

HFSK_ Landscape Spec

15 August 2014

Table of Contents

Title		Page
Q	Paving/Planting/Fencing/Site furniture	3
Q10	Kerbs/ edgings/ channels/ paving accessories	5
Q25	Slab/ brick/ sett/ cobble pavings	9
Q28	Topsoil and growing media	13
Q31	External planting	17
Q40	Fencing	26
Q41	Barriers/ guardrails	30
Q50	Site/ street furniture/ equipment	32

Q

Paving/Planting/Fencing/Site furniture

Q10

Kerbs/ edgings/ channels/ paving accessories

Revision B

Q10 Kerbs/ edgings/ channels/ paving accessories

To be read with Preliminaries/General conditions.

TYPES OF KERBS/EDGINGS AND CHANNELS

- 110 PROPRIETARY PRECAST CONCRETE KERBS TO PAVING/TARMAC AREA EDGES/PLANTBEDS
- Standard: To BS EN 1340.
 - Manufacturer: Marshalls.
 - - Product reference: Marshalls (equal or approved).
 - Recycled content: As manufactured.
 - Designations: EF Edging, flat top.
 - Size (width x height x length): 50 x 150 x 915 mm.
 - Special shapes: None.
 - Finish: As cast.
 - Colour: Natural.
 - Bedding: Cement mortar.
 - Joints generally: Narrow mortar.
 - Sealant movement joints: At 15 m (maximum) centres.
(Revised - Q10 revision B - 25th Apr 2014)
- 111 PROPRIETARY PRECAST CONCRETE KERBS TO CAR PARK
- Standard: To BS EN 1340.
 - Manufacturer: Marshalls.
 - - Product reference: Standard).
 - Recycled content: As manufactured.
 - Designations: HB2 Kerb, half battered.
 - Size (width x height x length): 125 x 255 x 915 mm or to match existing..
 - Special shapes: Dropper kerbs DL2 and DR2 to footway crossings and Quadrant kerbs as shown on drawings.
 - Finish: As cast.
 - Colour: Natural.
 - Bedding: Cement mortar.
 - Joints generally: Narrow mortar.
 - Sealant movement joints: At 15 m (maximum) centres.

ROADS/PAVING ACCESSORIES/MARKING

- 395 ROAD MARKING (THERMOPLASTIC)
- Standard: Road Safety Markings Association standard specification document for road marking and road studs (StanSpec).
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Colour: White for parking spaces
Blue for netball court
Red for basketball court
Yellow for tennis court
 - .
 - Retroreflectivity to BS EN 1436: Class R2.

LAYING**510 LAYING KERBS, EDGINGS AND CHANNELS**

- Cutting: Neat, accurate and without spalling. Form neat junctions.
 - Long units (450 mm and over) minimum length after cutting: 300 mm.
 - Short units minimum length after cutting: The lower of one third of their original length or 50 mm.
- Bedding of units: Positioned true to line and levelled along top and front faces, in a mortar bed on accurately cast foundations or on a race of fresh concrete.
- Securing of units: After bedding has set, secured with a continuous haunching of concrete or on a race of fresh concrete with backing concrete cast monolithically.

520 ADVERSE WEATHER

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

530 CONCRETE FOR FOUNDATIONS, RACES AND HAUNCHING

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

540 CEMENT MORTAR BEDDING

- General: To section Z21.
- Mix (Portland cement:sand): 1:3.
 - Portland cement: Class CEM I 42.5 to BS EN 197-1.
 - Sand: to BS EN 12620, grade 0/4 or 0/2 (MP).
- Bed thickness: 12-40 mm.

547 BEDDING/BACKING OF UNITS ON FRESH CONCRETE RACES

- Standard: To BS 7533-6.

570 CHANNELS

- Installation: To an even gradient, without ponding or backfall.
- Lowest points of channels: 6 mm above drainage outlets.

580 DRAINAGE CHANNEL SYSTEMS

- Installation: To an even gradient, without ponding or backfall. Commence laying from outlets.
- Silt and debris: Removed from entire system immediately before handover.
- Washing and detritus: Safely disposed without discharging into sewers or watercourses.

600 RADIUS KERBS/CHANNELS

- Usage: Radii of 15 m or less.

610 ANGLE KERBS

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

620 ACCURACY

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

Q10

630 NARROW MORTAR JOINTS

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

640 TOOLED MORTAR JOINTS

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

650 SEALANT MOVEMENT JOINTS

- Joint filler: Compressible cellular rubber or plastics compatible with specified sealant.
- 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.
- Joint width: 6 mm.
- Sealant: Submit proposals.
 - Colour: Natural.
- Sealant application: As section Z22.

