

LL489 - Fitzjohns avenue

Hard and Soft Landscape External Works

Full Specification

23/10/2015 - 15:37

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Specification

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10-35-35/125 Earthworks excavating system

System outline

10-35-35/125 Earthworks excavating system

- **System performance:** 10-35-35/210 Testing, filling, compaction and treatment of formations type A.
- **Execution:** 10-35-35/616 Removal of excavated topsoil;
10-35-35/618 Storage of excavated topsoil;
10-35-35/621 Storage of excavated subsoil;
10-35-35/622 Removal of excavated subsoil;
10-35-35/630 Tolerances for excavated surfaces;
;
and 10-35-35/602 Site clearance generally.

System performance

10-35-35/210 Testing, filling, compaction and treatment of formations type A

Shared by: 10-35-35/125 Earthworks excavating system; and 10-35-35/127 Earthworks filling system.

- **Requirements for compaction:** Firmly compact sub-grade.
- **Requirements for earthwork environmental bunds, landscape areas, strengthened embankments:** Refer to drawings
- **Topography:** Refer to drawings

Execution

10-35-35/602 Site clearance generally

- **General:** Clear site of rubbish, debris and vegetation. Do not compact topsoil.
- **Timing:** Before topsoil stripping, if any.
- **Removal of non-organic matter:**
 - **Remove stones with any dimension exceeding:** 75 mm.
 - **Contamination:** Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
- **Application of herbicide:**
 - **Type of herbicide:** Submit proposals.
 - **Point of application:** Submit proposals.
- **Arisings:**
 - **Arising materials:** Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings, and other undesirable matter.
 - **Required actions:** Remove from site.

10-35-35/616 Removal of excavated topsoil

- **Required actions:** Submit proposals.

10-35-35/618 Storage of excavated topsoil

- **Standard:** To BS 3882.
- **Temporary storage heaps:**
 - **Location of temporary storage heaps:** Submit proposals. No top soil to be stored within root protection zones of existing trees.
 - **Limitations:**
 - Height (maximum):** 1.5 m.
 - Width (maximum):** Submit proposals.
 - Special requirements:** Tip soils loosely and firm the surface to encourage the shedding of water.
- **Protection:** Do not place any other material on top of storage heaps;
Do not allow construction plant to pass over storage heaps;
and Prevent compaction and contamination.

10-35-35/621 Storage of excavated subsoil

- **Material to be reused:**
 - **Temporary storage heaps:**
 - Required actions:** Contractor's choice.
 - Locations of temporary storage heaps:** Submit proposals. No sub-soil to be stored within root protection zones of existing trees.
 - **Required actions:** Spread and level surplus subsoil on site.
 - **Relocation of surplus subsoil:** Submit proposals.
 - **Protected areas:** Do not raise soil level within root spread of trees that are to be retained.

10-35-35/622 Removal of excavated subsoil

- **Required actions:** Submit proposals.

10-35-35/630 Tolerances for excavated surfaces

- **Permissible deviations from linear dimensions generally.:** Excavation is to be carried out to the depths shown on, or implied in the drawings.
- **Tolerances on inclination of slope surface:** 1:3 maximum grade
- **Permitted localized deviations from slope surface:** ± 20 mm.

10-35-35/127 Earthworks filling system

System outline

10-35-35/127 Earthworks filling system

- **System performance:** 10-35-35/210 Testing, filling, compaction and treatment of formations type A.
- **Ground stabilisation products:**
 - **Type of ground stabilisation product:** Submit proposals. Refer to drawings.
 - **Fixings for ground stabilisation products:** Submit proposals.
 - **Fill to ground stabilisation products:** Submit proposals.
- **Samples required:** 10-35-35/305 Product samples.
- **Execution:** 10-35-35/700 Compaction of fill materials;
10-35-35/704 Compacting fill for landscape areas;
10-35-35/714 Compaction of general fill;
10-35-35/718 Backfilling around foundations;
;
and 10-35-35/600 Installation control samples.

System performance

10-35-35/210 Testing, filling, compaction and treatment of formations type A

Shared by: 10-35-35/125 Earthworks excavating system; and 10-35-35/127 Earthworks filling system.

- **Requirements for compaction:** Firmly compact sub-grade.
- **Requirements for earthwork environmental bunds, landscape areas, strengthened embankments:** Refer to drawings
- **Topography:** Refer to drawings

Products

10-35-35/305 Product samples

Shared by: 10-35-35/127 Earthworks filling system; and 10-35-35/135 Erosion control system.

- **Manufacturer:** Submit proposals.
- **Supplied by:** Submit proposals.
- **Submittals:** Test certification with samples of subsoil and topsoil
- **Purpose:** For use as reference samples.
- **Labelling:** Clearly label all submitted samples.
- **Topsoil:**
 - **Sample load:**
Volume (minimum): 5 m³.
 - **Reference samples:** Retain for comparison with subsequent loads.
- **Timing:** Prior to installation.

Execution

10-35-35/600 Installation control samples

- **Required samples:**
 - **Type of sample:** Top soil and subsoil sample 1.5 x 1.5m installed
 - **Purpose:** For use as an installation reference sample.
 - **Locations of samples:** Submit proposals.
 - **Timing:** Construct during preliminary installation. Obtain approval of appearance before proceeding.

10-35-35/700 Compaction of fill materials

- **Fill not specified to be left loose:** Compact as soon as possible after placing so that each layer achieves a well closed surface, showing no movement under compaction plant, and without cracks, holes, ridges or loose material.
- **Defective areas:** Remove and re-compact to original requirements with new material, or Submit proposals.

10-35-35/704 Compacting fill for landscape areas

- **Extent of fill for landscape areas:** Refer to drawings
- **Layers:**
 - **Thickness (maximum):** 200 mm.
 - **Compaction:** Lightly compact each layer to produce a stable soil structure.

10-35-35/714 Compaction of general fill

- **Filling:** Spread and level material in layers. As soon as possible, thoroughly compact each layer.
- **Compaction requirement:** To suit uses of fill as shown on drawings.
- **Materials and methods:**
 - **Requirement:** To suit uses of fill as shown on drawing

10-35-35/718 Backfilling around foundations

- **Backfilling under grassed or soil covered areas.:** Lay and compact in 300 mm maximum layers.
- **Backfilling under oversite concrete and paving.:** Refer to drawings.

10-35-35/135 Erosion control system

System outline

10-35-35/135 Erosion control system

- **System performance:** 10-35-35/210 Testing, filling, compaction and treatment of formations type C.
- **Erosion control components:** Submit proposals.
- **Fixings for erosion control components:** Submit proposals.
- **Samples required:** 10-35-35/305 Product samples.
- **Execution:**

System performance

10-35-35/210 Testing, filling, compaction and treatment of formations type C

- **Requirements for earthwork environmental bunds, landscape areas, strengthened embankments:** Refer to drawings
- **Topography:** Refer to drawings

Products

10-35-35/305 Product samples

Shared by: 10-35-35/127 Earthworks filling system; and 10-35-35/135 Erosion control system.

- **Manufacturer:** Submit proposals.
- **Supplied by:** Submit proposals.
- **Submittals:** Test certification with samples of subsoil and topsoil
- **Purpose:** For use as reference samples.
- **Labelling:** Clearly label all submitted samples.
- **Topsoil:**
 - **Sample load:**
Volume (minimum): 5 m³.
 - **Reference samples:** Retain for comparison with subsequent loads.
- **Timing:** Prior to installation.

10-35-35/185 Topsoil filling system

System outline

10-35-35/185 Topsoil filling system

- **System performance:** Testing, filling, compaction and treatment of formations.
- **Fill materials:** 45-40-85/325 Imported topsoil to BS 3882
- **Reinforcement:** Where required refer to drawings
- **Samples required:** Topsoil analysis
- **Execution:** 10-35-35/606 Topsoil analysis;
10-35-35/724 Spreading topsoil generally;
and .

Products

45-40-85/325 Imported topsoil to BS 3882

Shared by: 10-35-35/185 Topsoil filling system; and 10-35-35/606 Topsoil analysis.

- **Supplier:** Submit proposals.
- **Source:** Submit proposals.
- **Standard:** To BS 3882.
- **Classification:** To BS 3882, multipurpose.
- **Particle grade:** Within the parameters of 'sandy loam' textural class. Non screened.

Execution

10-35-35/606 Topsoil analysis

- **Soil to be analysed:** 45-40-85/325 Imported topsoil to BS 3882.
- **Soil analyst:** Submit proposals.
- **Samples:** Submit proposals.
- **Tests:** Chemical analysis;
Contaminants;
Nutrient content;
pH value;
Textural classification;
and Phytotoxic and CLEA elements.
- **Submit:** Report detailing results and analyst's recommendations. 4 weeks in advance of installation

10-35-35/724 Spreading topsoil generally

- **Method:** Fine grading shall be carried out using small sized earth moving equipment or by hand and shall involve final modelling of the earth.
- **Locations for spreading topsoil:** Any areas where topsoil is required for new planting.
- **Preparatory works:**

- **Levelling and grading:** Excavate and/ or place fill to required profiles and levels. Grade to smooth flowing contours to achieve specified finished levels of topsoil. Avoid overcompaction. Maximum 250mm layers.
- **Loosening:**
 - Light and non-cohesive 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.
- **Removing stones:**
 - Timing:** Immediately before spreading topsoil.
 - Size in any dimension (maximum):** 75 mm for all areas of shrub and tree planting.
- **Arisings, contaminants and debris:** Remove from site.
- **Inspecting formations:** Notify.
- **Temporary roads and surfacing:** Remove before spreading topsoil.
- **Layers:**
 - **Depth (maximum):** Refer to drawings for required soil depths.
 - **Firming:** Gently firm each layer before spreading the next.
- **Depths after firming and settlement (minimum):** Refer to drawings.
- **Crumb structure:** Do not compact topsoil. Preserve a friable texture of separate visible crumbs.
- **Protected areas:** Do not raise soil level within root spread of trees that are to be retained. Refer to drawings.
- **Notice before spreading topsoil:**
 - **Period of notice (minimum):** Seven days.

20-15-90/120 Flag and slab bound paving system

System outline

20-15-90/120 Flag and slab bound paving system

- **System performance:** 20-15-90/201 Design of unit pavements type A and 20-15-90/251 Accessibility of unit pavements type A.
- **System manufacturer:** Refer to drawing
- **Standard:** To BS 7533-12.
- **Subgrade improvement layer:** Submit proposals.
- **Preparation products:** Submit proposals.
- **Geotextile below granular sub-base:** Submit proposals.
- **Granular sub-base:** Refer to drawing
- **Base course:** Refer to drawing
- **Laying course:** Refer to drawing
- **Paving course:**
 - **Paving units:** Refer to drawing
 - **Jointing:** Refer to drawing
 - **Movement joints:** Submit proposals.
- **Applied surface features:** Refer to drawing
- **Samples required:** Submit proposals.
- **Execution:** 20-15-90/601 Installation control samples;
20-15-90/603 Protection of paving during works;
20-15-90/609 Cutting paving units;
20-15-90/611 Permissible deviations from design levels for unit paving;
20-15-90/613 Regularity of finished paving surface to BS 7533 type A;
20-15-90/614 Regularity of finished paving surface to BS 8300;
20-15-90/627 Reclaiming natural stone paving units;
20-15-90/651 Laying bound flag and slab pavements;
20-15-90/741 Concrete for foundations, races and haunching for unit pavements;
and .
- **System completion:** Refer to drawing

System performance

20-15-90/201 Design of unit pavements type A

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Design scope:** Submit proposals.
- **Standards:**
 - **Structural design of unit pavements generally:** Submit proposals.
 - **Concrete flag and natural stone slab paving system:**
 - Lightly trafficked pavements up to 30 kph:** To BS 7533-8.
 - Trafficked pavements subject to speeds up 50 kph:** To BS 7533-12.
 - Permeable pavements:** To BS 7533-13.

- **Natural stone, clay and concrete cobble, sett and block paving systems:**
 - Lightly trafficked pavements up to 0.5 msa:** To BS 7533-2.
 - Trafficked pavements 0.5–12 msa:** To BS 7533-1.
 - Trafficked pavements for commercial vehicles:** To BS 7533-10.
 - Permeable pavements:** To BS 7533-13.
- **Overlay pavement systems:**
 - Trafficked pavements 0.5–12 msa:** Design to BS 7533-1.
 - Lightly trafficked pavements up to 30 kph:** Design to BS 7533-8.
- **Rigid brick paving system:** In accordance with Brick Development Association Design Note 8.

20-15-90/251 Accessibility of unit pavements type A

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Inclusive design:** Submit proposals.
- **Finished surfaces on accessible areas:** Free of irregularities capable of inflicting personal injury.

Execution

20-15-90/601 Installation control samples

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Required samples:**
 - **Paving types:** Refer to drawing
 - **Purpose:** For use as an installation reference sample.
 - **Size (minimum):** Submit proposals.
 - **Location:** Submit proposals.
 - **Features to be included:** Submit proposals.
- **Timing:** Construct during preliminary installation. Obtain approval of appearance before proceeding.

20-15-90/603 Protection of paving during works

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **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.
- **Access:** Submit proposals.

20-15-90/607 Laying unit pavings generally

Shared by: 20-15-90/138 Mosaic paving system; 20-15-90/651 Laying bound flag and slab pavements; and 20-15-90/685 Fixing mosaics generally.

- **Standard:** In accordance with Highways Agency MCHW Volume 1: Series 1100.
- **Setting out:** Start from an edge restraint.
- **Paving units:** Free of mortar and sand stains. Interlocking units to be adequately connected
- **Appearance:** Smooth and even with regular joints. Accurate to line, level and profile.

- **Cut edges:** Turn inwards where possible. Do not position against edge restraints or other features.
- **Laying course:** Grade consistently and accurately. Spread and compact to produce uniform thickness and support for paving units.
- **Bedding of paving units:** Firm so that rocking or subsidence does not occur or develop.
- **Falls:** Refer to drawing
- **Laying on slopes:** Lay paving units upwards from the bottom of slopes.

20-15-90/609 Cutting paving units

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Generally:** Cut units cleanly, accurately and vertically, without spalling, to give neat junctions with edgings and adjoining finishes. Do not mark or damage visible surfaces.
- **Natural stone:** In accordance with BS 7533-3. Cut setts with a disc cutter or masonry saw.
- **Concrete flags:** To Interpave 'Cutting paving. Cutting precast concrete blocks flags and kerbs - efficient design and managing the risk'.

20-15-90/611 Permissible deviations from design levels for unit paving

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Standard:** To BS 7533-3 and To BS 7533-4.
- **Permissible deviation from specified levels (mm):**
 - **Permeable pavements:**
 - Sub-base:** -10 to +10 mm.
 - Roadbase:** Submit proposals.
 - Laying course:** Submit proposals.
 - Surface course:** ± 6 mm.
 - Kerbs and channels:** ± 6 mm.
 - **Conventional pavements:**
 - Sub-base:** -10 to +5 mm.
 - Roadbase:** -10 to +5 mm.
 - Laying course:** -5 to +10 mm.
 - Surface course:** ± 6 mm.
- **Height of finished paving above features:**
 - **At gullies:** +6 to +10 mm.
 - **At drainage channels and kerbs:** +3 to +6 mm.

20-15-90/613 Regularity of finished paving surface to BS 7533 type A

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Standard:** In accordance with BS 7533-3 and BS 7533-4.
- **Method of measurement:** Under a 3 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
- **Maximum undulations in the pavement surface:**
 - **Precast concrete paving blocks and clay pavers for flexible pavements:** 10 mm.
 - **Precast concrete flags or natural stone slabs:** 3 mm.
- **Sudden irregularities:** Not permitted.
- **Difference in level between adjacent paving units (maximum):** 2 mm.

20-15-90/614 Regularity of finished paving surface to BS 8300

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Standard:** In accordance with BS 8300.
 - **Method of measurement:** Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface). 4 weeks in prior to installation results to be submitted to clients agent.
 - **Maximum undulations in the pavement surface:** 3 mm.
- **Joints between paving units or utility access covers:**
 - **Joints flush with the surface:** Difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
 - **Recessed, filled joints:** Difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
 - **Unfilled joints:** Difference in level between adjacent units to be no greater than 2 mm.
- **Sudden irregularities:** Not permitted.

20-15-90/627 Reclaiming natural stone paving units

- **Location and access:** Refer to drawing
- **Lifting, storage and protection:** Submit proposals.
- **Preparation:** Submit proposals.

20-15-90/651 Laying bound flag and slab pavements

- **General requirements:** 20-15-90/607 Laying unit pavings generally.
- **Primer required on underside of units:** Submit proposals.
- **Standard:** In accordance with BS 7533-4 and In accordance with Interpave publication 'Concrete flag paving. Guide to the properties, design, handling, construction, reinstatement and maintenance of concrete flag pavements'.
- **Laying course thickness (nominal):** Refer to drawing
- **Bond:**
 - **Concrete flags:** Submit proposals.
 - **Natural stone slabs:** Submit proposals.
- **Laying and jointing:** Submit proposals.
- **Joint width (nominal):** Submit proposals.

20-15-90/741 Concrete for foundations, races and haunching for unit pavements

- **Standard:** To BS 8500-2.
- **Designated mix:** Submit proposals.
- **Consistence:** Very low.

20-15-90/138 Mosaic paving system

System outline

20-15-90/138 Mosaic paving system

- **System performance:** 20-15-90/201 Design of unit pavements type A;
20-15-90/210 Design information for unit pavements;
20-15-90/251 Accessibility of unit pavements type A;
and 20-15-90/255 Slip and skid resistance of unit pavements.
- **System manufacturer:** Refer to drawings
- **Subgrade improvement layer:** Refer to drawings
- **Preparation products:** Refer to drawings
- **Geotextile below granular sub-base:** Refer to drawings
- **Granular sub-base:** Refer to drawings
- **Base course:** Refer to drawings
- **Laying course:** Refer to drawings
- **Paving course:**
 - **Paving units:** Refer to drawings
 - **Jointing:** Refer to drawings
 - **Movement joints:** Refer to drawings
- **Applied surface features:** Refer to drawings
- **Samples required:** Refer to drawings
- **Execution:** 20-15-90/601 Installation control samples;
20-15-90/603 Protection of paving during works;
20-15-90/607 Laying unit pavings generally;
20-15-90/609 Cutting paving units;
20-15-90/611 Permissible deviations from design levels for unit paving;
20-15-90/613 Regularity of finished paving surface to BS 7533 type A;
20-15-90/614 Regularity of finished paving surface to BS 8300;
20-15-90/633 Condition of sub-bases and bases before spreading laying course;
20-15-90/731 Laying geotextiles below laying course;
and 20-15-90/685 Fixing mosaics generally.
- **System completion:** 20-15-90/801 Protection of completed pavements and 20-15-90/802 Completion of unit pavements.

