55m. 550 and 1050mm high.

6. Features:

- Stainless Steel Instructional Plate
- Stainless steel shoes for increasing longevity of items

7. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation.

### **560B F-12: Exercise equipment - Incline sit up**

---

1. Description: Coffee park

2. Manufacturer: Playequip Ltd.

A: Studio 21, 38 Crawley Road, London N22 6AG

T: 0203 627 0769

E: info@playequip.com

2.1. Product reference: Quotation Ref: PE.HS.01  
Double Sit Up Bench  
Sloped wooden sit up structure as an exercise station.

3. Type: Sit-up bench

4. Materials: Solid Oak Timber & Stainless Steel

4.1. Finish: Natural

5. Size: 1.25x2.05m. 350mm high

6. Features:

- Stainless Steel Instructional Plate
- Stainless steel shoes for increasing longevity of items

7. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation.

### **560C F-13: Exercise equipment - Monkey Bars**

---

1. Description: Coffee Park

2. Manufacturer: Playequip Ltd.

A: Studio 21, 38 Crawley Road, London N22 6AG

T: 0203 627 0769

E: info@playequip.com

2.1. Product reference: Quotation Ref: PE.HS.01  
Wooden Monkey Bars  
Solid oak framed monkey bars as an upper body strength exercise station.

3. Type: Monkey bars

4. Materials: Solid FSC Oak Timber & Stainless Steel

4.1. Finish: Natural

5. Size: 4.2m x 1.3m. 2.4m high

6. Features:

- Stainless Steel Instructional Plate

- Stainless steel shoes for increasing longevity of items
7. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation.

## **560D F-14: Exercise equipment - Step up station**

---

1. Description: Coffee Park
2. Manufacturer: Playequip Ltd.  
A: Studio 21, 38 Crawley Road, London N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 2.1. Product reference: Quotation Ref: PE.HS.01  
Step-Up Steps  
Solid oak tiered steps for a multitude of leg exercises.
3. Type: Step Up
4. Materials: Solid FSC Oak Timber & Stainless Steel Fixings
  - 4.1. Finish: Natural
5. Size: 1.5 x 0.6m 0.25cm wide
6. Features:
  - Stainless Steel Instructional Plate
  - Stainless steel shoes for increasing longevity of items
7. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation.

## **560E F-15: Exercise equipment - Chin up bars**

---

1. Description: Sandow Square
2. Manufacturer: Playequip Ltd.  
A: Studio 21, 38 Crawley Road, London N22 6AG  
T: 0203 627 0769  
E: info@playequip.com
  - 2.1. Product reference: Quotation Ref: PE.HS.01  
Triple Outdoor Pull-Up Bars  
Three pull up bars on hardwood posts as an exercise station.
3. Type: Chin-up bars
4. Materials: Solid FSC Oak Timber & Stainless Steel
  - 4.1. Finish: Natural
5. Size: 3.6 x 2.5m. 150mm square posts
6. Features:
  - Stainless Steel Instructional Plate
  - Stainless steel shoes for increasing longevity of items
7. Method of fixing: Proprietary anchored bases to manufacturer's standard fixed to concrete foundation.

## **Execution**

### **710 Play equipment installation generally**

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1. Standard: To manufacturer's written instructions provided in accordance with BS EN 1176-1.

### **720 Concrete foundations generally**

---

1. Standard: To BS 8500-2.

2. Concrete: Designated, not less than GEN 1 or Standard prescribed, not less than ST2.
3. Admixtures: Do not use.
4. Foundation holes: Neat vertical sides.
5. Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

## **725 Setting components in concrete**

---

1. Holes: Foundation to manufacturers & engineers specification.
2. Components: Accurately positioned and securely supported.
3. Concrete fill: Fully compacted as filling proceeds.
4. Concrete foundations exposed to view: Finished to weathering profile to shed water and trowel smooth.
5. Temporary component support: Maintain undisturbed for minimum 48 hours.

## **740 Preservative treated timber**

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1. 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.

## **750 Damage to galvanized surfaces**

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1. Minor damage in areas up to 40 mm<sup>2</sup> (including on fixings and fittings): Make good.
  - 1.1. Materials: 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.
  - 1.2. Thickness: Sufficient to provide a zinc coating at least equal to the original layer.

## **760 Site painting**

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1. Timing: Prepare surfaces and apply finishes as soon as possible after installing components.