Q25

Slab/ brick/ sett/ cobble pavings

Revision C

Q25 Slab/ brick/ sett/ cobble pavings

To be read with Preliminaries/ General conditions.

GENERAL

120 CONCRETE FLAG PAVING SYSTEM TO EXTERNAL TEACHING AREAS

- Granular sub-base: Contractor's choice.
 - Thickness: to SE details.
- Base: concrete base with appropriate movement joints to SE specification.
 - Thickness: 150mm.
- Laying course: Ready mixed mortar.
 - Accessories: None.
- Paving units: Concrete paving slabs.
- Jointing: Ready mixed mortar.
 - Bond: As indicated on drawings.
- Accessories: Pin Kerbs, as section Q10.
(Revised - Q25 revision C - 15th Aug 2014)

PRODUCTS

305 GRANULAR MATERIAL FOR LAYER OVER EXISTING BASES

- Material: Highways Agency Type 1 granular material, as section Q20.

315 CONCRETE FLAGS TO EXTERNAL TEACHING AREAS

- Standard: To BS EN 1339.
 - Manufacturer: Marshalls plc..
Product reference: Saxon Concrete Flag Paving.
- Recycled content: see manufacturers information.
- Colour: Natural.
 - Finish: Exposed aggregate.
 - Nominal sizes: 400 x 400 x 50 mm or 450 x 450 x 50mm whichever is appropriate for the path width..
- Arrises: Chamfered.
- Water absorption and freeze/ thaw resistance class: see manufacturers information.
- Bending strength class: see manufacturers information.
- Abrasion resistance class: see manufacturers information.
- Breaking load class: see manufacturers information.
(Revised - Q25 revision C - 15th Aug 2014)

EXECUTION**620 ADVERSE WEATHER**

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

625 LAYING PAVINGS - GENERAL

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

630 LEVELS OF PAVING

- Permissible deviation from specified levels:
 - Generally: ± 6 mm.
- Height of finished paving above features:
 - At gullies: +6 to +10 mm.
 - At drainage channels and kerbs: +3 to +6 mm.

635 REGULARITY

- Maximum variation in gap under a 3 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 10 mm.
- Sudden irregularities: Not permitted.
- Difference in level between adjacent blocks/ pavers/ setts (maximum): 2 mm.

640 COLOUR BANDING

- General: Unless premixed by manufacturer, select from at least 4 separate packs in rotation to avoid colour banding.

645 PROTECTION

- Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
- Materials storage: Do not overload pavings with stacks of materials.
- Handling: Do not damage paving unit corners, arrises, or previously laid paving.
- Mortar bedded pavings: Keep free from traffic after laying:
 - Pedestrian traffic (minimum): 4 days.
 - Vehicular traffic (minimum): 10 days.
- Access: Restrict access to paved areas to prevent damage from site traffic and plant.

Q25

650 CEMENTITIOUS BASES AND SUB-BASES

- General: Protect from moisture loss, if not covered by another pavement course within 2 hours of completion.

655 CONDITION OF SUB-BASES/ BASES BEFORE SPREADING LAYING COURSE

- Trenches and excavation of soft or loose spots in subgrade: Fill and thoroughly compact.
- Granular surfaces: Lay and compact so as to be sound, clean, smooth and close-textured enough to prevent migration of bedding/ laying course materials into the sub-base during compaction and use, free from movement under compaction plant and free from compaction ridges, cracks and loose material.
- Prepared existing and new bound bases (roadbases): Sound, clean, free from rutting or major cracking. Remove sharp stones, projections and debris.
- Sub-base/ Roadbase level tolerances: To BS 7533-7, Annex A.
- Levels and falls: Accurate and within the specified tolerances.
- Drainage outlets: Within 0-10 mm of the required finished level.
- Features in sand bedded paving (including mortar bedded restraints and drainage ironwork): Complete to required levels; adequately bed and haunch in mortar.
- Sub-bases containing cement/ hydraulic binder: Cure for minimum times specified in BS 7533-4.

695 SITE MIXED MORTAR - LAYING COURSE FOR CONCRETE FLAG PAVING

- Mix: 1:3 cement:sand.
- Consistency: Workable.
- Admixtures: None.

716 LAYING SLAB PAVING - MORTAR LAYING COURSE AND JOINTING

- Standard generally: In accordance with BS 7533-4.
- Flag installation and cutting: To Interpave 'Concrete flag paving'.
- Laying course:
 - Nominal thickness: 30 mm after compaction.
- Laying and jointing: as specified in clauses.
- Joint width (nominal): 5 mm.

COMPLETION

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

- Sand dressing: Leave a thin layer of dry jointing sand over the paving.
- Final compaction of the surface course: In accordance with BS 7533-3.
- Vacuum cleaning machines: Not allowed.