System performance

20-15-90/201 Design of unit pavements type A

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Design scope:** Submit proposals.
- **Standards:**
 - **Structural design of unit pavements generally:** Submit proposals.
 - **Concrete flag and natural stone slab paving system:**
 - Lightly trafficked pavements up to 30 kph:** To BS 7533-8.
 - Trafficked pavements subject to speeds up 50 kph:** To BS 7533-12.

- Permeable pavements: To BS 7533-13.
- **Natural stone, clay and concrete cobble, sett and block paving systems:**
 - Lightly trafficked pavements up to 0.5 msa: To BS 7533-2.
 - Trafficked pavements 0.5–12 msa: To BS 7533-1.
 - Trafficked pavements for commercial vehicles: To BS 7533-10.
 - Permeable pavements: To BS 7533-13.
- **Overlay pavement systems:**
 - Trafficked pavements 0.5–12 msa: Design to BS 7533-1.
 - Lightly trafficked pavements up to 30 kph: Design to BS 7533-8.
- **Rigid brick paving system:** In accordance with Brick Development Association Design Note 8.

20-15-90/205 Design submittals

- **Detailed design:**
 - **Requirement:** Submit proposals.
 - **Purpose:**
 - **Submittals:** Typical plan, elevation and section drawings at suitable scales.
 - **Timing:** Submit proposals.
 - **Format:** Submit proposals.

20-15-90/210 Design information for unit pavements

- **General requirements:** 20-15-90/205 Design submittals.
- **Design load:**
- **Existing ground conditions:**
 - **California Bearing Ratio (CBR):**
- **Climatic loads/actions:**
 - **Site Ordnance Survey grid reference:**
 - **Site altitude to Ordnance Datum:**
- **Vehicular loading to trafficked unit paving:**
 - **Standard:**
 - **Category:**

20-15-90/251 Accessibility of unit pavements type A

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Inclusive design:** Submit proposals.
- **Finished surfaces on accessible areas:** Free of irregularities capable of inflicting personal injury.

20-15-90/255 Slip and skid resistance of unit pavements

- **Slip resistance value – water wet (minimum):**
 - **Level surfaces:** To BS 7976-2, PTV of 36.
 - **Inclined surfaces, up to 1:20 pitch:**
- **Skid resistance:** PSV to HA DMRB 7.5.1 of 50; PSV to HA DMRB 7.5.1 of 65; and PSV to HA DMRB 7.5.1 of 68+.
- **Demonstrating performance:**
 - **Submittals:** Test results on existing example system and Laboratory test results.

- **Testing company:** UKAS accredited (or European equivalent).

Execution

20-15-90/601 Installation control samples

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Required samples:**
 - **Paving types:** Refer to drawing
 - **Purpose:** For use as an installation reference sample.
 - **Size (minimum):** Submit proposals.
 - **Location:** Submit proposals.
 - **Features to be included:** Submit proposals.
- **Timing:** Construct during preliminary installation. Obtain approval of appearance before proceeding.

20-15-90/603 Protection of paving during works

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **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.
- **Access:** Submit proposals.

20-15-90/607 Laying unit pavings generally

Shared by: 20-15-90/138 Mosaic paving system; 20-15-90/651 Laying bound flag and slab pavements; and 20-15-90/685 Fixing mosaics generally.

- **Standard:** In accordance with Highways Agency MCHW Volume 1: Series 1100.
- **Setting out:** Start from an edge restraint.
- **Paving units:** Free of mortar and sand stains. Interlocking units to be adequately connected
- **Appearance:** Smooth and even with regular joints. Accurate to line, level and profile.
- **Cut edges:** Turn inwards where possible. Do not position against edge restraints or other features.
- **Laying course:** Grade consistently and accurately. Spread and compact to produce uniform thickness and support for paving units.
- **Bedding of paving units:** Firm so that rocking or subsidence does not occur or develop.
- **Falls:** Refer to drawing
- **Laying on slopes:** Lay paving units upwards from the bottom of slopes.

20-15-90/609 Cutting paving units

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Generally:** Cut units cleanly, accurately and vertically, without spalling, to give neat junctions with edgings and adjoining finishes. Do not mark or damage visible surfaces.
- **Natural stone:** In accordance with BS 7533-3. Cut setts with a disc cutter or masonry saw.
- **Concrete flags:** To Interpave 'Cutting paving. Cutting precast concrete blocks flags and kerbs - efficient design and managing the risk'.

20-15-90/611 Permissible deviations from design levels for unit paving

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Standard:** To BS 7533-3 and To BS 7533-4.
- **Permissible deviation from specified levels (mm):**
 - **Permeable pavements:**
 - Sub-base:** -10 to +10 mm.
 - Roadbase:** Submit proposals.
 - Laying course:** Submit proposals.
 - Surface course:** ± 6 mm.
 - Kerbs and channels:** ± 6 mm.
 - **Conventional pavements:**
 - Sub-base:** -10 to +5 mm.
 - Roadbase:** -10 to +5 mm.
 - Laying course:** -5 to +10 mm.
 - Surface course:** ± 6 mm.
- **Height of finished paving above features:**
 - **At gullies:** +6 to +10 mm.
 - **At drainage channels and kerbs:** +3 to +6 mm.

20-15-90/613 Regularity of finished paving surface to BS 7533 type A

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Standard:** In accordance with BS 7533-3 and BS 7533-4.
- **Method of measurement:** Under a 3 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
- **Maximum undulations in the pavement surface:**
 - **Precast concrete paving blocks and clay pavers for flexible pavements:** 10 mm.
 - **Precast concrete flags or natural stone slabs:** 3 mm.
- **Sudden irregularities:** Not permitted.
- **Difference in level between adjacent paving units (maximum):** 2 mm.

20-15-90/614 Regularity of finished paving surface to BS 8300

Shared by: 20-15-90/120 Flag and slab bound paving system; and 20-15-90/138 Mosaic paving system.

- **Standard:** In accordance with BS 8300.
 - **Method of measurement:** Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface). 4 weeks in prior to installation results to be submitted to clients agent.
 - **Maximum undulations in the pavement surface:** 3 mm.
- **Joints between paving units or utility access covers:**
 - **Joints flush with the surface:** Difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
 - **Recessed, filled joints:** Difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
 - **Unfilled joints:** Difference in level between adjacent units to be no greater than 2 mm.
- **Sudden irregularities:** Not permitted.

20-15-90/633 Condition of sub-bases and bases before spreading laying course

- **Trenches and excavation of soft or loose spots in subgrade:** Fill. Compact thoroughly.
- **Granular surfaces:**
- **Prepared existing and new bound bases (roadbases):** Sound, clean, free from rutting or major cracking. Remove sharp stones, projections and debris.
- **Subgrade, sub-base and roadbase presentation:**
- **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. Bed adequately. Haunch in mortar.
- **Sub-bases containing cement or hydraulic binder:** Cure for minimum times specified in BS 7533-4. Protect from moisture loss, if not covered by another pavement course within 2 hours of completion.

20-15-90/685 Fixing mosaics generally

- **General requirements:** 20-15-90/607 Laying unit pavings generally.
- **Cut tiles:** Neat and accurate.
- **Fixing tiles:** Provide adhesion over entire base and tile backs. Fix with secure and effective bond.
- **Surplus bedding material on joints and faces of tiles:** Not permitted.

20-15-90/731 Laying geotextiles below laying course

- **Position:** Immediately below sand laying course.
- **Edge detail:**
 - **Features which interrupt laying course:** Fit neatly against perimeters, edge restraints, kerbs and drainage fittings. Turn sheet up to form an upstand to a height of the thickness of the laying course.
 - **Over drainage holes:**
 - Position:** Lay geotextile patches on the base, centrally over each hole.
 - Size of patches:**
- **Jointing lap (minimum):**

System completion

20-15-90/801 Protection of completed pavements

- **Keep free from traffic after laying for specified duration:**
 - **Mortar bedded pavings:**
 - Pedestrian traffic (minimum):** Contractor's choice.
 - Vehicular traffic (minimum):** Contractor's choice.
 - **Grassed pavings:** Protect from traffic for 6–8 weeks or until grass can tolerate traffic.

20-15-90/802 Completion of unit pavements

- **Final compaction of the surface course:** In accordance with BS 7533-4.

20-85-45/130 Footway grating system

System outline

20-85-45/130 Footway grating system

- **System performance:** 20-85-45/201 Design of kerbs, channels and pavement level features.
- **System manufacturer:** Refer to drawing
- **Foundations:** Submit proposals.
- **Mortar bedding:** Submit proposals.
- **Grating:** Submit proposals.
- **Haunching:** Submit proposals.
- **Jointing:** Submit proposals.
- **Movement joints:** Submit proposals.
- **Additional features:** Submit proposals.
- **Samples required:** Submit proposals.
- **Execution:** 20-85-45/603 Protection of kerb and channel units during works type A;
20-85-45/613 Setting out kerbs and channels;
20-85-45/617 Permissible deviation from design levels for kerbs, channels and pavement level features type A;
20-85-45/621 Regularity of finished surfaces to BS 8300 type A;
20-85-45/641 Laying kerb and channel units generally;
and 20-85-45/663 Installing footway gratings.

System performance

20-85-45/201 Design of kerbs, channels and pavement level features

Shared by: 20-85-45/130 Footway grating system; 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Design scope:** Refer to drawing
- **Standards:**
 - **Structural design of unit pavements generally:** In accordance with the DMRB Volume 7 Section 2: Pavement design;
In accordance with PD 6694-1;
and In accordance with Design and detailing with concrete kerbs, channels and similar products.
 - **Natural stone, precast concrete and clay kerbs and channels:** In accordance with BS 7533-6.

Execution

20-85-45/603 Protection of kerb and channel units during works type A

Shared by: 20-85-45/130 Footway grating system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Cleanliness:** Keep units clean and free from mortar droppings, oil and other materials likely to cause staining.
- **Materials storage:** Do not overload units with stacks of materials.
- **Handling:** Do not damage unit corners, arrises, or previously laid paving.
- **Access:** Prevent damage from site traffic and plant.

20-85-45/613 Setting out kerbs and channels

Shared by: 20-85-45/130 Footway grating system; 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Alignment:** Straight lines or smoothly flowing curves, following profile of the ground.
- **Layout:**
 - **Kerbs and channels:** Radii of 12 m or less.
 - **Angle kerbs:** Internal and external 90° changes of direction.
 - **Kerbs at vehicular crossings:** Submit proposals.
 - **Kerbs at pedestrian crossing points:** Submit proposals.

20-85-45/617 Permissible deviation from design levels for kerbs, channels and pavement level features type A

Shared by: 20-85-45/130 Footway grating system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Standard:** In accordance with BS 7533-6.
- **Permissible deviation from specified levels (mm):**
 - **Level:** ±6 mm.
 - **Horizontal and vertical alignment:** 3 mm in 3 m.
- **Height of finished paving above features:**
 - **At gullies:** +6 to +10 mm.
 - **At drainage channels and kerbs:** +3 to +6 mm.

20-85-45/621 Regularity of finished surfaces to BS 8300 type A

Shared by: 20-85-45/130 Footway grating system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Standard:** In accordance with BS 8300.
 - **Method of measurement:** Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
 - **Maximum undulations in the pavement surface:** 3 mm.
- **Joints between units:**
 - **Joints flush with the surface:** Difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
 - **Recessed, filled joints:** Difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
 - **Unfilled joints:** Difference in level between adjacent units to be no greater than 2 mm.
- **Sudden irregularities:** Not permitted.

20-85-45/641 Laying kerb and channel units generally

Shared by: 20-85-45/130 Footway grating system; 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Standard:** In accordance with BS 7533-6.
- **Appearance:** Smooth and even with regular joints. Accurate to line, level and profile.

20-85-45/663 Installing footway gratings

- **Locations and layout:** Refer to drawing
- **Transverse gradient of top surface (maximum):** Refer to drawing
- **Pit:**
 - **Length (minimum):** Submit proposals.
 - **Width (minimum):** Submit proposals.
 - **Depth:** Submit proposals.

Ω End of system

20-85-45/145 Light duty kerb system

System outline

20-85-45/145 Light duty kerb system

- **System performance:** 20-85-45/201 Design of kerbs, channels and pavement level features and 20-85-45/251 Accessibility of kerbs and channels.
- **System manufacturer:** Refer to drawing
- **Foundations:** Refer to drawing
- **Mortar bedding:** Refer to drawing
- **Units:** Refer to drawing
- **Haunching:** Refer to drawing
- **Jointing:** Refer to drawing
- **Movement joints:** Submit proposals.
- **Applied surface features:** Submit proposals.
- **Samples required:** 20-85-45/305 Product samples.
- **Execution:** 20-85-45/601 Work on or adjacent to highways;
20-85-45/607 Cutting kerb and channel units type B;
20-85-45/603 Protection of kerb and channel units during works type B;
20-85-45/613 Setting out kerbs and channels;
20-85-45/617 Permissible deviation from design levels for kerbs, channels and pavement level features type B;
20-85-45/621 Regularity of finished surfaces to BS 8300 type B;
and 20-85-45/641 Laying kerb and channel units generally.

System performance

20-85-45/201 Design of kerbs, channels and pavement level features

Shared by: 20-85-45/130 Footway grating system; 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Design scope:** Refer to drawing
- **Standards:**
 - **Structural design of unit pavements generally:** In accordance with the DMRB Volume 7 Section 2: Pavement design;
In accordance with PD 6694-1;
and In accordance with Design and detailing with concrete kerbs, channels and similar products.
 - **Natural stone, precast concrete and clay kerbs and channels:** In accordance with BS 7533-6.

20-85-45/251 Accessibility of kerbs and channels

Shared by: 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Inclusive design:** Submit proposals.

- **Finished surfaces on accessible areas:** Free of irregularities capable of inflicting personal injury.

Products

20-85-45/305 Product samples

- **Manufacturer:** Refer to drawing
- **Submittals:** Submit proposals.
- **Purpose:** For use as a reference sample.
- **Labelling:** Clearly label all submitted samples.
- **Timing:** Submit proposals.

Execution

20-85-45/601 Work on or adjacent to highways

Shared by: 20-85-45/145 Light duty kerb system; and 20-85-45/175 Single unit surface drainage channel system.

- **Requirement:** Comply with the Department for Transport (DfT) 'Safety at street works and road works - a code of practice'. Retain a copy of this document on site during the course of the works.
- **Standard:** In accordance with HA MCHW Volume 1: Series 1100.

20-85-45/603 Protection of kerb and channel units during works type B

- **Cleanliness:** Keep units clean and free from mortar droppings, oil and other materials likely to cause staining.
- **Materials storage:** Do not overload units with stacks of materials.
- **Handling:** Do not damage unit corners, arrises, or previously laid paving.
- **Access:** Prevent damage from site traffic and plant.

20-85-45/607 Cutting kerb and channel units type B

- **Generally:** Cut units cleanly, accurately and vertically, without spalling, to give neat junctions with edgings and adjoining finishes. Do not mark or damage visible surfaces.
- **Natural stone:** In accordance with BS 7533-6. Cut units with a disc cutter or masonry saw.
- **Precast concrete units:** To Interpave 'Cutting paving. Cutting precast concrete blocks flags and kerbs - efficient design and managing the risk'.
- **Cutting of mitres:** Not permitted.

20-85-45/613 Setting out kerbs and channels

Shared by: 20-85-45/130 Footway grating system; 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Alignment:** Straight lines or smoothly flowing curves, following profile of the ground.
- **Layout:**
 - **Kerbs and channels:** Radii of 12 m or less.
 - **Angle kerbs:** Internal and external 90° changes of direction.
 - **Kerbs at vehicular crossings:** Submit proposals.
 - **Kerbs at pedestrian crossing points:** Submit proposals.

20-85-45/617 Permissible deviation from design levels for kerbs, channels and pavement level features type B

- **Standard:** In accordance with BS 7533-6.
- **Permissible deviation from specified levels (mm):**
 - **Level:** ± 6 mm.
 - **Horizontal and vertical alignment:** 3 mm in 3 m.
- **Height of finished paving above features:**
 - **At gullies:** +6 to +10 mm.
 - **At drainage channels and kerbs:** +3 to +6 mm.

20-85-45/621 Regularity of finished surfaces to BS 8300 type B

- **Standard:** In accordance with BS 8300.
 - **Method of measurement:** Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
 - **Maximum undulations in the pavement surface:** 3 mm.
- **Joints between units:**
 - **Joints flush with the surface:** Difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
 - **Recessed, filled joints:** Difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
 - **Unfilled joints:** Difference in level between adjacent units to be no greater than 2 mm.
- **Sudden irregularities:** Not permitted.

20-85-45/641 Laying kerb and channel units generally

Shared by: 20-85-45/130 Footway grating system; 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Standard:** In accordance with BS 7533-6.
- **Appearance:** Smooth and even with regular joints. Accurate to line, level and profile.

20-85-45/150 Multi unit surface drainage channel system

System outline

20-85-45/150 Multi unit surface drainage channel system

- **System performance:** 20-85-45/201 Design of kerbs, channels and pavement level features and 20-85-45/251 Accessibility of kerbs and channels.
- **System manufacturer:** Refer to drawing
- **Foundations:** Refer to drawing
- **Mortar bedding:** Refer to drawing
- **Channels:** Refer to drawing
- **Haunching:** Refer to drawing
- **Jointing:** Refer to drawing
- **Movement joints:** Refer to drawing
- **Applied surface features:** Refer to drawing
- **Samples required:** Submit proposals.
- **Execution:** 20-85-45/603 Protection of kerb and channel units during works type A;
20-85-45/607 Cutting kerb and channel units type A;
20-85-45/613 Setting out kerbs and channels;
20-85-45/617 Permissible deviation from design levels for kerbs, channels and pavement level features type A;
20-85-45/621 Regularity of finished surfaces to BS 8300 type A;
and 20-85-45/641 Laying kerb and channel units generally.