## **Completion**

### **910 Inspection**

---

1. Standard: To BS EN 1176-1
2. Provide a ROSPA Post Installation Play Equipment assessment for all play areas
3. Timing: 2 weeks prior to date when work is expected to be practically complete
4. Period of notice (minimum): 3 working days.

### **920 Cleaning**

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

### **930 Testing**

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1. Standard: To BS EN 1176-1.

### **940 Labels**

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1. Standard: To BS EN 1176-1
2. Labels: Provide permanent labelling on all types of play equipment.
3. Location: Where visible when erected on site.

## **950 Documentation**

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1. Standard: To BS EN 1176-1
2. Contents
  - 2.1. Copies of test reports.
  - 2.2. General product information.
  - 2.3. Installation information.
  - 2.4. Inspection and maintenance information.
3. Number of copies: 2
4. Submission: 2 weeks prior to date when work is expected to be practically complete

## **970 Operating tools**

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1. Tools: Supply tools required for operation, maintenance and cleaning purposes.

Ω End of Section

# Z11

## Purpose made metalwork

To be read with preliminaries/ general conditions.

### 310 Materials generally

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1. Grades of metals, section dimensions and properties: To appropriate British Standards. When not specified, select grades and sections appropriate for the purpose.
2. Prefinished metal: May be used if methods of fabrication do not damage or alter appearance of finish, and finish is adequately protected.
3. Fasteners: To appropriate British Standards and, unless specified otherwise, of same metal as component being fastened, with matching coating or finish.

### 320 Steel long and flat products

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1. Hot rolled structural steels (excluding structural hollow sections and tubes): To BS EN 10025-1.
2. Fine grain steels, including special steels: To BS EN 10025-3 and -4.
3. Steels with improved atmospheric corrosion resistance: To BS EN 10025-5.

### 330 Steel plate, sheet and strip

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1. Plates and wide flats, high yield strength steel: To BS EN 10025-6.

### 340 Hot rolled steel plate, sheet and strip

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1. Flat products, high yield strength for cold forming: To BS EN 10149-1, -2 and -3.
2. Carbon steel sheet and strip for cold forming: To BS EN 10111.
3. Narrow strip, formable steel and steel for general engineering purposes: To BS 1449-1.8 and BS 1449-1.14.

### 350 Cold rolled steel plate, sheet and strip

---

1. Steel sections: To BS EN 10162.
2. Flat products, high yield strength micro-alloyed steels for cold forming: To BS EN 10268.
3. Carbon steel flat products for cold forming: To BS EN 10130 and BS EN 10131.
4. Uncoated carbon steel narrow strip for cold forming: To BS EN 10139 and BS EN 10140.
5. Narrow strip steel for general engineering purposes: To BS EN 10132-1, -2, and -3.
6. Carbon steel flat products for vitreous enamelling: To BS EN 10209.

### 360 Coated steel flat products

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1. Hot dip zinc coated carbon steel sheet and strip for cold forming: To BS EN 10346 and BS EN 10143.
2. Hot dip zinc coated structural steel sheet and strip: To BS EN 10143 and BS EN 10346.
3. Hot dip zinc-aluminium (za) coated sheet and strip: To BS EN 10346.
4. Hot dip aluminium-zinc (az) coated sheet and strip: To BS EN 10346.
5. Organic coated flat products: To BS EN 10169.

### 370 Steel structural hollow sections (SHS)

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1. Non alloy and fine grain steels, hot finished: To BS EN 10210-1 and -2.
2. Non-alloy and fine grain steels, cold formed welded: To BS EN 10219-2.
3. Weather resistant steels, hot finished: To BS 7668.

### **380 Other steel sections**

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1. Equal flange tees: To BS EN 10055.
2. Equal and unequal angles: To BS EN 10056-1 and -2.
3. Wire, carbon steel for general engineering purposes: To BS 1052.
4. Wire and wire products, general: To BS EN 10218-2.
5. Tubes
  - 5.1. Seamless circular: To BS EN 10297-1.
  - 5.2. Seamless cold drawn: To BS EN 10305-1.
  - 5.3. Welded and cold sized square and rectangular: To BS EN 10305-5.
  - 5.4. Welded circular: To BS EN 10296-1.
  - 5.5. Welded cold drawn: To BS EN 10305-2.
  - 5.6. Welded cold sized: To BS EN 10305-3.