Q28

Topsoil and growing media

Q28 Topsoil and growing media

To be read with Preliminaries/ General conditions.

- 200 GRADING SUBSOIL
- General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
 - Areas of thicker topsoil: Excavate locally.
- 250 SUBSOIL SURFACE PREPARATION
- General: Excavate and/ or place fill to required profiles and levels, as section D20.
 - Loosening:
 - Light and noncohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 300 mm.
 - Stiff clay and cohesive subsoils: When ground conditions are reasonably dry, loosen thoroughly to a depth of 450 mm.
 - Rock and chalk subgrades: Lightly scarify to promote free drainage.
 - Stones: Immediately before spreading topsoil, remove stones larger than 50 mm.
 - Remove Arisings, contaminants and debris and Builders rubble.
- 260 INSPECTING FORMATIONS
- Give notice: Before spreading topsoil for lawn areas and planting beds.
 - Notice period: 7 days.
- 310 PREPARATION OF UNDISTURBED TOPSOIL
- Standard: In accordance with BS 4428.
 - Grading and cultivation: Category A.
 - Hard ground: Break up thoroughly.
 - Clearing: Remove visible roots and large stones with a diameter greater than 50 mm.
 - Areas covered with turf or thick sward: Plough or dig over to full depth of topsoil.
 - Fallow period (minimum): One month.
 - Weed control: At appropriate times treat with a suitable translocated nonresidual herbicide.
- 335 SURPLUS TOPSOIL TO BE REMOVED
- Generally: Remove from site topsoil remaining after completion of all landscaping work.
- 340 IMPORTED TOPSOIL TO BS 3882
- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
 - Standard: To BS 3882.
 - Classification: Multipurpose.
 - Source: Contractor's choice.
 - Submit: Declaration of analysis in accordance with BS 3882, Annex E.
 - Additional analyses: Not required.

Q28

355 COMPOST

- Standard: In accordance with PAS 100.
- Supplier: Local source.
 - Product reference: tbc.
- Type: Sanitized and stabilized compost.
- Horticultural parameters:
 - pH (1:5 water extract): 7.0-8.7.
 - Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
 - Moisture content (m/m of fresh weight): 35-55%.
 - Organic matter (minimum): 25%.
 - Grading (air dried samples): 99% passing 25 mm screen, and 90% a 10 mm screen mesh aperture.
 - Carbon:Nitrogen ratio (maximum): 20:1.
- Texture: Friable.
- Objectionable odour: None.
- Composting Association certification: Required.
- Submit: Declaration of analysis.
- Additional analyses: Not required.
- Samples: Not required.
- Application rate: 3.7 m³/100 m².
- Timing: Apply prior to cultivation.

395 PEAT

- Peat or products containing peat: Do not use.

650 NOTICE OF IMPORTING TOPSOIL

- Give notice: Before stripping topsoil for transfer to site.
 - Notice period: 14 days.

670 CONTAMINATION

- General: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
 - Corrosive, explosive or flammable.
 - Hazardous to human or animal life.
 - Detrimental to healthy plant growth.
- Subsoil: In areas to receive topsoil, do not use subsoil contaminated with the above materials.
- Give notice: If any evidence or symptoms of soil contamination are discovered on the site, or in topsoil to be imported.

680 TOPSOIL STORAGE HEAPS

- Location: tba.
- Height (maximum): 1.0 m.
- Width (maximum): 2.0 m.
- Protection:
 - Do not place any other material on top of storage heaps.
 - Do not allow construction plant to pass over storage heaps.
 - Prevent compaction and contamination, by fencing and covering as appropriate.

Q28

690 HANDLING TOPSOIL

- Aggressive weeds: Give notice and obtain instructions before moving topsoil.
- Plant: Select and use plant to minimize disturbance, trafficking and compaction.
- Contamination: Do not mix topsoil with:
 - Subsoil, stone, hardcore, rubbish or material from demolition work.
 - Other grades of topsoil.
- Multiple handling: Keep to a minimum. Use or stockpile topsoil immediately after stripping.
- Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall or when it is wetter than the plastic limit less 3%, to BS 1377-2.

700 SPREADING TOPSOIL

- Temporary roads/surfacing: Remove before spreading topsoil.
- Layers:
 - Depth (maximum): 150 mm.
 - Gently firm each layer before spreading the next.
- Depths after firming and settlement (minimum): 150 mm.
- Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible.

710 LOOSE TIPPING OF TOPSOIL

- 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.
- Depths after settlement (minimum): 150 mm.

720 SPORTSFIELDS

- Grading: To even levels and within the following permitted deviations:
 - From levels or gradients shown on drawings: ± 75 mm.
 - From line between boning rods 30 m apart: ± 25 mm.