System performance

20-85-45/201 Design of kerbs, channels and pavement level features

Shared by: 20-85-45/130 Footway grating system; 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Design scope:** Refer to drawing
- **Standards:**
 - **Structural design of unit pavements generally:** In accordance with the DMRB Volume 7 Section 2: Pavement design;
In accordance with PD 6694-1;
and In accordance with Design and detailing with concrete kerbs, channels and similar products.
 - **Natural stone, precast concrete and clay kerbs and channels:** In accordance with BS 7533-6.

20-85-45/251 Accessibility of kerbs and channels

Shared by: 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Inclusive design:** Submit proposals.
- **Finished surfaces on accessible areas:** Free of irregularities capable of inflicting personal injury.

Execution

20-85-45/603 Protection of kerb and channel units during works type A

Shared by: 20-85-45/130 Footway grating system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Cleanliness:** Keep units clean and free from mortar droppings, oil and other materials likely to cause staining.
- **Materials storage:** Do not overload units with stacks of materials.
- **Handling:** Do not damage unit corners, arrises, or previously laid paving.
- **Access:** Prevent damage from site traffic and plant.

20-85-45/607 Cutting kerb and channel units type A

Shared by: 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Generally:** Cut units cleanly, accurately and vertically, without spalling, to give neat junctions with edgings and adjoining finishes. Do not mark or damage visible surfaces.
- **Natural stone:** In accordance with BS 7533-6. Cut units with a disc cutter or masonry saw.
- **Precast concrete units:** To Interpave 'Cutting paving. Cutting precast concrete blocks flags and kerbs - efficient design and managing the risk'.
- **Cutting of mitres:** Not permitted.

20-85-45/613 Setting out kerbs and channels

Shared by: 20-85-45/130 Footway grating system; 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Alignment:** Straight lines or smoothly flowing curves, following profile of the ground.
- **Layout:**
 - **Kerbs and channels:** Radii of 12 m or less.
 - **Angle kerbs:** Internal and external 90° changes of direction.
 - **Kerbs at vehicular crossings:** Submit proposals.
 - **Kerbs at pedestrian crossing points:** Submit proposals.

20-85-45/617 Permissible deviation from design levels for kerbs, channels and pavement level features type A

Shared by: 20-85-45/130 Footway grating system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Standard:** In accordance with BS 7533-6.
- **Permissible deviation from specified levels (mm):**
 - **Level:** ±6 mm.
 - **Horizontal and vertical alignment:** 3 mm in 3 m.
- **Height of finished paving above features:**
 - **At gullies:** +6 to +10 mm.
 - **At drainage channels and kerbs:** +3 to +6 mm.

20-85-45/621 Regularity of finished surfaces to BS 8300 type A

Shared by: 20-85-45/130 Footway grating system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Standard:** In accordance with BS 8300.
 - **Method of measurement:** Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
 - **Maximum undulations in the pavement surface:** 3 mm.
- **Joints between units:**
 - **Joints flush with the surface:** Difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
 - **Recessed, filled joints:** Difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
 - **Unfilled joints:** Difference in level between adjacent units to be no greater than 2 mm.
- **Sudden irregularities:** Not permitted.

20-85-45/641 Laying kerb and channel units generally

Shared by: 20-85-45/130 Footway grating system; 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Standard:** In accordance with BS 7533-6.
- **Appearance:** Smooth and even with regular joints. Accurate to line, level and profile.

Ω End of system

20-85-45/175 Single unit surface drainage channel system

System outline

20-85-45/175 Single unit surface drainage channel system

- **System performance:** 20-85-45/201 Design of kerbs, channels and pavement level features; 20-85-45/251 Accessibility of kerbs and channels; and 20-85-45/202 Vehicle loading.
- **System manufacturer:** Refer to drawing
- **Foundations:** Refer to drawing
- **Mortar bedding:** Refer to drawing
- **Channels:** Refer to drawing
- **Haunching:** Refer to drawing
- **Jointing:** Refer to drawing
- **Movement joints:** Refer to drawing
- **Applied surface features:** Refer to drawing
- **Samples required:** Submit proposals.
- **Execution:** 20-85-45/601 Work on or adjacent to highways; 20-85-45/603 Protection of kerb and channel units during works type A; 20-85-45/607 Cutting kerb and channel units type A; 20-85-45/613 Setting out kerbs and channels; 20-85-45/615 Placing of channels in paving; 20-85-45/617 Permissible deviation from design levels for kerbs, channels and pavement level features type A; 20-85-45/621 Regularity of finished surfaces to BS 8300 type A; and 20-85-45/641 Laying kerb and channel units generally.

System performance

20-85-45/201 Design of kerbs, channels and pavement level features

Shared by: 20-85-45/130 Footway grating system; 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Design scope:** Refer to drawing
- **Standards:**
 - **Structural design of unit pavements generally:** In accordance with the DMRB Volume 7 Section 2: Pavement design; In accordance with PD 6694-1; and In accordance with Design and detailing with concrete kerbs, channels and similar products.
 - **Natural stone, precast concrete and clay kerbs and channels:** In accordance with BS 7533-6.

20-85-45/202 Vehicle loading

- **Vehicular loading:** In accordance with PD 6694-1.

20-85-45/251 Accessibility of kerbs and channels

Shared by: 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Inclusive design:** Submit proposals.
- **Finished surfaces on accessible areas:** Free of irregularities capable of inflicting personal injury.

Execution

20-85-45/601 Work on or adjacent to highways

Shared by: 20-85-45/145 Light duty kerb system; and 20-85-45/175 Single unit surface drainage channel system.

- **Requirement:** Comply with the Department for Transport (DfT) 'Safety at street works and road works - a code of practice'. Retain a copy of this document on site during the course of the works.
- **Standard:** In accordance with HA MCHW Volume 1: Series 1100.

20-85-45/603 Protection of kerb and channel units during works type A

Shared by: 20-85-45/130 Footway grating system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Cleanliness:** Keep units clean and free from mortar droppings, oil and other materials likely to cause staining.
- **Materials storage:** Do not overload units with stacks of materials.
- **Handling:** Do not damage unit corners, arrises, or previously laid paving.
- **Access:** Prevent damage from site traffic and plant.

20-85-45/605 Adverse weather

- **Standard:** In accordance with BS 7533-6.
- **General:**
 - **Temperature:** Do not lay or joint kerb or channel units 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.
- **Kerbs edgings, and channels:** Adequately protect foundations, bedding and haunching against frost and rapid drying by sun and wind.

20-85-45/607 Cutting kerb and channel units type A

Shared by: 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Generally:** Cut units cleanly, accurately and vertically, without spalling, to give neat junctions with edgings and adjoining finishes. Do not mark or damage visible surfaces.
- **Natural stone:** In accordance with BS 7533-6. Cut units with a disc cutter or masonry saw.
- **Precast concrete units:** To Interpave 'Cutting paving. Cutting precast concrete blocks flags and kerbs - efficient design and managing the risk'.
- **Cutting of mitres:** Not permitted.

20-85-45/611 Installation control samples

- **Required samples:**

- **Types:** Refer to drawing
- **Purpose:** For use as an installation reference sample.
- **Size (minimum):** Submit proposals.
- **Location:** Refer to drawing
- **Features to be included:** Submit proposals.
- **Timing:** Construct during preliminary installation. Obtain approval of appearance before proceeding.

20-85-45/613 Setting out kerbs and channels

Shared by: 20-85-45/130 Footway grating system; 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Alignment:** Straight lines or smoothly flowing curves, following profile of the ground.
- **Layout:**
 - **Kerbs and channels:** Radii of 12 m or less.
 - **Angle kerbs:** Internal and external 90° changes of direction.
 - **Kerbs at vehicular crossings:** Submit proposals.
 - **Kerbs at pedestrian crossing points:** Submit proposals.

20-85-45/615 Placing of channels in paving

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

20-85-45/617 Permissible deviation from design levels for kerbs, channels and pavement level features type A

Shared by: 20-85-45/130 Footway grating system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Standard:** In accordance with BS 7533-6.
- **Permissible deviation from specified levels (mm):**
 - **Level:** ±6 mm.
 - **Horizontal and vertical alignment:** 3 mm in 3 m.
- **Height of finished paving above features:**
 - **At gullies:** +6 to +10 mm.
 - **At drainage channels and kerbs:** +3 to +6 mm.

20-85-45/621 Regularity of finished surfaces to BS 8300 type A

Shared by: 20-85-45/130 Footway grating system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Standard:** In accordance with BS 8300.
 - **Method of measurement:** Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
 - **Maximum undulations in the pavement surface:** 3 mm.
- **Joints between units:**
 - **Joints flush with the surface:** Difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
 - **Recessed, filled joints:** Difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
 - **Unfilled joints:** Difference in level between adjacent units to be no greater than 2 mm.

- **Sudden irregularities:** Not permitted.

20-85-45/641 Laying kerb and channel units generally

Shared by: 20-85-45/130 Footway grating system; 20-85-45/145 Light duty kerb system; 20-85-45/150 Multi unit surface drainage channel system; and 20-85-45/175 Single unit surface drainage channel system.

- **Standard:** In accordance with BS 7533-6.
- **Appearance:** Smooth and even with regular joints. Accurate to line, level and profile.

Ω End of system

25-10-55/150 Masonry external leaf system

System outline

25-10-55/150 Masonry external leaf system

- **System performance:** 25-10-55/200 Accuracy of brick and block walling and 25-10-55/235 Design of masonry walling.
- **Mortar:**
 - **Jointing:**
 - Primary:** Refer to drawing
 - Below dpc:**
 - For dpc:**
 - For parapet:**
 - **Pointing:**
 - Primary:** Refer to drawing
 - Below dpc:**
 - For dpc:**
 - For parapet:**
 - **Bed course:**
 - Sill bedding:**
 - Lintel bedding:**
 - Bedding elsewhere:** Refer to drawing
 - **Collar joint:** Submit proposals.
 - **Brick slip adhesive:**
- **Masonry units:**
 - **Primary:** Refer to drawing
 - **Below dpc:**
 - **For dpc:**
 - **For parapet:**
- **Special shape masonry units:**
 - **Primary:**
 - **Below dpc:**
 - **For dpc:**
 - **For parapet:**
- **Movement joint components:** Submit proposals.
- **Water barrier:** Submit proposals.
- **Dpc:**
 - **Primary:**
 - **Coping or capping:**
- **Dpc sealer:**
 - **Primary:**
 - **Coping or capping:**
- **Cavity accessories:**
 - **Cavity trays:**

- Material:
 - Dpc sealer:
 - Wall ties:
 - Primary:
 - Below dpc:
 - For parapet:
 - Insulation:
 - Cavity closers:
 - Wall ties to outer leaf:
 - Primary:
 - Below dpc:
 - For parapet:
 - Sills:
 - Lintels:
 - Primary:
 - Below dpc:
 - Termination unit:
 - System accessories: Submit proposals.
 - Samples required: Submit proposals.
 - Execution: [25-10-55/601 Cleanliness](#); [25-10-55/603 Concrete fill to base of cavity](#); [25-10-55/605 Execution Standards for masonry structures](#); [25-10-55/678 Unexposed contraction joints](#); [25-10-55/683 Pointing up to soffits](#); [25-10-55/690 Installing cast stone dressings](#); and [25-10-55/757 Laying walling below ground level](#).
 - System completion: Refer to drawing

System performance

25-10-55/200 Accuracy of brick and block walling

Shared by: [25-10-55/150 Masonry external leaf system](#); and [25-10-55/170 Masonry freestanding wall leaf system](#).

- **Courses:** Level and true to line.
- **Faces, angle and features:** Refer to drawing
- **Permissible deviations:**
 - **Position in plan of any point in relation to the specified building reference line and/ or point at the same level:** ± 10 mm.
 - **Straightness in any 5 m length:** ± 5 mm.
 - **Verticality up to 3 m height:** ± 10 mm.
 - **Verticality up to 7 m height:** ± 14 mm.
 - **Overall thickness of walls:** ± 10 mm.
 - **Level of bed joints up to 5 m (brick masonry):** ± 11 mm.
 - **Level of bed joints up to 5 m (block masonry):** ± 13 mm.

25-10-55/235 Design of masonry walling

Shared by: 25-10-55/150 Masonry external leaf system; and 25-10-55/170 Masonry freestanding wall leaf system.

- **General requirements:** Submit proposals.
- **Standard:** To BS EN 1996-1-1.

Execution

25-10-55/601 Cleanliness

Shared by: 25-10-55/150 Masonry external leaf system; and 25-10-55/170 Masonry freestanding wall leaf system.

- **Cavity base and faces, ties, insulation and exposed dpcs:** Free from mortar and debris.

25-10-55/603 Concrete fill to base of cavity

Shared by: 25-10-55/150 Masonry external leaf system; and 25-10-55/170 Masonry freestanding wall leaf system.

- **Extent:** Maintain 75 mm between top of fill and external ground level and a minimum of 225 mm between top of fill and ground level dpc.
- **Placement:** Compact to eliminate voids.

25-10-55/605 Execution Standards for masonry structures

Shared by: 25-10-55/150 Masonry external leaf system; and 25-10-55/170 Masonry freestanding wall leaf system.

- **Standard:** To BS EN 1996-2.

25-10-55/678 Unexposed contraction joints

Shared by: 25-10-55/150 Masonry external leaf system; and 25-10-55/170 Masonry freestanding wall leaf system.

- **Joint frequency:** Submit proposals.
- **Formation:** Close butt as work proceeds.

25-10-55/683 Pointing up to soffits

- **Top joint of loadbearing walls:** Fill and consolidate with mortar.

25-10-55/690 Installing cast stone dressings

- **Joints:** Full and finished flush.
- **Placement:** Lay on a full bed of mortar.
- **Bed joints under one piece sills/ thresholds:** Leave open except under end bearings and masonry mullions. On completion, point with mortar to match adjacent work.

25-10-55/757 Laying walling below ground level

Shared by: 25-10-55/150 Masonry external leaf system; and 25-10-55/170 Masonry freestanding wall leaf system.

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

25-10-55/170 Masonry freestanding wall leaf system

System outline

25-10-55/170 Masonry freestanding wall leaf system

- **System performance:** 25-10-55/200 Accuracy of brick and block walling and 25-10-55/235 Design of masonry walling.
- **Mortar:**
 - **Jointing:**
 - Primary:** Refer to drawing
 - Below dpc:**
 - For dpc:**
 - **Pointing:**
 - Primary:** Refer to drawing
 - Below dpc:**
 - For dpc:**
 - **Collar joint:** Submit proposals.
- **Masonry units:**
 - **Primary:** Refer to drawing
 - **Below dpc:**
 - **For dpc:**
- **Special shape masonry units:**
 - **Primary:** Refer to drawing
 - **Below dpc:**
 - **For dpc:**
- **Movement joint components:**
- **Dpc:**
 - **Coping or capping:** Refer to drawing
 - **Sealer:**
- **Cavity accessories:**
 - **Concrete fill:** Refer to drawing
 - **Wall ties:**
 - Primary:** Submit proposals.
 - Below dpc:**
 - **Cavity closers:**
- **Lintels:**
- **Termination unit:** Submit proposals.
- **System accessories:**
- **Samples required:** Submit proposals.
- **Execution:** 25-10-55/601 Cleanliness;
25-10-55/603 Concrete fill to base of cavity;
25-10-55/605 Execution Standards for masonry structures;
25-10-55/678 Unexposed contraction joints;
25-10-55/757 Laying walling below ground level;

- **System completion:** Refer to drawing

System performance

25-10-55/200 Accuracy of brick and block walling

Shared by: 25-10-55/150 Masonry external leaf system; and 25-10-55/170 Masonry freestanding wall leaf system.

- **Courses:** Level and true to line.
- **Faces, angle and features:** Refer to drawing
- **Permissible deviations:**
 - **Position in plan of any point in relation to the specified building reference line and/or point at the same level:** ± 10 mm.
 - **Straightness in any 5 m length:** ± 5 mm.
 - **Verticality up to 3 m height:** ± 10 mm.
 - **Verticality up to 7 m height:** ± 14 mm.
 - **Overall thickness of walls:** ± 10 mm.
 - **Level of bed joints up to 5 m (brick masonry):** ± 11 mm.
 - **Level of bed joints up to 5 m (block masonry):** ± 13 mm.

25-10-55/235 Design of masonry walling

Shared by: 25-10-55/150 Masonry external leaf system; and 25-10-55/170 Masonry freestanding wall leaf system.

- **General requirements:** Submit proposals.
- **Standard:** To BS EN 1996-1-1.

Execution

25-10-55/601 Cleanliness

Shared by: 25-10-55/150 Masonry external leaf system; and 25-10-55/170 Masonry freestanding wall leaf system.

- **Cavity base and faces, ties, insulation and exposed dpcs:** Free from mortar and debris.

25-10-55/603 Concrete fill to base of cavity

Shared by: 25-10-55/150 Masonry external leaf system; and 25-10-55/170 Masonry freestanding wall leaf system.

- **Extent:** Maintain 75 mm between top of fill and external ground level and a minimum of 225 mm between top of fill and ground level dpc.
- **Placement:** Compact to eliminate voids.

25-10-55/605 Execution Standards for masonry structures

Shared by: 25-10-55/150 Masonry external leaf system; and 25-10-55/170 Masonry freestanding wall leaf system.

- **Standard:** To BS EN 1996-2.

25-10-55/678 Unexposed contraction joints

Shared by: 25-10-55/150 Masonry external leaf system; and 25-10-55/170 Masonry freestanding wall leaf system.

- **Joint frequency:** Submit proposals.
- **Formation:** Close butt as work proceeds.

25-10-55/757 Laying walling below ground level

Shared by: 25-10-55/150 Masonry external leaf system; and 25-10-55/170 Masonry freestanding wall leaf system.