### **400 Stainless steel products**

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1. Chemical composition and physical properties: To BS EN 10088-1.
2. Sheet, strip and plate: To BS EN 10088-2.
3. Semi-finished products bars, rods and sections: To BS EN 10088-3.
4. Wire: To BS EN 1088-3.
5. Tubes
  - 5.1. Welded circular: To BS EN 10296-2.
  - 5.2. Seamless circular: To BS EN 10297-2.

### **410 Aluminium alloy products**

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1. Designations
  - 1.1. Designation system, chemical composition and forms: To BS EN 573-1, -2, -3 and -5.
  - 1.2. Temper designations: To BS EN 515.
2. Sheet, strip and plate: To BS EN 485-1 to -4.
3. Cold drawn rods, bars and tubes: To BS EN 754-1 and -2.
4. Extruded rods, bars, tubes and profiles: To BS EN 755-1 and -2.
5. Drawn wire: To BS EN 1301-1, -2 and -3.
6. Rivet, bolt and screw stock: To BS 1473.
7. Structural sections: To BS 1161.

## **Fabrication**

### **515 Fabrication generally**

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1. Contact between dissimilar metals in components: Avoid.
2. Finished components: Rigid and free from distortion, cracks, burrs and sharp arrises.
  - 2.1. Moving parts: Free moving without binding.
3. Corner junctions of identical sections: Mitre.

### **520 Cold formed work**

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1. Profiles: Accurate, with straight arrises.

## 525 Adhesive bonding

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1. Preparation of surfaces of metals to receive adhesives
  - 1.1. Degrease.
  - 1.2. Abrade mechanically or chemically etch.
  - 1.3. Prime: To suit adhesive.
2. Adhesive bond: Form under pressure.

## 527 Welding

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1. Description: Landscape Metalwork
2. Welding procedures
  - 2.1. Method and standard: Steel Elements: Metal arc welding to BS EN 1011-1 and -2.  
Stainless Steel Elements: TIG welding to BS EN 1011-3  
Aluminium Alloy Elements: TIG or MIG welding to BS EN 1011-4
  - 2.2. Welding Procedure Specification (WPS): Not required
3. Preparation
  - 3.1. Joint preparation: Clean thoroughly.
  - 3.2. Surfaces of materials that will be self-finished and visible in the completed work: protect from weld splatter.
4. Jointing
  - 4.1. Joints: Fully bond parent and filler metal throughout with no inclusions, holes, porosity or cracks.
  - 4.2. Dissimilar metals: Welding not permitted
  - 4.3. Strength requirements: Welds to achieve design loads.
  - 4.4. Heat straightening: Submit proposals
  - 4.5. Complex assemblies: Agree priority for welding members to minimize distortion caused by subsequent welds.
  - 4.6. Tack welds: Use only for temporary attachment.
  - 4.7. Jigs: Provide to support and restrain members during welding.
  - 4.8. Filler plates: Submit proposals
  - 4.9. Lap joints: Minimum 5 x metal thickness or 25 mm, whichever is greater.
  - 4.10. Weld terminations: Clean and sound.

## 530 Stainless steel fabrication

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1. Guillotining or punching: Do not use for metal thicknesses greater than 10 mm.
2. Thermal cutting
  - 2.1. Carbonation in the heat affected zone: Remove, after cutting.
3. Bending
  - 3.1. Plates or bars: Cold bending radius not less than material thickness.
  - 3.2. Tubes: Cold bending radius not less than 2 x tube diameter.
4. Welding: In addition to general welding requirements:
  - 4.1. Protect adjacent surfaces from weld spatter.
  - 4.2. Pickle all welds before post fabrication treatments.
5. Protection: Provide protection to fabricated components during transit and on site.

## Finishing

### 710 Finishing welded and brazed joints visible in complete work

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1. Standard: To BS EN ISO 8501-3.
  - 1.1. Preparation grade: P3
2. Butt joints: Smooth, and flush with adjacent surfaces.
3. Fillet joints: Neat.
4. Grinding: Grind smooth where indicated on drawings.

### 745 Preparation for application of coatings

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1. General: Complete fabrication, and drill fixing holes before applying coatings.
2. Paint, grease, flux, rust, burrs and sharp arrises: Remove.

### 750 Liquid organic coating for aluminium alloy components

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1. Standard: To BS 4842.