910 FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT

- Above adjoining paving or kerbs: 25 mm.
- Below dpc of adjoining buildings: Not less than 150 mm.
- Shrub areas: Higher than adjoining grass areas by 25 mm.
- Within root spread of existing trees: Unchanged.
- Adjoining soil areas: Marry in.
- Thickness of turf or mulch: Included.

920 DOCUMENTATION

- Timing: Submit at handover.
- Contents:
 - Full description of all soil components.
 - Record of source for all soil components.
 - Analyst's report for each test carried out.
 - Record drawings showing the location and depth of all soils by type and grade.
 - Supplier's declaration of compliance with BS 3882.
- Number of copies: 3.

Q31
External planting

Q31 External planting

To be read with Preliminaries/General conditions.

GENERAL INFORMATION/ REQUIREMENTS

112 SITE CLEARANCE GENERALLY

- General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
- Stones: Remove those with any dimension exceeding 50 mm.
- Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
- Vegetation: Clear scrub to ground level by flail mowing and remove arisings; retain and protect trees indicated on drawings.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
- Additional requirements: Remove remnants of old fence posts and mesh.

118 SOIL CONDITIONS

- Soil for cultivating and planting: Moist, friable and (excepting aquatic/ marginal planting) not waterlogged.
- 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

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

125 TIMES OF YEAR FOR PLANTING

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

130 MECHANICAL TOOLS

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

145 WATERING

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

150 WATER RESTRICTIONS

- 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.

Q31

- 160 NOTICE
- Give notice before:
 - Setting out.
 - Applying herbicide.
 - Applying fertilizer.
 - Delivery of plants/ trees.
 - Planting shrubs.
 - Planting trees into previously dug pits.
 - Watering.
 - Visiting site during maintenance period.
 - Period of notice: One week.
- 165 PREPARATION, PLANTING AND MULCHING MATERIALS
- General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
 - Certification of source, analysis, suitability for purpose and absence of harmful substances: Submit.
 - Certified materials: Sanitized and stabilized compost.
 - Give notice before ordering or using.
- 200 PLANTS/ TREES - GENERAL
- Condition: Materially undamaged, sturdy, healthy and vigorous.
 - Appearance: Of good shape and without elongated shoots.
 - Hardiness: Grown in a suitable environment and hardened off.
 - Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
 - Budded or grafted plants: Bottom worked.
 - Root system and condition: Balanced with branch system.
 - Standard: The relevant parts of BS 3936.
 - Species: True to name.
 - Origin/ Provenance: As plant schedule.
Definition: Origin and Provenance have the meaning given in the National Plant Specification.
- 216 PLANTS/ TREES - SPECIFICATION CRITERIA
- Name, forms, dimensions and other criteria: To the relevant part of BS 3936.
- 225 BULBS/ CORMS/ TUBERS
- Condition: Firm, entire, not dried out or shrivelled.
 - Health: Free from pests, diseases and fungus.
 - Handling: Remove from packaging immediately.
 - Storage: Permitted only when necessary.
 - Location: Well ventilated, dark, covered, rodent proof container, away from exhausts and fruit.
 - Duration: Minimum period.
 - Temperature: 18-21°C.
- 235 CONTAINER GROWN PLANTS/ TREES
- Growing medium: With adequate nutrients for plants to thrive until permanently planted.
 - Plants: Centred in containers, firmed and well watered.
 - Root growth: Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.
 - Hardiness: Grown in the open for at least two months before being supplied.
 - Containers: With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

Q31

260 PLANT/ TREE SUBSTITUTION

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

265 PLANT HANDLING, STORAGE TRANSPORT AND PLANTING

- Standard: To HTA 'Handling and establishing landscape plants'.
- Frost: Protect plants from frost.
- Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
- Plant packaging: Black polyethylene bags.
- Packaging of bulk quantities: Pallets or bins sealed with polyethylene and shrink wrapped.
- Planting: Upright or well balanced with best side to front.

280 TREATMENT OF TREE WOUNDS

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

285 PROTECTION OF EXISTING GRASS

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

290 SURPLUS MATERIAL

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

PREPARATION OF PLANTING BEDS/ PLANTING MATERIALS

305 WEED CONTROL FOR INVASIVE NON-NATIVE WEEDS

- Locations: All planting areas.
- General: Prevent weeds from seeding and perennial weeds from becoming established, by contractor's choice of herbicide.

335 GENERAL FERTILIZER - SLOW RELEASE

- Locations: All planting areas.
- Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
- Application: Spread evenly.
 - Timing: Immediately before cultivation.
 - Rate: As manufacturers recommendation.

341 PEAT

- Peat or products containing peat: Do not use.