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

Ω End of system

25-20-30/155 Prefabricated wood or plastics panel fencing system

System outline

25-20-30/155 Prefabricated wood or plastics panel fencing system

- **System performance:** 25-20-30/201 Contractor design of fencing systems and 25-20-30/265 Visual performance.
- **System manufacturer:** Refer to drawing
- **Posts:** Refer to drawing
- **Post foundations:** Refer to drawing
- **Base boards:** Submit proposals.
- **Rails:** Refer to drawing
- **Panels:** Refer to drawing
- **Site applied finishes:** Submit proposals.
- **System accessories:**
- **Samples required:**
- **Execution:** 25-20-30/605 Alignment of fences;
25-20-30/607 Fencing work generally;
25-20-30/611 Building fence components into masonry walls;
25-20-30/612 Fixing fence post base plates to concrete pads and strips;
25-20-30/613 Fixing fence posts into preformed holes in concrete pads and strips;
25-20-30/615 Formation of holes for in situ concrete pad or strip foundations for fence posts;
25-20-30/616 Compacted hardcore settings for fence posts;
25-20-30/617 Rammed earth settings for fence posts;
and 25-20-30/781 Erecting prefabricated wood and plastics panel fencing systems.
- **System completion:** 25-20-30/870 Inspection of fencing systems.

System performance

25-20-30/201 Contractor design of fencing systems

- **Design scope:** Submit proposals.
- **Detailed design:**
 - **Standards:**
 - **Deflections and other structural movements:** At serviceability limit state, these must be compatible with requirements of the pavement fabric, construction joints and weathertightness.
 - **Design load criteria:** Submit proposals.

25-20-30/265 Visual performance

- **Colour:** Refer to drawing
- **Intervisibility:** To BS 7818.
- **Sight lines:** In accordance with BS 6180.
- **Transparency:** To BS EN 1794-2.

Execution

25-20-30/605 Alignment of fences

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Alignment of fences and barriers:** Straight lines or smoothly flowing curves, following profile of the ground.
- **Tops of posts:** Follow ground profile.
- **Verticality:** Plumb.
- **Tolerances:** ± 30 mm of prescribed alignment and, within any 10 m length, ± 15 mm from the straight or required radius.
- **Changes of direction:** Obtuse angles such that no angle is less than 130° .

25-20-30/607 Fencing work generally

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Metal fixings:** Protect from corrosion.
- **In situ welding:** Submit proposals.
- **Treatment of minor damage to galvanized surfaces:**
 - **Repairs to areas of damage less than 40 mm²:**
Method: Submit proposals.
Zinc coating thickness (minimum): Thickness of the original layer.
- **Site cutting of wood:**
 - **Components generally:** Minimize cutting.
 - **Wood below or near ground level:** Do not cut.
 - **Treatment of surfaces exposed by minor cutting and drilling:**
Method: Apply sufficient material to provide a coating equal to the original preservative.
Number of coats: Submit proposals.
- **Site applied finishes:**
 - **Timing:** Prepare surfaces and apply finishes as soon as possible after fixing.
- **Disposal of arisings:**
 - **Biodegradable arisings:** Remove to recycling facility.
 - **Tree roots and stumps:** Remove from site.
 - **Litter and nonbiodegradable arisings:** Remove from site.

25-20-30/611 Building fence components into masonry walls

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Components being built in:** Accurately position and securely support. Set in mortar. Point neatly to match adjacent walling.
- **Temporary support:** Maintain for 48 hours (minimum) and prevent disturbance.
- **Method:** Securely fix components.
- **Setting method:** Submit proposals.

25-20-30/612 Fixing fence post base plates to concrete pads and strips

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Post fasteners:** Submit proposals.
- **Fixing:** Securely fix components.

25-20-30/613 Fixing fence posts into preformed holes in concrete pads and strips

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Post centres (maximum):** Submit proposals.
- **Setting method:** Submit proposals.

25-20-30/615 Formation of holes for in situ concrete pad or strip foundations for fence posts

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Dimensions:**
 - **Hole plan size (minimum):** Submit proposals.
 - **Hole depth (minimum):** Submit proposals.
- **Formation:** Excavate neatly, with vertical sides.

25-20-30/616 Compacted hardcore settings for fence posts

- **Post settings:**
 - **Hole plan size (minimum):** Make as small as practicable to allow refilling and ramming.
 - **Hole depth (minimum):** Refer to drawing
- **Excavating:** Excavate neatly, with vertical sides.
- **Filling:** Position posts/ struts. Fill with hardcore. Ram well as filling proceeds. Consolidate.

25-20-30/617 Rammed earth settings for fence posts

- **Formation:** Excavate neatly, with vertical sides..
- **Components:** Position posts/ struts accurately. Support securely.
- **Filling:** Fill with excavated material. Ram well as filling proceeds. Consolidate.
- **Dimensions:**
 - **Post settings:**
 - Hole plan size (minimum):** Make as small as practicable to allow refilling and ramming.
 - Hole depth (minimum):** Refer to drawing
 - **Struts:**
 - Hole plan size (minimum):** 450 x 300 mm.
 - Hole depth (minimum):** 450 mm.

25-20-30/781 Erecting prefabricated wood and plastics panel fencing systems

- **Standard:** To BS 1722-11.
- **Fence height:** Refer to drawing
- **Post centres (maximum):** To suit panel size.
- **Fasteners and fittings:** Refer to drawing

System completion

25-20-30/870 Inspection of fencing systems

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Timing:** Submit proposals.
- **Period of notice (minimum):** Three working days.

Ω End of system

25-20-30/161 Steel vertical bar fencing system

System outline

25-20-30/161 Steel vertical bar fencing system

- **System performance:** Refer to drawings
- **System manufacturer:** Refer to drawings
- **Standard:** To BS 1722-9.
- **Posts:** Refer to drawings
- **Post foundations:** Refer to drawings
- **Base boards:** Refer to drawings
- **Rails:** Refer to drawings
- **Panels:** Refer to drawings
- **Fence topping:** Refer to drawings
- **Site applied finishes:** Refer to drawings
- **System accessories:** Refer to drawings
- **Samples required:** Refer to drawings
- **Execution:** 25-20-30/605 Alignment of fences;
25-20-30/607 Fencing work generally;
25-20-30/611 Building fence components into masonry walls;
25-20-30/612 Fixing fence post base plates to concrete pads and strips;
25-20-30/613 Fixing fence posts into preformed holes in concrete pads and strips;
25-20-30/615 Formation of holes for in situ concrete pad or strip foundations for fence posts;
and 25-20-30/744 Erecting welded steel vertical bar fencing systems.
- **System completion:** 25-20-30/870 Inspection of fencing systems.

Execution

25-20-30/605 Alignment of fences

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Alignment of fences and barriers:** Straight lines or smoothly flowing curves, following profile of the ground.
- **Tops of posts:** Follow ground profile.
- **Verticality:** Plumb.
- **Tolerances:** ± 30 mm of prescribed alignment and, within any 10 m length, ± 15 mm from the straight or required radius.
- **Changes of direction:** Obtuse angles such that no angle is less than 130° .

25-20-30/607 Fencing work generally

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Metal fixings:** Protect from corrosion.
- **In situ welding:** Submit proposals.

- **Treatment of minor damage to galvanized surfaces:**
 - **Repairs to areas of damage less than 40 mm²:**

Method: Submit proposals.

Zinc coating thickness (minimum): Thickness of the original layer.
- **Site cutting of wood:**
 - **Components generally:** Minimize cutting.
 - **Wood below or near ground level:** Do not cut.
 - **Treatment of surfaces exposed by minor cutting and drilling:**

Method: Apply sufficient material to provide a coating equal to the original preservative.

Number of coats: Submit proposals.
- **Site applied finishes:**
 - **Timing:** Prepare surfaces and apply finishes as soon as possible after fixing.
- **Disposal of arisings:**
 - **Biodegradable arisings:** Remove to recycling facility.
 - **Tree roots and stumps:** Remove from site.
 - **Litter and nonbiodegradable arisings:** Remove from site.

25-20-30/611 Building fence components into masonry walls

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Components being built in:** Accurately position and securely support. Set in mortar. Point neatly to match adjacent walling.
- **Temporary support:** Maintain for 48 hours (minimum) and prevent disturbance.
- **Method:** Securely fix components.
- **Setting method:** Submit proposals.

25-20-30/612 Fixing fence post base plates to concrete pads and strips

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Post fasteners:** Submit proposals.
- **Fixing:** Securely fix components.

25-20-30/613 Fixing fence posts into preformed holes in concrete pads and strips

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Post centres (maximum):** Submit proposals.
- **Setting method:** Submit proposals.

25-20-30/615 Formation of holes for in situ concrete pad or strip foundations for fence posts

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Dimensions:**
 - **Hole plan size (minimum):** Submit proposals.
 - **Hole depth (minimum):** Submit proposals.
- **Formation:** Excavate neatly, with vertical sides.

25-20-30/744 Erecting welded steel vertical bar fencing systems

- **Standard:** To BS 1722-9.
- **Fence height:** Refer to drawings
- **Post centres (maximum):** Refer to drawings
- **Intermediate supports:** Two supports securely fixed to the bottom horizontal, evenly spaced.
- **Ground clearance (average):** 100 mm ± 5 mm.
- **Position of top rail:**
 - **Fences over 1500 mm:**
 - **Fences over 1000 mm and below 1500 mm:** Refer to drawings
 - **Fences up to 1000 mm:**
- **Additional security:**
- **Fasteners and fittings:** Refer to drawings

System completion

25-20-30/870 Inspection of fencing systems

Shared by: 25-20-30/155 Prefabricated wood or plastics panel fencing system; and 25-20-30/161 Steel vertical bar fencing system.

- **Timing:** Submit proposals.
- **Period of notice (minimum):** Three working days.

Ω End of system

25-60-35/109 Hinged gate system

System outline

25-60-35/109 Hinged gate system

- **System performance:** 25-60-35/210 Accessibility and 25-60-35/220 Gate systems to match fencing.
- **System manufacturer:** Refer to drawing
- **Standard:** To BS 1722-7;
To BS 1722-8;
To BS 1722-9;
To BS 1722-12;
To BS 3470;
To BS 4092-1;
To BS 5709;
and To BS 7818.
- **Method of operation:** Manual.
- **Gate assembly:** Refer to drawing
- **Post foundations:**
- **Site applied finishes:** Refer to drawing
- **System accessories:**
- **Execution:** 25-60-35/602 Alignment;
25-60-35/603 Work on or adjacent to highways;
25-60-35/617 Fixing base plates to concrete pads and strips;
25-60-35/621 Building in to masonry walls;
25-60-35/641 Erecting wrought iron gate system;
25-60-35/605 Work on gates generally;
and 25-60-35/607 Fabrication of wrought iron free ornament.
- **System completion:** Refer to drawing

System performance

25-60-35/210 Accessibility

- **Standard:** To BS 5709.
- **Access inhibited:** Submit proposals.

25-60-35/220 Gate systems to match fencing

- **General:** Match performance of associated fence and/ or wall.

Execution

25-60-35/602 Alignment

- **Alignment of gates:** Following profile of surrounding fence or barrier.
- **Verticality:** Plumb.

- **Tolerances:** ± 30 mm of prescribed alignment and, within any 10 m length, ± 15 mm from the straight or required radius.

25-60-35/603 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 during the course of the works.

25-60-35/605 Work on gates generally

- **Metal fixings:** Protect from corrosion.
- **In situ welding:** Submit proposals.
- **Treatment of minor damage to galvanized surfaces:**
 - **Repairs to areas of damage less than 40 mm²:**
 - Method:** Submit proposals.
 - Zinc coating thickness (minimum):** Thickness of the original layer.
- **Site cutting of wood:**
 - **Components generally:** Minimize cutting.
 - **Wood below or near ground level:** Do not cut.
 - **Treatment of surfaces exposed by minor cutting and drilling:**
 - Method:** Apply sufficient material to provide a coating equal to the original preservative.
 - Number of coats:** Submit proposals.
- **Site applied finishes:**
 - **Timing:** Prepare surfaces and apply finishes as soon as possible after fixing.
- **Disposal of arisings:**
 - **Biodegradable arisings:**
 - **Tree roots and stumps:** Remove from site.
 - **Litter and nonbiodegradable arisings:** Remove from site.

25-60-35/607 Fabrication of wrought iron free ornament

- **Documentation:** Submit certification of training and experience.
- **Samples:** Submit on request an executed piece of work carried out by the proposed blacksmith.
- **Workmanship:**
 - **Ornamental work:** Carefully forged, hand wrought and incised, where required, to produce the design and effect desired.
 - **Free ornament:** Forged from substantial iron and forge welded where connected to other ironwork.
 - **Accuracy:** Substantially framed together and closely fitted.
 - **Cast parts:** Not permitted other than as indicated on the approved design drawings.
- **Electric welding:** Not permitted.
- **Joints:**
 - **Method:** Neatly tenoned and riveted or forge welded.
 - **Heads of tenons and rivets:** Submit proposals.

25-60-35/617 Fixing base plates to concrete pads and strips

- **Post fasteners:** Submit proposals.
- **Resistance to vandalism:**
- **Fixings:** Securely fix components.

- **Additional requirements:** Grease threads.

25-60-35/621 Building in to masonry walls

- **Components being built in:** Accurately position and securely support. Set in mortar. Point neatly to match adjacent walling.
- **Temporary support:** Maintain for 48 hours (minimum) and prevent disturbance.
- **Fasteners:** Submit proposals.
- **Fixings:**
 - **Components:** Secure.
 - **To resist vandalism:**
- **Threads:** Grease.

25-60-35/641 Erecting wrought iron gate system

- **Fixing:** Refer to drawing
- **Span:** Refer to drawing
- **Fasteners and fittings:** Refer to drawing

Ω End of system

30-05-25/135 Ground bearing external stair system

System outline

30-05-25/135 Ground bearing external stair system

- **System performance:** [30-05-25/210 Design of straight external stair systems.](#)
- **System manufacturer:** Refer to drawing
- **Surface:**
 - **Material:** Refer to drawing
 - **Applied anti-slip treatment:** Refer to drawing
 - **Applied stair nosings:** Refer to drawing
- **Balustrade guarding:** Refer to drawing
- **System accessories:** Hand Rail . See Drawing
- **Samples required:** Submit proposals.
- **Execution:** [30-05-25/620 Installation of stair systems generally;](#)
[30-05-25/630 Concrete foundations for external ramp and stair systems generally;](#)
[30-05-25/640 Setting external ramp and stair components in concrete;](#)
and [30-05-25/670 Installation of external stairs and ramp systems generally.](#)
- **System completion:** [30-05-25/810 Inspection of external ramps and stair systems.](#)

System performance

30-05-25/210 Design of straight external stair systems

- **Design:** Complete the design to meet structural and safety requirements of BS 5395-1 and in accordance with BS 8300 and Complete the design in accordance with BS 8300.
- **Purpose:** Refer to drawing
- **Category of loaded area:** Refer to drawing
- **Arrangement:**
 - **Stair flights:** Refer to drawing
 - **Steps:** Refer to drawing
 - **Strings:** Refer to drawing
- **Total rise:** Refer to drawing
- **Total going:** Refer to drawing
- **Pitch (maximum):** Refer to drawing
- **Tread depth (minimum):** Refer to drawing
- **Tread width (minimum):** Refer to drawing
- **Riser height (maximum):** Refer to drawing
- **Additional performance criteria:** Refer to drawing

Execution

30-05-25/620 Installation of stair systems generally

- **Standard:** To BS 5395-1 and To BS 5395-2.

30-05-25/630 Concrete foundations for external ramp and stair systems generally

- **Standard:** To BS 8500-2.
- **Mix:** Designated concrete not less than GEN 1 or standardized prescribed concrete not less than ST2.
- **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.

30-05-25/640 Setting external ramp and stair components in concrete

- **Base:** Refer to drawing
- **Holes:**
- **Components:** Accurately position and securely support.
- **Concrete fill:** Compact as filling proceeds.
- **Concrete foundations exposed to view:** Finish to weathering profile to shed water. Trowel smooth.
- **Temporary component support:** Maintain undisturbed for minimum 48 hours.

30-05-25/670 Installation of external stairs and ramp systems generally

- **Structural members:** Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
- **Temporary support:** Do not use finished work as temporary support or strutting for other work.
- **Site finish:** Ensure that the finish is appropriate to the material specified.

System completion

30-05-25/810 Inspection of external ramps and stair systems

- **Timing:** Submit proposals.
- **Period of notice (minimum):** Submit proposals.

40-35-00/110 Bed-planted annual, perennial and bulb system

System outline

40-35-00/110 Bed-planted annual, perennial and bulb system

- **Preparatory work:**
 - **Herbicide:** Submit proposals.
 - **Weed suppression:** Mulch refer to plant schedule and drawings
 - **Fertilizer:** Submit proposals.
- **Plants:** 45-40-10/311 Bulbs, corms and tubers;
45-40-10/313 Perennials supplied as roots only;
45-40-35/311 Container grown perennials;
45-40-35/313 Perennials supplied as plugs;
and 45-40-35/315 Perennials supplied in clumps.
- **Mulch:** Refer to drawings.
- **Supports:** Refer to drawings.
- **Protection:** Refer to drawings
- **Labels:** 45-35-45/320 Delivery labels for plants.
- **Execution:** 40-35-00/601 Amenity planting generally type A;
40-35-00/605 Climatic conditions for amenity planting type A;
40-35-00/609 Protection of existing grass during amenity planting;
40-35-00/610 Water restrictions type A;
40-35-00/612 Cultivation of topsoil type A;
40-35-00/613 Preparation of undisturbed topsoil type A;
40-35-00/617 Applying fertilizer as a base dressing before cultivation;
40-35-00/631 Setting out of wildflower turf areas type A;
40-35-00/661 Planting wild flower plugs type A;
40-35-00/662 Planting bulbs and tubers in holes;
;
and 40-35-00/691 Applying loose mulch to planting beds.
- **System completion:** 40-35-00/801 Operations immediately after planting;
40-35-00/802 Establishment of new planting;
40-35-00/803 Weeding new planting;
40-35-00/804 Fertilizing new planting;
40-35-00/806 Watering new planting;
40-35-00/807 Final mulching of planting beds and trees;
40-35-00/809 Plants that have failed to thrive;
and 40-35-00/810 Instructions for future maintenance.