### 780 Galvanizing

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1. Standard: To BS EN ISO 1461.
2. Preparation
  - 2.1. Vent and drain holes: Provide in accordance with BS EN ISO 14713-1 and -2. Seal after sections have been drained and cooled.
  - 2.2. Components subjected to cold working stresses: Heat treat to relieve stresses before galvanizing.
  - 2.3. Welding slag: Remove.
  - 2.4. Component cleaning: To BS EN ISO 8501-3.
  - 2.5. Grade: St 2½

## Completion

### 910 Documentation

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1. Submit
  - 1.1. Manufacturer's maintenance instructions.
  - 1.2. Guarantees, warranties, test certificates, record schedules and log books.

### 920 Completion

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1. Protection: Remove.
2. Cleaning and maintenance: Carry out in accordance with procedures detailed in fabricators' guarantees.

Ω End of Section

## Z20

# Fixings and adhesives

### Products

#### 310 Fasteners generally

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1. Materials: To have:
  - 1.1. Bimetallic corrosion resistance appropriate to items being fixed.
  - 1.2. Atmospheric corrosion resistance appropriate to fixing location.
2. Appearance: Submit samples on request.

#### 320 Packings

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1. Materials: Noncompressible, corrosion proof.
2. Area of packings: Sufficient to transfer loads.

#### 330 Nailed timber fasteners

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1. Nails
  - 1.1. Steel: To BS 1202-1 or BS EN 10230-1.
  - 1.2. Copper: To BS EN 1202-2.
  - 1.3. Aluminium: To BS 1202-3.

#### 340 Masonry fixings

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1. Light duty: Plugs and screws.
2. Heavy duty: Expansion anchors or chemical anchors.

#### 350 Plugs

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1. Type: Proprietary types to suit substrate, loads to be supported and conditions expected in use.

#### 360 Anchors

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1. Types
  - 1.1. Expansion: For use in substrate strong enough to resist forces generated by expansion of anchor.
  - 1.2. Adhesive or chemical
    - 1.2.1. For use in substrate where expansion of anchor would fracture substrate.
    - 1.2.2. For use in irregular substrate where expansion anchors cannot transfer load on anchor.
  - 1.3. Cavity: For use where the anchor is retained by toggles of the plug locking onto the inside face of the cavity.

#### 370 Wood screws

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1. Type
  - 1.1. Wood screws (traditional pattern).
    - 1.1.1. Standard: To BS 1210.
  - 1.2. Wood screws.
    - 1.2.1. Pattern: Parallel, fully threaded shank or twin thread types.
2. Washers and screw cups: Where required are to be of same material as screw.

### **380 Miscellaneous screws**

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1. Type: To suit the fixing requirement of the components and substrate.
  - 1.1. Pattern: Self-tapping, metallic drive screws, or power driven screws.
2. Washers and screw cups: Where required to be of same material as screw.

### **390 Adhesives**

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1. Standards
  - 1.1. Hot-setting phenolic and aminoplastic: To BS 1203.
  - 1.2. Thermosetting wood adhesives: To BS EN 12765.
  - 1.3. Thermoplastic adhesives: To BS EN 204.

### **410 Powder actuated fixing systems**

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1. Types of fastener, accessories and consumables: As recommended by tool manufacturer.

## **Execution**

### **610 Fixing generally**

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1. Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.
2. Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers/ sleeves to avoid bimetallic corrosion.
3. Appearance: Fixings to be in straight lines at regular centres.

### **620 Fixing through finishes**

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1. Penetration of fasteners and plugs into substrate: To achieve a secure fixing.

### **630 Fixing packings**

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1. Function: To take up tolerances and prevent distortion of materials and components.
2. Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.
3. Locations: Not within zones to be filled with sealant.

### **640 Fixing cramps**

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1. Cramp positions: Maximum 150 mm from each end of frame sections and at 600 mm maximum centres.
2. Fasteners: Fix cramps to frames with screws of same material as cramps.
3. Fixings in masonry work: Fully bed in mortar.

### **650 Nailed timber fixing**

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1. Penetration: Drive fully in without splitting or crushing timber.
2. Surfaces visible in completed work: Punch nail heads below wrot surfaces.
3. Nailed timber joints: Two nails per joint (minimum), opposed skew driven.