Q31

- 361 COMPOST To be added to topsoil
- Locations: All planting areas.
 - Type: Sanitized and stabilized compost.
 - Manufacturer/ Supplier: Contractor's choice.
 - Product reference: Contractor's choice.
 - Standard: To PAS 100.
 - Horticulture parameters:
 - pH (1:5 water extract): 7.0-8.7.
 - Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
 - Moisture content (m/m of fresh weight): 35-55%.
 - Organic matter content (minimum): 25%.
 - Grading (air dried samples): 99% passing 25 mm screen, and 90% passing 10 mm screen mesh aperture.
 - Carbon:Nitrogen ratio (maximum): 20:1.
 - Texture: Friable.
 - Objectionable odour: None.
 - Composting Association certification: Required.
 - Application: Spread evenly.
 - Timing: Apply prior to cultivation.
 - Rate: 25 mm thick layer.
 - Other requirements: None.

- 375 CULTIVATION
- Compacted topsoil: Break up to full depth.
 - Cultivation: Loosen, aerate and break up soil into particles of 2-8 mm.
 - Depth: 450 mm.
 - Timing: Within a few days before planting.
 - Weather and ground conditions: Suitably dry.
 - Surface: Leave regular and even.
 - Levels:
 - 25 mm above adjoining paving or kerbs;
 - 50 mm above adjoining lawns; and
 - Minimum 150 mm below dpc of adjoining buildings.
 - Undesirable material brought to the surface: Remove visible weeds, roots and large stones with any dimension exceeding 50 mm.
 - Soil within root spread of trees and shrubs to be retained: Do not dig or cultivate.

PLANTING SHRUBS/ HERBACEOUS PLANTS/ BULBS

- 400 RANDOM PLANT LAYOUT TO ALL BEDS
- Spacing: Random groups of 3-5 plants of the same species..
 - Density: As plant schedule.
- 405 SHRUB PLANTING PITS
- Timing: Excavate 1-2 days (maximum) before planting.
 - Sizes: 150 mm wider than roots when fully spread and 200 mm deep.
 - Pit bottom improvement Break up to a depth of 150 mm, incorporating soil ameliorant/ conditioner at 50 g/m².
 - Backfilling material: Shrub planting backfilling material.

Q31

445 PLANTING BULBS/ CORMS/ TUBERS

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

472 FENCING SUPPORT FOR NEW HEDGES

- Type: Timber post and general pattern wire mesh.
- Standard: To BS 1722-2.
- Height: 600 mm.
- Timing: Before planting hedge.
- Support: Lightly secure hedge plants to fence wires at appropriate intervals.

476 SHRUB, HERBACEOUS AND BULB BACKFILLING MATERIAL

- Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required:
- Ameliorant/ Conditioner: Sanitized and stabilized compost.
 - Application rate: 3 m³ per 10 m³ of topsoil.
- Fertilizer: Slow release.
 - Application rate: To manufacturer's/ supplier's recommendations.

480 AFTER PLANTING

- Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
- 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.
- Top dressing: Sanitized and stabilized compost.
 - Depth: 25 mm.

485 MULCHING PLANTING BEDS

- Material: Fine grade bark mulch.
 - Purity: Free of pests, disease, fungus and weeds.
 - Recycled content: Submit proposals.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: 75 mm depth.
- Finished level of mulch: 30 mm below adjacent grassed or paved areas.

485A MULCHING ADVENTURE PLAY AREA

- Material: Play grade bark mulch.
 - Purity: Free of pests, disease, fungus and weeds.
 - Recycled content: Submit proposals.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: 100 mm depth.
- Finished level of mulch: 30 mm below adjacent grassed or paved areas.

PLANTING TREES**505 TREE PITS**

- Sizes: 1200 mm x 1200 mm x750 mm deep.
- Sloping ground: Maintain horizontal bases and vertical sides with no less than minimum depth throughout.
- Pit bottoms: With slightly raised centre. Break up to a depth of 200 mm.
 - Treatment: Soil ameliorant worked into pit bottoms.
- Pit sides: Scarify.
- Backfilling material: Tree backfilling material.
- Accessories:
 - Tree pit drainage layer as clause 515;
 - Perforated plastics irrigation/ ventilation pipe; and
 - Underground guying to BS 4043.

510 TREE PIT ROOT BARRIERS

- Locations: Wherever the installed rootball will be within 2.0 m of a building foundation.
- Manufacturer: Terram.
 - Product reference: RootGuard.
- Depth of top of root barrier below finished soil level: 50 mm.
- Installation: With sides vertical.