Products

45-35-45/320 Delivery labels for plants

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Standard:** To BS 3936-1 and To National Plant Specification standards.

- **Labels:** Provide for each plant.
- **Information required:** The full botanical name.

45-40-10/301 Nursery stock generally

Shared by: 45-40-10/311 Bulbs, corms and tubers; and 45-40-10/313 Perennials supplied as roots only.

- **Condition:** Materially undamaged, sturdy, healthy and vigorous.
- **Appearance:** Of good shape and without elongated shoots, appropriate to species and variety.
- **Hardiness:** Grown in a suitable environment and hardened off.
- **Health:** Free from pests, diseases, discoloration, weeds and physiological disorders.
- **Species:** True to name.

45-40-10/311 Bulbs, corms and tubers

- **General requirements:** 45-40-10/301 Nursery stock generally.
- **Supplier:** Submit proposals.
- **Standards:** In accordance with the National plant specification.
- **Botanical name:** Refer to plant schedule
- **Grade:** Refer to plant schedule
- **Condition:** Firm and visibly free of pests and diseases.
- **Execution:** 45-40-10/607 Planting bulbs, corms, tubers and roots type A and 45-40-10/609 Naturalized planting in existing grassed areas.

45-40-10/313 Perennials supplied as roots only

- **General requirements:** 45-40-10/301 Nursery stock generally.
- **Supplier:** Submit proposals.
- **Standards:** In accordance with the National plant specification.
- **Botanical name:** Refer to plant schedule
- **Root condition:** Free from physiological damage and fungal infections. Roots to be wrapped in breathable material.
- **Origin and provenance:** British grown.
- **Execution:** 45-40-10/603 Handling bulbs, corms, tubers and roots and 45-40-10/607 Planting bulbs, corms, tubers and roots type B.

45-40-35/301 Nursery stock

Shared by: 45-40-35/311 Container grown perennials; 45-40-35/313 Perennials supplied as plugs; and 45-40-35/315 Perennials supplied in clumps.

- **Condition:** Materially undamaged, sturdy, healthy and vigorous.
- **Appearance:** Of good shape and without elongated shoots, appropriate to species and variety.
- **Hardiness:** Grown in a suitable environment and hardened off.
- **Health:** Free from pests, diseases, discoloration, weeds and physiological disorders.
- **Species:** True to name.

45-40-35/303 Temporary labelling and information

Shared by: 45-40-35/311 Container grown perennials; 45-40-35/313 Perennials supplied as plugs; and 45-40-35/315 Perennials supplied in clumps.

- **Labels to provide the following information:** Full botanical name.Total number.Number of bundles.Part bundles.Supplier's name.Employer's name and project reference.
Plant specification, in accordance with scheduled National plant specification categories.

45-40-35/307 Plants reserved at supplier's premises

Shared by: 45-40-35/311 Container grown perennials; 45-40-35/313 Perennials supplied as plugs; and 45-40-35/315 Perennials supplied in clumps.

- **Pre-delivery inspection:** Give notice.
- **Labelling:** Identify inspected plants as reserved for use on this project.

45-40-35/311 Container grown perennials

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; and 40-35-00/165 Pit-planted perennial system.

- **General requirements:** 45-40-35/307 Plants reserved at supplier's premises; 45-40-35/301 Nursery stock; and 45-40-35/303 Temporary labelling and information.
- **Supplied by:** Submit proposals.
- **Standards:** In accordance with the National plant specification.
- **Botanical name:** Refer to plant schedule.
- **Root condition:** Container grown. Plants to be centred in the container, well rooted, firm and moist on delivery. Surface of the growing medium to be free of all weeds. The root system must never be allowed to dry out. Container to have adequate holes for drainage when placed on any substrate.
- **Size of container:** Refer to plant schedule
- **Spread:** Refer to plant schedule
- **Origin and provenance:** British grown.
- **Execution:** 45-40-35/603 Plant handling, storage and transport.

45-40-35/313 Perennials supplied as plugs

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; and 40-35-00/165 Pit-planted perennial system.

- **General requirements:** 45-40-35/307 Plants reserved at supplier's premises; 45-40-35/301 Nursery stock; and 45-40-35/303 Temporary labelling and information.
- **Supplied by:** Submit proposals.
- **Standards:** In accordance with the National plant specification.
- **Botanical name:** Refer to plant schedule
- **Root condition:** Plants centred in the container, firm and moist on delivery. Root system to be well developed appropriate to the natural characteristics of the species/cultivar taking into account its age and growth rate. Surface of the growing medium free of all weeds.
- **Size of plug:** Submit proposals.
- **Origin and provenance:** British grown.
- **Execution:** 45-40-35/603 Plant handling, storage and transport.

45-40-35/315 Perennials supplied in clumps

- **General requirements:** 45-40-35/307 Plants reserved at supplier's premises; 45-40-35/301 Nursery stock; and 45-40-35/303 Temporary labelling and information.
- **Supplied by:** Submit proposals.
- **Standards:** In accordance with the National plant specification.

- **Botanical name:** Refer to plant schedule
- **Root condition:** Buds and roots vigorous and free from physiological damage. Clump free of all weeds and fungal infections. Roots to be wrapped.
- **Spread:** Refer to plant schedule
- **Origin and provenance:** British grown.
- **Execution:** 45-40-35/603 Plant handling, storage and transport.

Execution

40-35-00/601 Amenity planting generally type A

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; and 40-35-00/160 Pit-planted climber system.

- **Standard:** To HTA 'Handling and establishing landscape plants'.

40-35-00/605 Climatic conditions for amenity planting type A

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; and 40-35-00/160 Pit-planted climber system.

- **General:** Carry out the work while soil and weather conditions are suitable. Do not plant in strong winds or in waterlogged soils.

40-35-00/609 Protection of existing grass during amenity planting

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

40-35-00/610 Water restrictions type A

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; and 40-35-00/160 Pit-planted climber system.

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

40-35-00/611 Disposal of arisings

Shared by: 40-35-00/612 Cultivation of topsoil type A; type B and type C; and 40-35-00/613 Preparation of undisturbed topsoil type A and type B.

- **Scope:** Remove from hard surfaces and grassed areas and Maintain clean surfaces as shown on drawings.
- **Timing:** Before topsoil stripping, if any.
- **General:**
 - **Biodegradable arisings:** Compost on site.
 - **Grass cuttings:** Compost on site.
 - **Tree roots and stumps:** Remove from site.
 - **Shrub and tree prunings:** Compost on site.
 - **Litter and nonbiodegradable arisings:** Remove from site.
 - **Diseased plant material:** Remove from site.
 - **Stones with any dimension exceeding:** Submit proposals.

- **Contamination:** Remove from site material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.

40-35-00/612 Cultivation of topsoil type A

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; and 40-35-00/160 Pit-planted climber system.

- **General requirements:** 40-35-00/611 Disposal of arisings.
- **Grading and cultivation:**
 - **Standard:** In accordance with BS 4428.
- **Working conditions:**
 - **Soil condition:** Reasonably dry and workable.
 - **Timing:** Within a few days before planting.
 - **Weather and ground conditions:** Suitably dry.
- **Compacted topsoil:** Break up to full depth.
- **Soil with root spread of trees and shrubs to be retained:** Submit proposals.
- **Tilth:**
 - **Generally:** Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
 - **Depth:** Refer to drawings.
 - **Particle size (maximum):** 10 mm.
- **Surface:**
 - **Contours:** Smooth and flowing, with falls for adequate drainage.
 - **Hollows and ridges:** Not permitted.
- **Remove visible weeds, roots and large stones with any dimensions exceeding:** 75 mm.
- **Give notice:** If required levels cannot be achieved by movement of existing soil.
- **Disposal of arisings:**
 - **Biodegradable arisings:** Compost on site.
 - **Tree roots and stumps:** Remove from site.
 - **Litter and nonbiodegradable arisings:** Remove from site.

40-35-00/613 Preparation of undisturbed topsoil type A

- **General requirements:** 40-35-00/611 Disposal of arisings.
- **Hard ground:** Submit proposals.
- **Remove visible roots and large stones with a diameter greater than:** 75 mm.
- **Areas covered with turf or thick sward:** Submit proposals.
- **Weed control:**
 - **Timing:** Submit proposals.
 - **Treatment:** Remove by hand as required.

40-35-00/617 Applying fertilizer as a base dressing before cultivation

- **Locations for application:** All planting areas. Except for existing and proposed lawns and wildflower areas.
- **Application:**
 - **Spreading:** Evenly, in transverse directions.
 - **Timing:** Immediately before cultivation.
 - **Application rate:** Submit proposals.

40-35-00/631 Setting out of wildflower turf areas type A

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; and 40-35-00/135 Wildflower system.

- **Layout:** Refer to drawings
- **Planting density:** Not applicable

40-35-00/661 Planting wild flower plugs type A

- **Handling:** Keep plants watered and in shade until planted. Do not allow to dry out.
- **Preparation:** Remove brambles, coarse and invasive weeds from planting sites.
- **Planting in grass:** Close mow to approximately 50 mm. Remove arisings.
- **Planting sites:** Refer to drawings
- **Planting:** Place in a hole to suit plug size and shape. Create a cleft at bottom of hole to improve rooting. Gently firm plant into hole.

40-35-00/662 Planting bulbs and tubers in holes

- **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.

40-35-00/691 Applying loose mulch to planting beds

- **Preparation:** Clear weeds. Water soil thoroughly.
- **Coverage:** Refer to drawings
- **Finished level of mulch:** 50 mm below adjacent grassed or paved areas.

45-40-10/603 Handling bulbs, corms, tubers and roots

- **Standard:** In accordance with HTA 'Handling and establishing landscape plants'.
- **Handling:** Remove from packaging immediately.
- **Storage on site:**
 - **Location:** Well ventilated, dark, covered, rodent proof container. Locate away from exhausts and fruit.
 - **Duration:** Minimum period. Permitted only when necessary.

45-40-10/607 Planting bulbs, corms, tubers and roots type A

- **Depth of top of bulb, corm and tuber:** Approximately twice its height. Place base in contact with bottom of hole.
- **Backfilling:** Finely broken soil. Lightly firm to existing ground level.

45-40-10/607 Planting bulbs, corms, tubers and roots type B

- **Depth of top of bulb, corm and tuber:** Approximately twice its height. Place base in contact with bottom of hole.
- **Backfilling:** Finely broken soil. Lightly firm to existing ground level.

45-40-10/609 Naturalized planting in existing grassed areas

- **Scattering:** Random. Plant bulbs, corms and tubers where they fall.
- **Planting:** Neatly remove a plug of turf and replace after planting.

45-40-35/603 Plant handling, storage and transport

Shared by: 45-40-35/311 Container grown perennials; 45-40-35/313 Perennials supplied as plugs; and 45-40-35/315 Perennials supplied in clumps.

- **Standard:** In accordance with 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.
- **Planting:** Upright or well balanced with best side to front.

System completion

40-35-00/801 Operations immediately after planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Watering:** Immediately after planting, water thoroughly. Do not damage or displace plants or soil.
- **Top dressing depth (minimum):** Not required.

40-35-00/802 Establishment of new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Duration:** Untill established and confirmed by Landscape Architect.
- **Soil condition:** Ensure soil remains well watered during plant establishment.

40-35-00/803 Weeding new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Weed control:**
 - **General:** Remove invasive weeds by hand.
 - **Area:** Maintain a weed free area.

40-35-00/804 Fertilizing new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/160 Pit-planted climber system; and 40-35-00/165 Pit-planted perennial system.

- **Time of year:** March or April.
- **Application:**
 - **Method:** Spread evenly. Carefully lift and replace mulch materials.
 - **Application rate (minimum):** Submit proposals.

40-35-00/806 Watering new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Frequency:** As necessary to ensure establishment and continued thriving of planting.
- **Interval (nominal):** As necessary

- **Timing:** Evening.

40-35-00/807 Final mulching of planting beds and trees

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/165 Pit-planted perennial system; and 40-35-00/170 Pit-planted semi-mature tree system.

- **Timing:** At end of the maintenance period.
- **Watering:** Thoroughly moisten soil before remulching. Water where necessary.
- **Depth of mulch (minimum):** Refer to drawings

40-35-00/809 Plants that have failed to thrive

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Defects due to materials or workmanship not in accordance with the Contract:**
 - **Exclusions:** Theft or malicious damage after completion.
 - **Rectification:** Replace with equivalent plants.
- **Replacements:** To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
- **Timing of making good:** In accordance with an agreed defects rectification programme.

40-35-00/810 Instructions for future maintenance

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Recommended procedures for maintenance of planting work for one year:**
 - **Format:** Printed.
 - **Timing:** Submit proposals.
 - **Content:** Schedule of ongoing maintenance problems experienced during the rectification period and Details of special procedures to be carried out.
 - **Fertiliser:** Generally no fertiliser is required.
 - **Cutting regime:** Once established cutting should be undertaken once per year in the Autumn. This should be done by strimming and raking cutting back to a length between 25-50mm. in height.
 - **Clear arisings:** The cut and remove should be carried out from late summer, after the plants have set and shed their seed.

40-35-00/135 Wildflower system

System outline

40-35-00/135 Wildflower system

- **Preparatory work to soil:**
 - **Herbicide:** Submit proposals.
 - **Weed suppression:** Remove by hand.
- **Plants:** Refer to plant schedule
- **Execution:** 40-35-00/601 Amenity planting generally type A;
40-35-00/605 Climatic conditions for amenity planting type A;
40-35-00/610 Water restrictions type A;
40-35-00/631 Setting out of wildflower turf areas type A; and 40-35-00/672 Planting wildflower turf40-35-00/673 Installing wildflower earth
- **System completion:** 40-35-00/801 Operations immediately after planting;
40-35-00/802 Establishment of new planting;
40-35-00/803 Weeding new planting;
40-35-00/806 Watering new planting;
40-35-00/809 Plants that have failed to thrive;
and 40-35-00/810 Instructions for future maintenance.

Execution

40-35-00/601 Amenity planting generally type A

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; and 40-35-00/160 Pit-planted climber system.

- **Standard:** To HTA 'Handling and establishing landscape plants'.

40-35-00/605 Climatic conditions for amenity planting type A

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; and 40-35-00/160 Pit-planted climber system.

- **General:** Carry out the work while soil and weather conditions are suitable. Do not plant in strong winds or in waterlogged soils.

40-35-00/610 Water restrictions type A

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; and 40-35-00/160 Pit-planted climber system.

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

40-35-00/631 Setting out of wildflower turf areas type A

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; and 40-35-00/135 Wildflower system.

- **Layout:** Refer to drawings
- **Planting density:** Not applicable

40-35-00/672 Planting wildflower turf

- **Preparation:** Existing vegetation should be killed or removed. Dig over or rotovate the soil to at least 100mm deep and rake over to create a reasonably fine tilth. Remove large stones, roots or clods of earth as it is important that the roots of the plants in the turf are all in close contact with the soil.
- **Soil condition:** Ensure soil is not waterlogged or compacted prior to laying the turf. There is no need to fertilise the soil before or after laying the turf. Wildflowers thrive on soils that are low in nutrients - although where wildflowers thrive on soils that are low in nutrients - although where soils are very low in nutrients a light application of general purpose fertiliser can help with plant establishment. There is no need to strip top soil to reduce fertility before installing turf, but where the soil is fertile particular attention must be paid to the maintenance regime.
- **Planting sites:** Refer to drawings
- **Laying:** When laying Wildflower Earth, care should be taken to ensure a uniform depth of 20-25mm. Do not over or under apply the material. Over application results in an imbalance of seed and nutrient ratios for a given area. Under applying has the opposite effect whilst also limiting Wildflower Earth's ability to suppress weed seeds in the surface of the soil beneath it.
- **Fertiliser:** Not required.

40-35-00/673 Installing wildflower earth

- **Preparation:** Existing vegetation should be killed or removed. Dig over or rotovate the soil to at least 100mm deep and rake over to create a reasonably fine tilth. Remove large stones, roots or clods of earth as it is important that the roots of the plants in the turf are all in close contact with the soil.
- **Soil condition:** Ensure soil is not waterlogged or compacted prior to installing the Wildflower Earth. There is no need to fertilise the soil before or after installation. Wildflowers thrive on soils that are low in nutrients although where soils are very low in nutrients a light application of general purpose fertiliser can be added to the Wildflower Earth prior to installation. Any additional fertiliser or ameliorates to suppliers approval and recommendations. There is no need to strip topsoil to reduce soil fertility but where soil is fertile particular attention should be paid to the maintenance regime.
- **New clause item 1:** When laying Wildflower Earth, care should be taken to ensure a uniform depth of 20-25mm. Do not over or under apply the material. Over application results in an imbalance of seed and nutrient ratios for a given area. Under applying has the opposite effect whilst also limiting Wildflower Earth's ability to suppress weed seeds in the surface of the soil beneath it.
- **Planting sites:** Refer to drawings.
- **Fertiliser:** Not required.

System completion

40-35-00/801 Operations immediately after planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Watering:** Immediately after planting, water thoroughly. Do not damage or displace plants or soil.
- **Top dressing depth (minimum):** Not required.

40-35-00/802 Establishment of new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower

system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Duration:** Until established and confirmed by Landscape Architect.
- **Soil condition:** Ensure soil remains well watered during plant establishment.

40-35-00/803 Weeding new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Weed control:**
 - **General:** Remove invasive weeds by hand.
 - **Area:** Maintain a weed free area.

40-35-00/806 Watering new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Frequency:** As necessary to ensure establishment and continued thriving of planting.
- **Interval (nominal):** As necessary
- **Timing:** Evening.

40-35-00/809 Plants that have failed to thrive

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Defects due to materials or workmanship not in accordance with the Contract:**
 - **Exclusions:** Theft or malicious damage after completion.
 - **Rectification:** Replace with equivalent plants.
- **Replacements:** To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
- **Timing of making good:** In accordance with an agreed defects rectification programme.