### **660 Screw fixing**

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1. Finished level of countersunk screw heads
  - 1.1. Exposed: Flush with timber surface.
  - 1.2. Concealed (holes filled or stopped): Sink minimum 2 mm below surface.

### **670 Pelleted countersunk screw fixing**

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1. Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
2. Pellets: Cut from matching timber, match grain and glue in to full depth of hole.
3. Finished level of pellets: Flush with surface.

### **680 Plugged countersunk screw fixing**

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1. Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
2. Plugs: Glue in to full depth of hole.
3. Finished level of plugs: Projecting above surface.

### **690 Using powder actuated fixing systems**

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1. Powder actuated fixing tools: To BS 4078-2 and Kitemark certified.
2. Operatives: Trained and certified as competent by tool manufacturer.

### **700 Applying adhesives**

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1. Surfaces: Clean. Adjust regularity and texture to suit bonding and gap filling characteristics of adhesive.
2. Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
3. Finished adhesive joints: Fully bonded. Free of surplus adhesive.

Ω End of Section

## Z21 Mortars

### Cement gauged mortars

#### 110 Cement gauged mortar mixes

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1. Specification: Proportions and additional requirements for mortar materials are specified elsewhere.

#### 120 Sand for site made cement gauged masonry mortars

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1. Standard: To BS EN 13139.
2. Grading: 0/2 (FP or MP).
  - 2.1. Fines content where the proportion of sand in a mortar mix is specified as a range (e.g. 1:1: 5-6):
    - 2.1.1. Lower proportion of sand: Use category 3 fines.
    - 2.1.2. Higher proportion of sand: Use category 2 fines.
3. Sand for facework mortar: Maintain consistent colour and texture. Obtain from one source.

#### 160 Cements for mortars

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1. Cement: To BS EN 197-1 and CE marked.
  - 1.1. Types: Portland cement, CEM I.
    - 1.1.1. Portland limestone cement, CEM II/A-L or CEM II/A-LL.
2. Portland slag cement, CEM II/B-S.
3. Portland fly ash cement, CEM II/B-V.
  - 3.1. Strength class: 32.5, 42.5 or 52.5.
4. White cement: To BS EN 197-1 and CE marked.
  - 4.1. Type: Portland cement, CEM I.
  - 4.2. Strength class: 52.5.
5. Sulfate resisting Portland cement
  - 5.1. Type: To BS EN 197-1 Sulfate resisting Portland cement, CEM I/SR and CE marked.
6. To BS EN 197-1 fly ash cement, CEM II/B-V and CE marked.
  - 6.1. Strength class: 32.5, 42.5 or 52.5.
7. Masonry cement: To BS EN 413-1 and CE marked.
  - 7.1. Class: MC 12.5.

#### 180 Admixtures for site made cement gauged mortars

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1. Air entraining (plasticizing) admixtures: To BS EN 934-3 and compatible with other mortar constituents.
2. Other admixtures: Submit proposals.
3. Prohibited admixtures: Calcium chloride, ethylene glycol and any admixture containing calcium chloride.

#### 190 Retarded ready to use cement gauged mortar

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1. Standard: To BS EN 998-2.
2. Lime for cement:lime:sand mortars: Nonhydraulic to BS EN 459-1.
  - 2.1. Type: CL 90S.

3. Pigments for coloured mortars: To BS EN 12878.
4. Time and temperature limitations: Use within limits prescribed by mortar manufacturer.
  - 4.1. Retempering: Restore workability with water only within prescribed time limits.

## **200 Storage of cement gauged mortar materials**

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1. Sands and aggregates: Keep different types/ grades in separate stockpiles on hard, clean, free-draining bases.
2. Factory made ready-mixed lime:sand/ ready to use retarded mortars: Keep in covered containers to prevent drying out or wetting.
3. Bagged cement/ hydrated lime: Store off the ground in dry conditions.

## **210 Making cement gauged mortars**

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1. Batching: By volume. Use clean and accurate gauge boxes or buckets.
  - 1.1. Mix proportions: Based on dry sand. Allow for bulking of damp sand.
2. Mixing: Mix materials thoroughly to uniform consistency, free from lumps.
  - 2.1. Mortars containing air entraining admixtures: Mix mechanically. Do not overmix.
3. Working time (maximum): Two hours at normal temperatures.
4. Contamination: Prevent intermixing with other materials.

### **Lime:sand mortars - Not Used**

Ω End of Section



Specification created using NBS Chorus