515 TREE PIT DRAINAGE

- Depth of excavation: Increase from specified size to allow for aggregate layer, with base slightly falling to outlet.
- Aggregate layer: Clean gravel or broken stone, with no fines, graded 40 to 20 mm.
 - Depth: 200 mm.
- Drainage pipes:
 - Type: Perforated plastics.
 - Diameter: 100 mm.
 - Position: Lay around perimeter of pit within aggregate layer.
 - Discharge: tbc.
- Geotextile filter:
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
 - Position: Lay over aggregate before installing tree or backfill.
- Completed pits: Test for free drainage before planting.

535 STAKING GENERALLY

- Stakes: Softwood, peeled chestnut, larch or oak, straight, free from projections and large or edge knots and with pointed lower end.
 - Preservative treatment: To provide a 40 year service life.
- Nails: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.
- Stake size (minimum): 50 x 50 mm.

565 LONG DOUBLE STAKING FOR HEAVY STANDARD TREES

- Staking: Drive stakes vertically at least 300 mm into bottom of pit on either side of tree position before planting.
 - Backfilling: Consolidate material around stakes.
- Height of stakes: Cut off just below lowest branch of tree.
- Cross bar: Wood, as stake.
 - Firmly fix on windward side of tree and as close as possible to stem.
- Ties: Expanding ties.
- Tying: Secure tree firmly but not rigidly to cross bar.

Q31

575 SHORT DOUBLE STAKING FOR WHIPS AND FEATHERED TREES

- Staking: Drive stakes vertically at least 300 mm into bottom of pit on either side of tree position before planting.
 - Backfilling: Consolidate material around stakes.
- Height of stakes: Cut to approximately 600 mm above ground level.
- Cross bar: Flexible webbing within 25 mm of top of stake.
 - Firmly fix on windward side of tree and as close as possible to stem.
- Ties: Expanding ties.
- Tying: Secure tree firmly but not rigidly to cross bar.

586 TREE BACKFILLING MATERIAL

- Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required.
- Ameliorant/ Conditioner: Sanitized and stabilized compost.
 - Application rate: 3 m³ per 10 m³ of topsoil.
- Fertilizer: Slow release.
 - Application rate: To manufacturer's/ supplier's recommendations.

617 REMOVING TREES AND HEDGES

- Identification: Clearly mark trees and hedges to be removed.
- Work near retained trees: Where canopies overlap, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.
- Arisings: Remove.
- Tree stumps: Remove mechanically to a minimum depth of 300 mm below ground level.

PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS

710 MAINTENANCE

- Duration: Carry out the operations in the following clauses from completion of planting until the end of the rectification period.
- Frequency of maintenance visits: To be confirmed.

720 FAILURES OF PLANTING

- Defects due to materials or workmanship not in accordance with the Contract: Plants/ trees/ shrubs that have failed to thrive.
 - Exclusions: Theft or malicious damage after completion.
 - Rectification: Replace with equivalent plants/ trees/ shrubs.
- Replacements: To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
- Timing of making good: During the next suitable planting season.

740 CLEANLINESS

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

750 PLANTING MAINTENANCE GENERALLY

- Weed control: Maintain weed free area around each tree and shrub.
 - Diameter (minimum): The larger of 1 m or the surface of original planting pit.
 - Keep planting beds clear of weeds: By hoeing.
- 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.
- Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
- Staking: Check condition of stakes, ties, guys and guards.
 - Broken or missing items: Replace.
 - Rubbing: Prevent.
 - Ties: Adjust to accommodate growth.
 - Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
 - Frequency of checks: At each scheduled maintenance visit.
- Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
- Trees: Spray crown when in leaf during warm weather.
 - Timing: After dusk.
- Watering: When instructed.

755 PLANTING MAINTENANCE - FERTILIZER

- Time of year: March or April.
- Fertilizer: Organic.
 - Manufacturer: Contractor's choice.
 - Product reference: Contractor's choice.
- Application: Evenly spread, carefully incorporating below mulch materials.
- Application rate: To manufacturer's recommendations.

760 PLANTING MAINTENANCE - PRUNING

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

780 MAINTENANCE INSTRUCTIONS

- 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.