40-35-00/810 Instructions for future maintenance

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Recommended procedures for maintenance of planting work for one year:**
 - **Format:** Printed.
 - **Timing:** Submit proposals.
 - **Content:** Schedule of ongoing maintenance problems experienced during the rectification period and Details of special procedures to be carried out.
 - **Fertiliser:** Generally no fertiliser is required.
 - **Cutting regime:** Once established cutting should be undertaken once per year in the Autumn. This should be done by strimming and raking cutting back to a length between 25-50mm. in height.
 - **Clear arisings:** The cut and remove should be carried out from late summer, after the plants have set and shed their seed.

40-35-00/160 Pit-planted climber system

System outline

40-35-00/160 Pit-planted climber system

- **Preparatory work to soil:**
 - **Herbicide:** Submit proposals.
 - **Weed suppression:** Mulch refer to plant schedule and drawing
- **Plant pit backfill material:** Approved top soil
- **Mulch:** Refer to drawings
- **Supports:** Submit proposals.
- **Labels:** 45-35-45/320 Delivery labels for plants.
- **Execution:** 40-35-00/601 Amenity planting generally type A;
40-35-00/605 Climatic conditions for amenity planting type A;
40-35-00/610 Water restrictions type A;
40-35-00/612 Cultivation of topsoil type A;
40-35-00/706 Attaching supports for climbing plants;
and 40-35-00/644 Planting climbing plants.
- **System completion:** 40-35-00/801 Operations immediately after planting;
40-35-00/802 Establishment of new planting;
40-35-00/803 Weeding new planting;
40-35-00/804 Fertilizing new planting;
40-35-00/806 Watering new planting;
40-35-00/809 Plants that have failed to thrive;
Training
and 40-35-00/810 Instructions for future maintenance.

Products

45-35-45/320 Delivery labels for plants

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Standard:** To BS 3936-1 and To National Plant Specification standards.
- **Labels:** Provide for each plant.
- **Information required:** The full botanical name.

Execution

40-35-00/601 Amenity planting generally type A

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; and 40-35-00/160 Pit-planted climber system.

- **Standard:** To HTA 'Handling and establishing landscape plants'.

40-35-00/605 Climatic conditions for amenity planting type A

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; and 40-35-00/160 Pit-planted climber system.

- **General:** Carry out the work while soil and weather conditions are suitable. Do not plant in strong winds or in waterlogged soils.

40-35-00/610 Water restrictions type A

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; and 40-35-00/160 Pit-planted climber system.

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

40-35-00/611 Disposal of arisings

Shared by: 40-35-00/612 Cultivation of topsoil type A; type B and type C; and 40-35-00/613 Preparation of undisturbed topsoil type A and type B.

- **Scope:** Remove from hard surfaces and grassed areas and Maintain clean surfaces as shown on drawings.
- **Timing:** Before topsoil stripping, if any.
- **General:**
 - **Biodegradable arisings:** Compost on site.
 - **Grass cuttings:** Compost on site.
 - **Tree roots and stumps:** Remove from site.
 - **Shrub and tree prunings:** Compost on site.
 - **Litter and nonbiodegradable arisings:** Remove from site.
 - **Diseased plant material:** Remove from site.
 - **Stones with any dimension exceeding:** Submit proposals.
 - **Contamination:** Remove from site material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.

40-35-00/612 Cultivation of topsoil type A

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; and 40-35-00/160 Pit-planted climber system.

- **General requirements:** 40-35-00/611 Disposal of arisings.
- **Grading and cultivation:**
 - **Standard:** In accordance with BS 4428.
- **Working conditions:**
 - **Soil condition:** Reasonably dry and workable.
 - **Timing:** Within a few days before planting.
 - **Weather and ground conditions:** Suitably dry.
- **Compacted topsoil:** Break up to full depth.
- **Soil with root spread of trees and shrubs to be retained:** Submit proposals.
- **Tilth:**
 - **Generally:** Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
 - **Depth:** Refer to drawings.
 - **Particle size (maximum):** 10 mm.
- **Surface:**

- **Contours:** Smooth and flowing, with falls for adequate drainage.
- **Hollows and ridges:** Not permitted.
- **Remove visible weeds, roots and large stones with any dimensions exceeding:** 75 mm.
- **Give notice:** If required levels cannot be achieved by movement of existing soil.
- **Disposal of arisings:**
 - **Biodegradable arisings:** Compost on site.
 - **Tree roots and stumps:** Remove from site.
 - **Litter and nonbiodegradable arisings:** Remove from site.

40-35-00/644 Planting climbing plants

- **Dimensions:**
 - **Plan size (minimum):** As Plant schedule.
 - **Depth (minimum):** As Plant schedule.
- **Sloping ground:** Maintain minimum depth throughout.
- **Pit bottoms:**
 - **Generally:** Break up. Slightly raise centre.
 - **Break up depth (nominal):** 200 mm.
- **Pit sides:** Vertical. Scarify.
- **Position:** 150 mm clear of supporting structure (e.g. wall/ fence) with roots spread outward.
- **Branches:** Lightly secure to supports.

40-35-00/706 Attaching supports for climbing plants

- **Climber supports:**
 - **Base height (minimum):** Submit proposals.
 - **Extent:** Submit proposals.
 - **Centres (maximum):** Positions to be confirmed by Landscape Architect
 - **Distance from wall (minimum):** 75 mm.
- **Fixings centres (maximum):** Submit proposals.

System completion

40-35-00/801 Operations immediately after planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Watering:** Immediately after planting, water thoroughly. Do not damage or displace plants or soil.
- **Top dressing depth (minimum):** Not required.

40-35-00/802 Establishment of new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Duration:** Until established and confirmed by Landscape Architect.
- **Soil condition:** Ensure soil remains well watered during plant establishment.

40-35-00/803 Weeding new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Weed control:**
 - **General:** Remove invasive weeds by hand.
 - **Area:** Maintain a weed free area.

40-35-00/804 Fertilizing new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/160 Pit-planted climber system; and 40-35-00/165 Pit-planted perennial system.

- **Time of year:** March or April.
- **Application:**
 - **Method:** Spread evenly. Carefully lift and replace mulch materials.
 - **Application rate (minimum):** Submit proposals.

40-35-00/806 Watering new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Frequency:** As necessary to ensure establishment and continued thriving of planting.
- **Interval (nominal):** As necessary
- **Timing:** Evening.

40-35-00/809 Plants that have failed to thrive

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Defects due to materials or workmanship not in accordance with the Contract:**
 - **Exclusions:** Theft or malicious damage after completion.
 - **Rectification:** Replace with equivalent plants.
- **Replacements:** To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
- **Timing of making good:** In accordance with an agreed defects rectification programme.

40-35-00/810 Instructions for future maintenance

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Recommended procedures for maintenance of planting work for one year:**
 - **Format:** Printed.
 - **Timing:** Submit proposals.
 - **Content:** Schedule of ongoing maintenance problems experienced during the rectification period and Details of special procedures to be carried out.
 - **Fertiliser:** Generally no fertiliser is required.
 - **Cutting regime:** Once established cutting should be undertaken once per year in the Autumn. This should be done by strimming and raking cutting back to a length between 25-50mm. in height.

- **Clear arisings:** The cut and remove should be carried out from late summer, after the plants have set and shed their seed.

Ω End of system

40-35-00/165 Pit-planted perennial system

System outline

40-35-00/165 Pit-planted perennial system

- **System performance:** [40-35-00/220 Aesthetic performance of amenity planting systems](#) and .
- **Preparatory work to soil:**
 - **Herbicide:** Submit proposals.
 - **Weed suppression:** Mulch refer to plant schedule and drawing.
- **Plants:** [45-40-35/311 Container grown perennials](#) and [45-40-35/313 Perennials supplied as plugs](#).
- **Mulch:** Refer to drawing and plant schedule
- **Labels:** [45-35-45/320 Delivery labels for plants](#).
- **Execution:** [40-35-00/601 Amenity planting generally type C](#);
[40-35-00/603 Times of year for amenity planting type B](#);
[40-35-00/605 Climatic conditions for amenity planting type C](#);
[40-35-00/610 Water restrictions type C](#);
[40-35-00/612 Cultivation of topsoil type C](#);
[40-35-00/631 Random setting out of amenity planting type B](#);
and [40-35-00/661 Planting wild flower plugs type B](#).
- **System completion:** [40-35-00/801 Operations immediately after planting](#);
[40-35-00/802 Establishment of new planting](#);
[40-35-00/803 Weeding new planting](#);
[40-35-00/804 Fertilizing new planting](#);
[40-35-00/806 Watering new planting](#);
[40-35-00/807 Final mulching of planting beds and trees](#);
[40-35-00/809 Plants that have failed to thrive](#);
and [40-35-00/810 Instructions for future maintenance](#).

System performance

40-35-00/220 Aesthetic performance of amenity planting systems

Shared by: [40-35-00/165 Pit-planted perennial system](#); [40-35-00/170 Pit-planted semi-mature tree system](#); and [40-35-00/175 Pit-planted small tree or shrub system](#).

- **Design criteria:**
 - **Size:** Instant impact refer to drawings and plant schedule

Products

45-35-45/320 Delivery labels for plants

Shared by: [40-35-00/110 Bed-planted annual, perennial and bulb system](#); [40-35-00/160 Pit-planted climber system](#); [40-35-00/165 Pit-planted perennial system](#); [40-35-00/170 Pit-planted semi-mature tree system](#); and [40-35-00/175 Pit-planted small tree or shrub system](#).

- **Standard:** To BS 3936-1 and To National Plant Specification standards.
- **Labels:** Provide for each plant.

- **Information required:** The full botanical name.

45-40-35/301 Nursery stock

Shared by: 45-40-35/311 Container grown perennials; 45-40-35/313 Perennials supplied as plugs; and 45-40-35/315 Perennials supplied in clumps.

- **Condition:** Materially undamaged, sturdy, healthy and vigorous.
- **Appearance:** Of good shape and without elongated shoots, appropriate to species and variety.
- **Hardiness:** Grown in a suitable environment and hardened off.
- **Health:** Free from pests, diseases, discoloration, weeds and physiological disorders.
- **Species:** True to name.

45-40-35/303 Temporary labelling and information

Shared by: 45-40-35/311 Container grown perennials; 45-40-35/313 Perennials supplied as plugs; and 45-40-35/315 Perennials supplied in clumps.

- **Labels to provide the following information:** Full botanical name. Total number. Number of bundles. Part bundles. Supplier's name. Employer's name and project reference. Plant specification, in accordance with scheduled National plant specification categories.

45-40-35/307 Plants reserved at supplier's premises

Shared by: 45-40-35/311 Container grown perennials; 45-40-35/313 Perennials supplied as plugs; and 45-40-35/315 Perennials supplied in clumps.

- **Pre-delivery inspection:** Give notice.
- **Labelling:** Identify inspected plants as reserved for use on this project.

45-40-35/311 Container grown perennials

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; and 40-35-00/165 Pit-planted perennial system.

- **General requirements:** 45-40-35/307 Plants reserved at supplier's premises; 45-40-35/301 Nursery stock; and 45-40-35/303 Temporary labelling and information.
- **Supplied by:** Submit proposals.
- **Standards:** In accordance with the National plant specification.
- **Botanical name:** Refer to plant schedule.
- **Root condition:** Container grown. Plants to be centred in the container, well rooted, firm and moist on delivery. Surface of the growing medium to be free of all weeds. The root system must never be allowed to dry out. Container to have adequate holes for drainage when placed on any substrate.
- **Size of container:** Refer to plant schedule
- **Spread:** Refer to plant schedule
- **Origin and provenance:** British grown.
- **Execution:** 45-40-35/603 Plant handling, storage and transport.

45-40-35/313 Perennials supplied as plugs

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; and 40-35-00/165 Pit-planted perennial system.

- **General requirements:** 45-40-35/307 Plants reserved at supplier's premises; 45-40-35/301 Nursery stock; and 45-40-35/303 Temporary labelling and information.
- **Supplied by:** Submit proposals.

- **Standards:** In accordance with the National plant specification.
- **Botanical name:** Refer to plant schedule
- **Root condition:** Plants centred in the container, firm and moist on delivery. Root system to be well developed appropriate to the natural characteristics of the species/cultivar taking into account its age and growth rate. Surface of the growing medium free of all weeds.
- **Size of plug:** Submit proposals.
- **Origin and provenance:** British grown.
- **Execution:** 45-40-35/603 Plant handling, storage and transport.

Execution

40-35-00/601 Amenity planting generally type C

- **Standard:** To HTA 'Handling and establishing landscape plants'.
- **Planting:** Upright or well balanced with best side to front.

40-35-00/603 Times of year for amenity planting type B

- **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.
- **Wildflower plugs:** Late August to mid November or March/ April.

40-35-00/605 Climatic conditions for amenity planting type C

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

40-35-00/610 Water restrictions type C

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

40-35-00/611 Disposal of arisings

Shared by: 40-35-00/612 Cultivation of topsoil type A; type B and type C; and 40-35-00/613 Preparation of undisturbed topsoil type A and type B.

- **Scope:** Remove from hard surfaces and grassed areas and Maintain clean surfaces as shown on drawings.
- **Timing:** Before topsoil stripping, if any.
- **General:**
 - **Biodegradable arisings:** Compost on site.
 - **Grass cuttings:** Compost on site.
 - **Tree roots and stumps:** Remove from site.
 - **Shrub and tree prunings:** Compost on site.
 - **Litter and nonbiodegradable arisings:** Remove from site.
 - **Diseased plant material:** Remove from site.
 - **Stones with any dimension exceeding:** Submit proposals.
 - **Contamination:** Remove from site material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.

40-35-00/612 Cultivation of topsoil type C

- **General requirements:** 40-35-00/611 Disposal of arisings.
- **Grading and cultivation:**
 - **Standard:** In accordance with BS 4428.
- **Working conditions:**
 - **Soil condition:** Reasonably dry and workable.
 - **Timing:** Within a few days before planting.
 - **Weather and ground conditions:** Suitably dry.
- **Compacted topsoil:** Break up to full depth.
- **Tilth:**
 - **Generally:** Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
 - **Depth:** Refer to drawing.
 - **Particle size (maximum):** Refer to drawing.
- **Surface:**
 - **Contours:** Smooth and flowing, with falls for adequate drainage.
 - **Hollows and ridges:** Not permitted.
- **Remove visible weeds, roots and large stones with any dimensions exceeding:** 100 mm.
- **Give notice:** If required levels cannot be achieved by movement of existing soil.
- **Disposal of arisings:**
 - **Biodegradable arisings:** Compost on site.
 - **Tree roots and stumps:** Remove from site.
 - **Litter and nonbiodegradable arisings:** Remove from site.

40-35-00/631 Random setting out of amenity planting type B

- **Layout:** Landscape Architect to provide setting out, contractor to request for site inspection.
- **Planting density:** As Plant schedule.

40-35-00/661 Planting wild flower plugs type B

- **Handling:** Keep plants watered and in shade until planted. Do not allow to dry out.
- **Preparation:** Remove brambles, coarse and invasive weeds from planting sites.
- **Planting in grass:** Close mow to approximately 50 mm. Remove arisings.
- **Planting sites:** Refer to drawings
- **Planting:** Place in a hole to suit plug size and shape. Create a cleft at bottom of hole to improve rooting. Gently firm plant into hole.

45-40-35/603 Plant handling, storage and transport

Shared by: 45-40-35/311 Container grown perennials; 45-40-35/313 Perennials supplied as plugs; and 45-40-35/315 Perennials supplied in clumps.

- **Standard:** In accordance with 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.
- **Planting:** Upright or well balanced with best side to front.

System completion

40-35-00/801 Operations immediately after planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Watering:** Immediately after planting, water thoroughly. Do not damage or displace plants or soil.
- **Top dressing depth (minimum):** Not required.

40-35-00/802 Establishment of new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Duration:** Until established and confirmed by Landscape Architect.
- **Soil condition:** Ensure soil remains well watered during plant establishment.

40-35-00/803 Weeding new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Weed control:**
 - **General:** Remove invasive weeds by hand.
 - **Area:** Maintain a weed free area.

40-35-00/804 Fertilizing new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/160 Pit-planted climber system; and 40-35-00/165 Pit-planted perennial system.

- **Time of year:** March or April.
- **Application:**
 - **Method:** Spread evenly. Carefully lift and replace mulch materials.
 - **Application rate (minimum):** Submit proposals.

40-35-00/806 Watering new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Frequency:** As necessary to ensure establishment and continued thriving of planting.
- **Interval (nominal):** As necessary
- **Timing:** Evening.

40-35-00/807 Final mulching of planting beds and trees

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/165 Pit-planted perennial system; and 40-35-00/170 Pit-planted semi-mature tree system.

- **Timing:** At end of the maintenance period.
- **Watering:** Thoroughly moisten soil before remulching. Water where necessary.
- **Depth of mulch (minimum):** Refer to drawings

40-35-00/809 Plants that have failed to thrive

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Defects due to materials or workmanship not in accordance with the Contract:**
 - **Exclusions:** Theft or malicious damage after completion.
 - **Rectification:** Replace with equivalent plants.
- **Replacements:** To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
- **Timing of making good:** In accordance with an agreed defects rectification programme.

40-35-00/810 Instructions for future maintenance

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Recommended procedures for maintenance of planting work for one year:**
 - **Format:** Printed.
 - **Timing:** Submit proposals.
 - **Content:** Schedule of ongoing maintenance problems experienced during the rectification period and Details of special procedures to be carried out.
 - **Fertiliser:** Generally no fertiliser is required.
 - **Cutting regime:** Once established cutting should be undertaken once per year in the Autumn. This should be done by strimming and raking cutting back to a length between 25-50mm. in height.
 - **Clear arisings:** The cut and remove should be carried out from late summer, after the plants have set and shed their seed.

40-35-00/170 Pit-planted semi-mature tree system

System outline

40-35-00/170 Pit-planted semi-mature tree system

- **System performance:** [40-35-00/220 Aesthetic performance of amenity planting systems](#) and .
- **Preparatory work to soil:**
 - **Herbicide:** Submit proposals.
 - **Weed suppression:** Mulch
- **Trees:** [45-40-90/355 Rootballed trees](#).
- **Tree pit:**
 - **Tree pit accessories:** Refer to drawing
 - **Tree pit backfill:** [40-35-00/509 Tree and shrub pit backfilling material](#) to drawing
 - **Rootball support:** Refer to drawing
- **Mulch:** Refer to drawing and plant schedule
- **Supports:** Refer to drawing
- **Protection:** [45-40-65/410 Tree protectors type B](#).
- **Labels:** [45-35-45/320 Delivery labels for plants](#).
- **Execution:** [40-35-00/601 Amenity planting generally type B](#);
[40-35-00/603 Times of year for amenity planting type A](#);
[40-35-00/605 Climatic conditions for amenity planting type B](#);
[40-35-00/607 Notice for tree and shrub planting operations](#);
[40-35-00/610 Water restrictions type B](#);
[40-35-00/612 Cultivation of topsoil type B](#);
[40-35-00/613 Preparation of undisturbed topsoil type B](#);
[40-35-00/641 Planting semi-mature trees to BS 4043](#);
[40-35-00/642 Planting amenity trees in pits type B](#);
[40-35-00/650 Guying and underground guying for semi-mature trees](#);
[40-35-00/651 Installing tree pit irrigation, drainage and ventilation pipes](#);
and [40-35-00/692 Applying loose mulch around trees](#).
- **System completion:** [40-35-00/801 Operations immediately after planting](#);
[40-35-00/802 Establishment of new planting](#);
[40-35-00/803 Weeding new planting](#);
[40-35-00/806 Watering new planting](#);
[40-35-00/807 Final mulching of planting beds and trees](#);
[40-35-00/809 Plants that have failed to thrive](#);
and [40-35-00/810 Instructions for future maintenance](#).

System performance

40-35-00/220 Aesthetic performance of amenity planting systems

Shared by: [40-35-00/165 Pit-planted perennial system](#); [40-35-00/170 Pit-planted semi-mature tree system](#); and [40-35-00/175 Pit-planted small tree or shrub system](#).

- **Design criteria:**
 - **Size:** Instant impact refer to drawings and plant schedule

Products

45-35-45/320 Delivery labels for plants

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Standard:** To BS 3936-1 and To National Plant Specification standards.
- **Labels:** Provide for each plant.
- **Information required:** The full botanical name.

45-40-65/410 Tree protectors type B

- **Manufacturer:** Submit proposals.
- **Shape:** Spiral.
- **Material:** Submit proposals.
- **Size:** Submit proposals.
- **Colour:** Manufacturer's standard.

45-40-90/305 Nursery stock generally

Shared by: 45-40-90/320 Bare root trees; 45-40-90/355 Rootballed trees; 45-40-90/395 Container grown shrubs; and 45-40-90/415 Container grown climbers.

- **Condition:** Materially undamaged, sturdy, healthy and vigorous.
- **Appearance:** Of good shape and without elongated shoots, appropriate to species and variety.
- **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. Visible suckers to be removed flush with rootstock. Trees to be budded or grafted on fully compatible rootstock appropriate to the type. Union to be well-callused.
- **Root system and condition:** Balanced with branch system.
- **Species:** True to name.

45-40-90/355 Rootballed trees

- **General requirements:** 45-40-90/305 Nursery stock generally.
- **Supplied by:** Submit proposals.
- **Standards:** Trees and shrubs to BS 3936-1 and In accordance with the National plant specification.
- **Botanical name:** Refer to drawing and plant schedule
- **Form:** Refer to drawing and plant schedule
- **Girth:** Refer to drawing and plant schedule
- **Clear stem height:** Submit proposals.
- **Root condition and protection:** Rootballs to be firm and solid, free of perennial weeds and enclosed in hessian which must decompose within eighteen months of planting and not constrict continuing growth of the plant. Roots to penetrate the whole ball.
- **Number of breaks or stems (minimum):** Three.
- **Origin and provenance:** British grown.
- **Shape:** Natural.

- **Execution:** 45-40-90/614 Plant handling, storage and transport;
;
and 45-40-90/618 Times of year for planting.

Custom made products

40-35-00/509 Tree and shrub pit backfilling material

- **Composition:** Refer to drawing.

Execution

40-35-00/601 Amenity planting generally type B

- **Standard:** To HTA 'Handling and establishing landscape plants'.
- **Planting:** Upright or well balanced with best side to front.

40-35-00/603 Times of year for amenity planting type A

- **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.
- **Wildflower plugs:** Late August to mid November or March/ April.
- **Annual plants:**

40-35-00/605 Climatic conditions for amenity planting type B

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

40-35-00/607 Notice for tree and shrub planting operations

- **Give notice before:** Applying herbicide;
Setting out;
and Delivery of plants.
- **Period of notice:** 2 weeks.

40-35-00/610 Water restrictions type B

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

40-35-00/611 Disposal of arisings

Shared by: 40-35-00/612 Cultivation of topsoil type A; type B and type C; and 40-35-00/613 Preparation of undisturbed topsoil type A and type B.

- **Scope:** Remove from hard surfaces and grassed areas and Maintain clean surfaces as shown on drawings.
- **Timing:** Before topsoil stripping, if any.
- **General:**
 - **Biodegradable arisings:** Compost on site.
 - **Grass cuttings:** Compost on site.

- **Tree roots and stumps:** Remove from site.
- **Shrub and tree prunings:** Compost on site.
- **Litter and nonbiodegradable arisings:** Remove from site.
- **Diseased plant material:** Remove from site.
- **Stones with any dimension exceeding:** Submit proposals.
- **Contamination:** Remove from site material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.

40-35-00/612 Cultivation of topsoil type B

- **General requirements:** 40-35-00/611 Disposal of arisings.
- **Grading and cultivation:**
 - **Standard:** In accordance with BS 4428.
- **Working conditions:**
 - **Soil condition:** Reasonably dry and workable.
 - **Timing:** Within a few days before planting.
 - **Weather and ground conditions:** Suitably dry.
- **Compacted topsoil:** Break up to full depth.
- **Tilth:**
 - **Generally:** Loosen, aerate and break up topsoil to a tilth suitable for blade grading.
 - **Depth:** Refer to drawing
 - **Particle size (maximum):** 10 mm.
- **Surface:**
 - **Contours:** Smooth and flowing, with falls for adequate drainage.
 - **Hollows and ridges:** Not permitted.
- **Remove visible weeds, roots and large stones with any dimensions exceeding:** 75 mm.
- **Give notice:** If required levels cannot be achieved by movement of existing soil.
- **Disposal of arisings:**
 - **Biodegradable arisings:** Compost on site.
 - **Tree roots and stumps:** Remove from site.
 - **Litter and nonbiodegradable arisings:** Remove from site.

40-35-00/613 Preparation of undisturbed topsoil type B

- **General requirements:** 40-35-00/611 Disposal of arisings.
- **Hard ground:** Break up thoroughly.
- **Remove visible roots and large stones with a diameter greater than:** 100 mm.
- **Areas covered with turf or thick sward:** Plough or dig over to full depth of topsoil.
- **Weed control:**
 - **Timing:** Submit proposals.
 - **Treatment:** Submit proposals.

40-35-00/641 Planting semi-mature trees to BS 4043

- **Standard:** Prepare roots and transplant to BS 4043. Backfill.

40-35-00/642 Planting amenity trees in pits type B

- **Dimensions:**
 - **Plan size (minimum):** Refer to drawing

- **Depth (minimum):** Refer to drawing
- **Sloping ground:** Maintain minimum depth throughout.
- **Pit bottoms:**
 - **Generally:** Refer to drawing
 - **Break up depth (nominal):** Refer to drawing
 - **Treatment:** Refer to drawing
- **Pit sides:** Vertical. Scarify.

40-35-00/650 Guying and underground guying for semi-mature trees

- **Standard:** To BS 4043.

40-35-00/651 Installing tree pit irrigation, drainage and ventilation pipes

- **Siting:** Refer to drawing.
- **Depth of excavation:** Refer to drawing.
- **Ventilation pipes:** Refer to drawing.
- **Irrigation pipes:** Refer to drawing
- **Geotextile filter position:** Refer to drawing
- **Completed pits:** Test for free drainage before planting.

40-35-00/692 Applying loose mulch around trees

- **Preparation:** Clear weeds. Water soil thoroughly.
- **Coverage:** In a circular area of 500 mm radius measured from tree stem.
- **Finished level of mulch:** 50 mm below adjacent grassed or paved areas.

45-40-90/614 Plant handling, storage and transport

Shared by: [45-40-90/320 Bare root trees](#); [45-40-90/355 Rootballed trees](#); [45-40-90/395 Container grown shrubs](#); and [45-40-90/415 Container grown climbers](#).

- **Standard:** In accordance with HTA 'Handling and establishing landscape plants'.
- **Extreme cold:** 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.

45-40-90/618 Times of year for planting

- **Container grown nursery stock:** Submit proposals.

System completion

40-35-00/801 Operations immediately after planting

Shared by: [40-35-00/110 Bed-planted annual, perennial and bulb system](#); [40-35-00/135 Wildflower system](#); [40-35-00/160 Pit-planted climber system](#); [40-35-00/165 Pit-planted perennial system](#); [40-35-00/170 Pit-planted semi-mature tree system](#); and [40-35-00/175 Pit-planted small tree or shrub system](#).

- **Watering:** Immediately after planting, water thoroughly. Do not damage or displace plants or soil.
- **Top dressing depth (minimum):** Not required.

40-35-00/802 Establishment of new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Duration:** Until established and confirmed by Landscape Architect.
- **Soil condition:** Ensure soil remains well watered during plant establishment.

40-35-00/803 Weeding new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Weed control:**
 - **General:** Remove invasive weeds by hand.
 - **Area:** Maintain a weed free area.

40-35-00/806 Watering new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Frequency:** As necessary to ensure establishment and continued thriving of planting.
- **Interval (nominal):** As necessary
- **Timing:** Evening.

40-35-00/807 Final mulching of planting beds and trees

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/165 Pit-planted perennial system; and 40-35-00/170 Pit-planted semi-mature tree system.

- **Timing:** At end of the maintenance period.
- **Watering:** Thoroughly moisten soil before remulching. Water where necessary.
- **Depth of mulch (minimum):** Refer to drawings

40-35-00/809 Plants that have failed to thrive

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Defects due to materials or workmanship not in accordance with the Contract:**
 - **Exclusions:** Theft or malicious damage after completion.
 - **Rectification:** Replace with equivalent plants.
- **Replacements:** To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
- **Timing of making good:** In accordance with an agreed defects rectification programme.

40-35-00/810 Instructions for future maintenance

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Recommended procedures for maintenance of planting work for one year:**
 - **Format:** Printed.
 - **Timing:** Submit proposals.

- **Content:** Schedule of ongoing maintenance problems experienced during the rectification period and Details of special procedures to be carried out.
- **Fertiliser:** Generally no fertiliser is required.
- **Cutting regime:** Once established cutting should be undertaken once per year in the Autumn. This should be done by strimming and raking cutting back to a length between 25-50mm. in height.
- **Clear arisings:** The cut and remove should be carried out from late summer, after the plants have set and shed their seed.

Ω End of system

40-35-00/175 Pit-planted small tree or shrub system

System outline

40-35-00/175 Pit-planted small tree or shrub system

- **System performance:** [40-35-00/220 Aesthetic performance of amenity planting systems.](#)
- **Preparatory work to soil:**
 - **Herbicide:** Submit proposals.
 - **Weed suppression:** Mulch refer to plant schedule and drawing
- **Trees:** [45-40-90/320 Bare root trees;](#)
[45-40-90/395 Container grown shrubs;](#)
and [45-40-90/415 Container grown climbers.](#)
- **Tree pit backfill:** Excavated material.
- **Mulch:** not required
- **Supports:** Submit proposals.
- **Protection:** [45-40-65/410 Tree protectors type A.](#)
- **Labels:** [45-35-45/320 Delivery labels for plants.](#)
- **Execution:** [40-35-00/642 Planting amenity trees in pits type A](#)
- **System completion:** [40-35-00/801 Operations immediately after planting;](#)
[40-35-00/802 Establishment of new planting;](#)
[40-35-00/803 Weeding new planting;](#)
[40-35-00/806 Watering new planting;](#)
[40-35-00/809 Plants that have failed to thrive;](#)
and [40-35-00/810 Instructions for future maintenance.](#)

System performance

40-35-00/220 Aesthetic performance of amenity planting systems

Shared by: [40-35-00/165 Pit-planted perennial system;](#) [40-35-00/170 Pit-planted semi-mature tree system;](#) and [40-35-00/175 Pit-planted small tree or shrub system.](#)

- **Design criteria:**
 - **Size:** Instant impact refer to drawings and plant schedule

Products

45-35-45/320 Delivery labels for plants

Shared by: [40-35-00/110 Bed-planted annual, perennial and bulb system;](#) [40-35-00/160 Pit-planted climber system;](#) [40-35-00/165 Pit-planted perennial system;](#) [40-35-00/170 Pit-planted semi-mature tree system;](#) and [40-35-00/175 Pit-planted small tree or shrub system.](#)

- **Standard:** To BS 3936-1 and To National Plant Specification standards.
- **Labels:** Provide for each plant.
- **Information required:** The full botanical name.

45-40-65/410 Tree protectors type A

- **Manufacturer:** Submit proposals.
- **Shape:** Submit proposals.
- **Material:** Submit proposals.
- **Size:** Submit proposals.
- **Colour:** Manufacturer's standard.

45-40-90/305 Nursery stock generally

Shared by: 45-40-90/320 Bare root trees; 45-40-90/355 Rootballed trees; 45-40-90/395 Container grown shrubs; and 45-40-90/415 Container grown climbers.

- **Condition:** Materially undamaged, sturdy, healthy and vigorous.
- **Appearance:** Of good shape and without elongated shoots, appropriate to species and variety.
- **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. Visible suckers to be removed flush with rootstock. Trees to be budded or grafted on fully compatible rootstock appropriate to the type. Union to be well-callused.
- **Root system and condition:** Balanced with branch system.
- **Species:** True to name.

45-40-90/320 Bare root trees

- **General requirements:** 45-40-90/305 Nursery stock generally.
- **Supplied by:** Submit proposals.
- **Standards:** Trees and shrubs to BS 3936-1 and In accordance with the National plant specification.
- **Form:** Refer to plant schedule
- **Stem size:**
 - **Girth:** Refer to plant schedule
- **Root condition and protection:** Bare root (bagged - co-extruded polythene, black inside white outside), containing and enclosing the whole root system.
- **Origin and provenance:** British grown.
- **Shape:** Natural.
- **Execution:** 45-40-90/614 Plant handling, storage and transport;
;
and 45-40-90/630 Installing shrub protection.

45-40-90/395 Container grown shrubs

- **General requirements:** 45-40-90/305 Nursery stock generally.
- **Supplied by:** Submit proposals.
- **Standards:** Trees and shrubs to BS 3936-1 and In accordance with the National plant specification.
- **Botanical name:** Refer to drawings and plant schedule
- **Form:** Refer to plant schedule
- **Height or spread:** Refer to plant schedule
- **Root condition and protection:** Container grown. Plants to be centred in the container, well

rooted, firm and moist on delivery. Surface of the growing medium to be free of all weeds. Container to have adequate holes for drainage when placed on any substrate.

- **Size of container:** Refer to plant schedule
- **Habit:** Refer to plant schedule
- **Shape:** Refer to plant schedule
- **Origin and provenance:** British grown.
- **Execution:** 45-40-90/614 Plant handling, storage and transport;
;
and 45-40-90/630 Installing shrub protection.

45-40-90/415 Container grown climbers

- **General requirements:** 45-40-90/305 Nursery stock generally.
- **Supplied by:** Submit proposals.
- **Standards:** In accordance with the National plant specification.
- **Botanical name:** Refer to plant schedule
- **Height or spread:** Refer to plant schedule
- **Root condition and protection:** Container grown. Plants to be centred in the container, well rooted, firm and moist on delivery. Surface of the growing medium to be free of all weeds. Container to have adequate holes for drainage when placed on any substrate.
- **Size of container:** Refer to plant schedule
- **Habit:**
- **Number of breaks (minimum):**
- **Supports:** Submit proposals.
- **Origin and provenance:** British grown.
- **Execution:** 45-40-90/614 Plant handling, storage and transport;
;
and 45-40-90/630 Installing shrub protection.

Execution

40-35-00/642 Planting amenity trees in pits type A

- **Dimensions:**
 - **Plan size (minimum):** Wide enough to accommodate roots when fully spread.
 - **Depth (minimum):** 75 mm deeper than root system.
- **Sloping ground:** Maintain minimum depth throughout.
- **Pit bottoms:**
 - **Generally:** Break up. Slightly raise centre.
 - **Break up depth (nominal):** 150 mm.
 - **Treatment:** Work soil ameliorant into pit bottoms.
- **Pit sides:** Vertical. Scarify.

45-40-90/614 Plant handling, storage and transport

Shared by: 45-40-90/320 Bare root trees; 45-40-90/355 Rootballed trees; 45-40-90/395 Container grown shrubs; and 45-40-90/415 Container grown climbers.

- **Standard:** In accordance with HTA 'Handling and establishing landscape plants'.
- **Extreme cold:** 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.

45-40-90/630 Installing shrub protection

Shared by: 45-40-90/320 Bare root trees; 45-40-90/395 Container grown shrubs; and 45-40-90/415 Container grown climbers.

- **Support:**
- **General:** Do not impede natural movement of plants or restrict growth.

System completion

40-35-00/801 Operations immediately after planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Watering:** Immediately after planting, water thoroughly. Do not damage or displace plants or soil.
- **Top dressing depth (minimum):** Not required.

40-35-00/802 Establishment of new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Duration:** Untill established and confirmed by Landscape Architect.
- **Soil condition:** Ensure soil remains well watered during plant establishment.

40-35-00/803 Weeding new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Weed control:**
 - **General:** Remove invasive weeds by hand.
 - **Area:** Maintain a weed free area.

40-35-00/806 Watering new planting

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Frequency:** As necessary to ensure establishment and continued thriving of planting.
- **Interval (nominal):** As necessary
- **Timing:** Evening.