Q40
Fencing
Revision E

Q40 Fencing

FENCING

- 23 CLEFT CHESTNUT PALE FENCING
- Standard: To BS 1722-4.
 - Height: 900 mm.
 - Posts and struts: Wood.
 - Setting: Concrete .
 - Accessories: As drawing.
- 26 HORIZONTAL TIMBER HIT & MISS FENCING TO BIN STORE
- Standard: To BS 1722-5.
 - Height: 1800 mm.
 - Wood: Contractor's choice.
 - Treatment: To provide a 15 year service life.
 - Posts: Wood.
 - Setting: Concrete.
 - Accessories: Double leaf gate at pedestrian entrance, with stays, bolts, 3no. hinges etc..
(Revised - Q40 revision E - 8th Aug 2014)
- 26A HORIZONTAL TIMBER HIT & MISS FENCING TO NURSERY PLAY
- Standard: To BS 1722-5.
 - Height: 1200 mm.
 - Wood: Oak (European and English).
 - Treatment: To provide a 15 year service life.
 - Posts: Wood.
 - Setting: Concrete.
 - Accessories: Double leaf gate at pedestrian entrance, with stays, bolts, 3no. hinges and heavy duty padlock hasp & staple..
- 27 OPEN MESH STEEL PANEL FENCING
- Standard: To BS 1722-14, category: 1.
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Height: 1800 mm.
 - Mesh and wire: Green Plastics coated welded mesh.
 - Posts: Galvanized rectangular hollow section, plastics coated.
 - Setting: Concrete.
 - Accessories: Vehicular and pedestrian gates as shown on drawing L-OM 9000 and as clause Q40.40.
 - Conformity: Submit manufacturer's and installer's certificates, to BS 1722-14.

Q40

- 27A OPEN MESH STEEL PANEL FENCING to surround fire escape stair as shown on drawing L-OM 9000 and to contain external social/teching space as shown on drawing L-OM 9000
Standard: To BS 1722-14, category: 1.
- Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Height: 1100 mm.
 - Mesh and wire: Green Plastics coated welded mesh.
 - Posts: Galvanized rectangular hollow section, plastics coated.
 - Setting: Concrete/bolted to existing building wall.
 - Accessories: Gate with fire escape push bar openable from the stair side of the gates. Gates to open out from stair side and to be same width as the escape stair..
 - Conformity: Submit manufacturer's and installer's certificates, to BS 1722-14.
- 27B OPEN MESH STEEL PANEL FENCING
- Standard: To BS 1722-14, category: 1.
 - Manufacturer: Contractor's choice.
 - Product reference: Submit proposals.
 - Height: 1800 mm.
 - Mesh and wire: Plastics coated welded mesh.
 - Posts: Galvanized rectangular hollow section, plastics coated.
 - Setting: Concrete/bolted to timber sleeper wall.
 - Accessories: Vehicular and pedestrian gates as shown on drawing L-SH-900.
 - Conformity: Submit manufacturer's and installer's certificates, to BS 1722-14.
- 40 STEEL GATES/ GATE POSTS
- Materials and workmanship: As section Z11.
 - Jointing: Welded.
 - Finish: Hot dip galvanized to BS EN ISO 1461 after fabrication.
 - Fittings: Heavy duty, powder coated, 2 self closing adjustable hinges, gate openers and a thumb latch for pedestrian gates.
Heavy duty, powder coated, with gates openers and manually closing latch with padlock hasp and staple for vehicular gates .
 - Post setting: Set in concrete.
- 60 INSTALLATION GENERALLY
- Expertise: By an experienced fencing contractor.
 - Alignment: Straight lines or smoothly flowing curves.
 - Tops of posts: Following profile of the ground.
 - Setting posts: Rigid, plumb and to specified depth, or greater where necessary to ensure adequate support.
 - Fixings: All components securely fixed.
- 70 SETTING POSTS IN CONCRETE
- Standard: To BS 8500-2.
 - Mix: Designated concrete not less than GEN1 or Standard prescribed concrete not less than ST2.
 - Alternative mix for small quantities: 50 kg Portland cement to 150 kg fine aggregate to 250 kg 20 mm nominal maximum size coarse aggregate, medium workability.
 - Admixtures: Do not use.
 - Holes: Excavate neatly and with vertical sides.
 - Filling: Unless specified otherwise position post/ strut and fill hole with concrete to not less than half the depth, well rammed as filling proceeds and consolidated.
 - Backfilling of holes not completely filled with concrete: Excavated material, well rammed and consolidated.

Q40

80 WOOD RAILS

- Length (minimum): Two bays, with joints in adjacent rails staggered.
- Fixing: Nail each length of rail to each post with two 100 mm galvanized nails.
- Rails with split ends: Replace.

85 SITE CUTTING OF WOOD

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

90 MAKING GOOD GALVANIZED SURFACES

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

Q41

Barriers/ guardrails

Q41 Barriers/ guardrails

To be read with Preliminaries/ General conditions.

TYPES OF BARRIERS/ GUARDRAILS

240 HANDRAIL SYSTEMS TO RAMP - see drawing L-OM 9000

- System manufacturer: Contractor's choice.
- Material: Hardwood/galvanised steel brackets.
 - Cross section: 120 mm perimeter elliptical.
 - Finish: Not required, timber handrail must be free from splinters and rough areas.
- Height above ground surface (to upper surface of handrail):
 - Upper handrail: 1100mm.
 - Lower handrail: 600 mm .
- Accessories: none.

INSTALLATION

410 WORK ON OR ADJACENT TO HIGHWAYS

- Requirement: Comply with the Department for Transport's 'Safety at street works and road works. A code of practice'. Retain a copy of this document on site at all times during the course of the works.

420 ALIGNMENT

- Erection: Fences/ barriers to present a flowing alignment. Tops of posts to follow ground profile.
- Tolerance: ± 30 mm of prescribed alignment and, within any 10 m length, ± 15 mm from the straight or required radius.

480 CONCRETE FOUNDATIONS FOR POSTS

- Excavations: To have vertical sides. Dispose of all arisings. Blind excavation bottoms with a 50 mm layer of concrete.
- Concrete mix: To BS 8500-2, Designated mix not less than GEN 4 or Standard mix not less than ST5. Do not use admixtures.
- Placing concrete: Fill holes to the specified depth and fully compact. Do not backfill for at least four days.
- Temporary support to posts: Provide for a at least four days after placing concrete.

500 PRESERVATIVE TREATED TIMBER

- Surfaces exposed by minor cutting and drilling: Treat with two flood coats of a solution recommended for the purpose by main treatment solution manufacturer.

Q50
Site/ street furniture/ equipment
Revision B

Q50 Site/ street furniture/ equipment

To be read with Preliminaries/ General conditions.

- 190 BOLLARDS To areas as shown on drawing L-SH-900
- Manufacturer: Broxap or equal approved.
 - Product reference: Sheffield Stainless Steel BX47 0140 75 or equal or approved.
 - Material: Steel.
 - Finish as delivered: Stainless Steel.
 - Colour: None.
 - Height above ground: 1100 mm and 76mm dia.
 - Special features: Heavy Duty to withstand impact from parking vehicles.
 - Method of fixing: As Manufacturer recommends for car park installation..
(Added - Q50 revision B - 25th Apr 2014)

SITE AND STREET FURNITURE

- 210 CYCLE STANDS
- Manufacturer: Broxap or equal approved.
 - Product reference: Sofco Junior Cycle Shelter.
 - Material: Clearview PET panels.
 - Finish: Polyester powder coated as section Z31.
 - Colour: TBA.
 - Number of stands: Shelters with junior cycle stands. Positions and numbers as shown on drawings L-OM 9000 and L-SH-900.
 - Accessories: associated cycle stands.
 - Method of fixing: Base plate bolted to 400 x 400 x 400 mm concrete base 100 mm below paving surface.
- 210A CYCLE STANDS
- Manufacturer: Broxap or equal approved.
 - Product reference: Sofco Adult Cycle Shelter.
 - Material: Clearview PET panels.
 - Finish: Polyester powder coated as section Z31.
 - Colour: TBA.
 - Number of stands: Shelters with cycle stands. Positions and numbers as shown on drawings L-OM 9000 L-SH-900.
 - Accessories: associated cycle stands.
 - Method of fixing: Root, 300 mm below ground, set in concrete base.
- 240 LITTER BINS To external play areas as shown on drawings L-OM 9000 and L-SH-900
- Manufacturer: Broxap or equal approved.
 - Product reference: Derby Weyburn Steel Litter Bin BX45 2550-WBN.
 - Material: Steel.
 - Finish: Hot dip galvanized to BS EN ISO 1461 and Polyester powder coated as section Z31.
 - Colour: Black.
 - Accessories/ Special requirements: None.
 - Method of fixing: As manufacturer recommends.

INSTALLATION

510 CONCRETE FOUNDATIONS GENERALLY

- Standard: To BS 8500-2.
- Concrete: As section E10.
- Admixtures: Do not use.
- Foundation holes: Neat vertical sides.
- Depth of foundations, bedding, haunching: Appropriate to provide adequate support and to receive overlying soft landscape or paving finishes.

515 SETTING COMPONENTS IN CONCRETE

- Holes: 250 x 250 x minimum 300 mm deep.
- Components: Accurately positioned and securely supported.
- Concrete fill: Fully compacted as filling proceeds.
- Concrete foundations exposed to view: Compacted until air bubbles cease to appear on the upper surface, then weathered to shed water and trowelled smooth.
- Temporary component support: Maintain undisturbed for minimum 48 hours.

530 PRESERVATIVE TREATED TIMBER

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

545 ERECTION OF TIMBER AND PREFABRICATED STRUCTURES

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

550 DAMAGE TO GALVANIZED SURFACES

- Minor damage in areas up to 40 mm² (including on fixings and fittings): Make good.
 - Material: Low melting point zinc alloy repair rods or powders made for this purpose or at least two coats of zinc-rich paint to BS 4652.
 - Thickness: Sufficient to provide a zinc coating at least equal to the original layer.

560 SITE PAINTING

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