40-35-00/809 Plants that have failed to thrive

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Defects due to materials or workmanship not in accordance with the Contract:**
 - **Exclusions:** Theft or malicious damage after completion.
 - **Rectification:** Replace with equivalent plants.

- **Replacements:** To match size of adjacent or nearby plants of same species or match original specification, whichever is the greater.
- **Timing of making good:** In accordance with an agreed defects rectification programme.

40-35-00/810 Instructions for future maintenance

Shared by: 40-35-00/110 Bed-planted annual, perennial and bulb system; 40-35-00/135 Wildflower system; 40-35-00/160 Pit-planted climber system; 40-35-00/165 Pit-planted perennial system; 40-35-00/170 Pit-planted semi-mature tree system; and 40-35-00/175 Pit-planted small tree or shrub system.

- **Recommended procedures for maintenance of planting work for one year:**
 - **Format:** Printed.
 - **Timing:** Submit proposals.
 - **Content:** Schedule of ongoing maintenance problems experienced during the rectification period and Details of special procedures to be carried out.
 - **Fertiliser:** Generally no fertiliser is required.
 - **Cutting regime:** Once established cutting should be undertaken once per year in the Autumn. This should be done by strimming and raking cutting back to a length between 25-50mm. in height.
 - **Clear arisings:** The cut and remove should be carried out from late summer, after the plants have set and shed their seed.

40-35-00/190 Amenity planting maintenance system

System outline

40-35-00/190 Amenity planting maintenance system

- **Spot weedkilling herbicide:** Submit proposals.
- **Pest control:** Submit proposals.
- **Fertilizer:** Submit proposals.
- **Weed suppression:** Mulch refer to drawing and plant schedule
- **Mulch:** Refer to drawing and plant schedule
- **Material for making up levels and refilling at tree grilles:** Submit proposals.
- **System facility management:** 40-35-00/904 Mechanical equipment use in amenity plant maintenance operations;
40-35-00/905 Shrub and herbaceous areas;
40-35-00/907 Beds of perennials or perennials and annuals;
40-35-00/909 Reinstatement after maintenance;
40-35-00/910 Disposal of arisings;
40-35-00/912 Water restrictions;
40-35-00/913 Watering;
40-35-00/920 Applying top dressing;
40-35-00/921 Weed control generally;
40-35-00/925 Weeding loose mulch;
40-35-00/930 Applying fungicide to trees and shrubs;
40-35-00/931 Applying insecticide to trees and shrubs;
40-35-00/932 Litter removal;
40-35-00/933 Snow removal from trees and shrubs;
40-35-00/941 Digging over;
40-35-00/942 Soil level adjustment;
40-35-00/943 Maintenance of loose mulch;
40-35-00/952 Prevention of wound bleeding;
40-35-00/953 Treatment of tree wounds;
40-35-00/955 Bark damage;
40-35-00/957 Dead and diseased plants;
40-35-00/961 Tree work generally;
40-35-00/963 Pruning trees and shrubs to BS 7370-4;
40-35-00/970 Pruning ornamental shrubs;
40-35-00/971 Pruning flowering species of shrubs and roses;
40-35-00/973 Cleaning out and deadwooding;
40-35-00/979 Trimming slowly establishing hedges;
;
40-35-00/991 Maintaining plant supports generally;
40-35-00/995 Maintaining tree guards;
and 40-35-00/998 Securing climbing plants supports.

System facility management

40-35-00/901 Management objectives for amenity planting

Shared by: 40-35-00/905 Shrub and herbaceous areas; 40-35-00/907 Beds of perennials or perennials and annuals; 40-35-00/909 Reinstatement after maintenance; 40-35-00/910 Disposal of arisings; 40-35-00/912 Water restrictions; 40-35-00/913 Watering; 40-35-00/920 Applying top dressing; 40-35-00/921

Weed control generally; 40-35-00/925 Weeding loose mulch; 40-35-00/930 Applying fungicide to trees and shrubs; 40-35-00/931 Applying insecticide to trees and shrubs; 40-35-00/932 Litter removal; 40-35-00/933 Snow removal from trees and shrubs; 40-35-00/941 Digging over; 40-35-00/942 Soil level adjustment; 40-35-00/943 Maintenance of loose mulch; 40-35-00/952 Prevention of wound bleeding; 40-35-00/953 Treatment of tree wounds; 40-35-00/955 Bark damage; 40-35-00/957 Dead and diseased plants; 40-35-00/961 Tree work generally; 40-35-00/963 Pruning trees and shrubs to BS 7370-4; 40-35-00/970 Pruning ornamental shrubs; 40-35-00/971 Pruning flowering species of shrubs and roses; 40-35-00/973 Cleaning out and deadwooding; 40-35-00/979 Trimming slowly establishing hedges; 40-35-00/991 Maintaining plant supports generally; 40-35-00/995 Maintaining tree guards; and 40-35-00/998 Securing climbing plants supports.

- **Duration:** 1 year.
- **Aims:** Improved landscape visual amenity;
Opportunities for recreation and sport;
and To encourage natural woodland regeneration.
- **Management outcomes:**

40-35-00/902 Notice periods for maintenance visits

Shared by: 40-35-00/905 Shrub and herbaceous areas; 40-35-00/907 Beds of perennials or perennials and annuals; 40-35-00/909 Reinstatement after maintenance; 40-35-00/910 Disposal of arisings; 40-35-00/912 Water restrictions; 40-35-00/913 Watering; 40-35-00/920 Applying top dressing; 40-35-00/921 Weed control generally; 40-35-00/925 Weeding loose mulch; 40-35-00/930 Applying fungicide to trees and shrubs; 40-35-00/931 Applying insecticide to trees and shrubs; 40-35-00/932 Litter removal; 40-35-00/933 Snow removal from trees and shrubs; 40-35-00/941 Digging over; 40-35-00/942 Soil level adjustment; 40-35-00/943 Maintenance of loose mulch; 40-35-00/952 Prevention of wound bleeding; 40-35-00/953 Treatment of tree wounds; 40-35-00/955 Bark damage; 40-35-00/957 Dead and diseased plants; 40-35-00/961 Tree work generally; 40-35-00/963 Pruning trees and shrubs to BS 7370-4; 40-35-00/970 Pruning ornamental shrubs; 40-35-00/971 Pruning flowering species of shrubs and roses; 40-35-00/973 Cleaning out and deadwooding; 40-35-00/979 Trimming slowly establishing hedges; 40-35-00/991 Maintaining plant supports generally; 40-35-00/995 Maintaining tree guards; and 40-35-00/998 Securing climbing plants supports.

- **Give notice before:** Applying herbicide and Visiting site during maintenance period.
- **Period of notice:** 7 days.

40-35-00/904 Mechanical equipment use in amenity plant maintenance operations

- **General:** Minimize use. Do not damage trees and shrubs.
- **Restrictions:**
 - **Proximity to plants:** Do use not mowers, nylon filament rotary cutters and similar powered tools within 100 mm of plant stems.
 - **Prohibited equipment:**
 - **Times during which mechanical equipment may be used:** To be agreed

40-35-00/905 Shrub and herbaceous areas

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Planted areas:** Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.
- **Firming up:** Gently firm loosened soil around plants. Straighten leaning trees and shrubs.
- **Dead and damaged plants:** Remove.
- **Mulch and matting materials:** Carefully move to one side and dig over the soil, leaving it fit for replanting. Do not disturb roots of adjacent plants.
- **Replacement plants:**

- **Size of pits and plants:** To original specification or to match the size of adjacent or nearby plants of the same species, whichever is the greater.
- **Details:** Submit details and cost of plants before ordering.

40-35-00/907 Beds of perennials or perennials and annuals

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Operations at end of growing season:**
 - **Older flowering stems of herbaceous perennials:** Trim.
 - **Redundant plant supports, litter, debris and arisings:** Remove.
 - **Cultivation:** Fork over the soil. Do not cause undue disturbance to plants.
 - **Firming up:** Gently firm loosened soil around plants.
 - **Top dressing application rate (minimum):** 10g/m²

40-35-00/909 Reinstatement after maintenance

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Damage or disturbance to soil structure, planting, grass, fencing, hard landscaping, structures or buildings:** Submit proposals.
- **Cleanliness:** Leave the works in a clean tidy condition at completion and after maintenance operations.

40-35-00/910 Disposal of arisings

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Scope:** Remove from hard surfaces and grassed areas.
- **General:**
 - **Biodegradable arisings:** Compost on site.
 - **Grass cuttings:** Compost on site, wildflower cuttings leave for two days before removing to allow seeds to fall.
 - **Tree roots and stumps:** Submit proposals.
 - **Shrub and tree prunings:** Remove to recycling facility.
 - **Litter and nonbiodegradable arisings:** Remove from site.
 - **Diseased plant material:** Remove from site.
 - **Surplus topsoil following routine maintenance:** Spread evenly.

40-35-00/912 Water restrictions

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **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.

40-35-00/913 Watering

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Supply:** Potable mains water.
- **Quantity:** Wet full depth of topsoil.
- **Application:** Do not damage or loosen plants.

- **Compacted soil:** Loosen or scoop out. Direct water to rootzone.
- **Frequency:** As necessary for the continued thriving of all planting.

40-35-00/920 Applying top dressing

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Locations for application:** Lawn and shrub areas, not required for wildflower areas
- **Application:**
 - **Spreading:** Evenly, carefully incorporating into surface of soil.
 - **Timing:** Start of growing season.
 - **Application rate:** 10 g/m².

40-35-00/921 Weed control generally

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Scope:** Ornamental beds;
Shrub beds;
and Trees.
Lawns
- **General:** Keep clear of weeds and prevent from seeding. Prevent perennial weeds from becoming established.
- **Method:** By hand weeding;
By hoeing;
and By maintaining full thickness of mulch.
- **Individual trees and shrubs:** Maintain weed free area around each tree and shrub to the larger of 1 m diameter or the surface of original planting pit (if any).

40-35-00/925 Weeding loose mulch

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Weeding:** Remove weeds growing on or in mulch.
- **Method:** Hand weeding.

40-35-00/930 Applying fungicide to trees and shrubs

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Fungicide application:** Submit proposals.

40-35-00/931 Applying insecticide to trees and shrubs

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Insecticide application:** Submit proposals.

40-35-00/932 Litter removal

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Extraneous rubbish not arising from the contract work:** Collect and remove from site.

40-35-00/933 Snow removal from trees and shrubs

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Standard:** To BS 7370-4.
- **Timing:** Within 24 hours of snowfall.

40-35-00/941 Digging over

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Planting beds:** Dig over. Do not damage existing plants, bulbs and roots.
- **Depth of dig (minimum):** 75 mm.

40-35-00/942 Soil level adjustment

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Level of soil and mulch at edges of beds:** Reduce to 50 mm below adjacent grass or hard surface.

40-35-00/943 Maintenance of loose mulch

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Thickness (minimum):** 50 mm.
- **Top up:** As necessary
- **Mulch spill on adjacent areas:** Remove weeds and rubbish and return to planted area.

40-35-00/952 Prevention of wound bleeding

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Standard:** To BS 3998.

40-35-00/953 Treatment of tree wounds

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **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 and sealant:** Do not apply.

40-35-00/955 Bark damage

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Wounds:**
 - **Sap bleeding:** Do not attempt to stop.
 - **Bark:** Remove ragged edges using a sharp knife.
 - **Wood:** Remove splintered wood from deep wounds.
 - **Size:** Keep wounds as small as possible.
- **Liquid or flux oozing from apparently healthy bark:** Give notice.

40-35-00/957 Dead and diseased plants

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Dead plant material:**
 - **Removal:** At the end of the growing season, check shrubs and remove dead foliage, dead wood, and broken or damaged plants, branches and stems.
 - **Timing:** Within one week of notification.
 - **Replacement:** In the next scheduled round of replacement planting.

40-35-00/961 Tree work generally

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Identification:** Before starting work agree which trees, shrubs and hedges to be removed or pruned.
- **Protection:** Avoid damage to neighbouring trees, plants and property.
- **Standards:** To BS 3998 and Health and Safety Executive (HSE) 'Forestry and arboriculture safety leaflets'.
- **Appearance:** Leave trees with a well balanced natural appearance. Favour a single central leading shoot.
- **Dead, dying, diseased wood and suckers:** Remove. Prune to promote healthy growth.
- **Timing:** As appropriate to the species.
- **Chain saw work:** Operatives must hold a Certificate of Competence.
- **Tree work:** To be carried out by a member of the Arboricultural Association.
- **Tree worker:** Submit proposals.

40-35-00/963 Pruning trees and shrubs to BS 7370-4

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Standard:** To BS 7370-4.
- **Growth retardants:**

40-35-00/970 Pruning ornamental shrubs

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **General:** Prune to encourage healthy and bushy growth and desirable ornamental features, e.g. flowers, fruit, autumn colour, stem colour.
- **Suckers:** Remove by cutting back level with the source stem or root.

40-35-00/971 Pruning flowering species of shrubs and roses

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Time of year:**
 - **Winter flowering shrubs:** Spring.
 - **Shrubs flowering between March and July:** Immediately after the flowering period.
 - **Shrubs flowering between July and October:** Back to old wood in winter.
 - **Rose bushes:** Early spring to encourage basal growths and a balanced, compact habit.

40-35-00/973 Cleaning out and deadwooding

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Remove:** Dead, dying, or diseased wood, broken branches and stubs and Fungal growths and fruiting bodies. Rubbish, windblown or accumulated in branch forks.

40-35-00/979 Trimming slowly establishing hedges

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Operations:**
 - **Timing:** Cut back hard in June and September to encourage bushy growth down to ground level.
 - **Form:** Allow to reach planned dimensions only by gradual degrees, depending on growth rate and habit.

40-35-00/991 Maintaining plant supports generally

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Inspection:**
 - **Scope:** Check condition of stakes, ties, guys and guards.
 - **Frequency of checks:** At each scheduled maintenance visit.
- **Operations:**
 - **Broken or missing items:** Replace.
 - **Rubbing:** Prevent.
 - **Ties:** Adjust to accommodate growth.
 - **Damage to bark:** Cut back neatly with sharp knife. Prevent further damage.

40-35-00/995 Maintaining tree guards

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Loose or defective guards:** Adjust, re-fix or replace to original specification and to prevent chafing.

40-35-00/998 Securing climbing plants supports

- **General requirements:** 40-35-00/901 Management objectives for amenity planting and 40-35-00/902 Notice periods for maintenance visits.
- **Insecure growth:** Attach to supporting wires or structures.
- **Connection:** Submit proposals.
- **Supporting structures:** Check and repair as necessary.

40-40-45/125 Extensive green roof system - type Sedum Roof system

System outline

40-40-45/125 Extensive green roof system type Sedum Roof system

- **System performance:** 40-40-45/210 Design of living roofs and 40-40-45/220 Structural performance.
- **System manufacturer:** Submit proposals.
- **Protection:**
 - **Protection layer:** Submit proposals.
 - **Root barrier:** Submit proposals.
 - **Separation layer:** Submit proposals.
- **Moisture control:**
 - **Drainage layer:** Submit proposals.
 - **Filter membrane:** Submit proposals.
 - **Moisture retention mat:** Submit proposals.
 - **Drainage ancillaries:** Submit proposals.
- **Planting systems:**
 - **Planting medium:** 45-40-85/330 Manufactured growing medium weed free extensive green roof substrate designed to support both stonecrops Sedum spp.
 - **Vegetation:**
 -
 - **Anti-erosion mat:** Submit proposals.
 - **Vegetation barrier:** Submit proposals.
- **Edge restraints:** 45-40-60/470 Stainless steel edge retaining profiles.
- **Execution:** 40-40-45/671 Installing protection layers;
40-40-45/680 Installing growing substrate;
and 40-40-45/710 Installing edge retaining profile.
- **System completion:** 40-40-45/801 Operations immediately after planting on living roofs;
40-40-45/802 Establishing new planting on living roofs;
40-40-45/803 Weeding new planting on living roofs;
40-40-45/804 Fertilizing new planting on living roofs;
40-40-45/806 Watering new planting on living roofs;
40-40-45/809 Plants that have failed to thrive on living roofs;
and 40-40-45/810 Instructions for future maintenance of living roofs.

System performance

40-40-45/210 Design of living roofs

- **General requirements:** 40-40-45/215 Information submittals for design of living roofs.
- **Design:** Complete the design of the green roof systems in accordance with 'GRO Green roof code'.
- **Design criteria:**
 - **Functional:** General amenity.

- **Aesthetic:** To ensure even coverage of roof
- **Biological and physiological:**
 - Growing conditions:** Drought tolerance.
 - Ecological:**
 - Vigour:** Ease of establishment.
- **Submittals:** Technical information; Manufacturers' literature; and Calculations.
Request for inspection prior to installation of pre-seeded mat

40-40-45/215 Information submittals for design of living roofs

- **Climatic loads/actions:**
 - **Site Ordnance Survey grid reference:**
 - **Site altitude to Ordnance Datum:**
- **Information to be supplied by Contractor:** General arrangement drawings for the planting layout and Method statements for installation.

40-40-45/220 Structural performance

- **Dead loads (maximum):**
 - **Standard:** To BS EN 1991-1-1.
 - **Green roof layers:** Submit proposals.
- **Imposed loads (maximum):**
 - **Activity:** Submit proposals.
 - **Vegetation:**
- **Resistance to wind uplift:**
 - **Attachment to resist to wind loads:** Determine methods of attachment. Provide for the relative movement of materials and effects of vapour pressure.
 - **Design wind pressure:**
 - Standard:** To BS EN 1991-1-4
 - Basic wind velocity (Vb):**
 - Altitude factor (Calt):**
 - Direction factor (Cdir):**
 - Seasonal factor (Cseason):** 1.
 - Probability factor (Cprob):** 1.
 - Terrain roughness factor (Cr):**
 - Orography factor (Co):**
 - External pressure coefficients (Cpe):**
 - Internal pressure coefficients (Cpi):**

Products

45-40-60/470 Stainless steel edge retaining profiles

- **Manufacturer:** Submit proposals.
- **Height (nominal):** Refer to drawing
- **Width (nominal):** Refer to drawing
- **Finish:** Refer to drawing

45-40-85/330 Manufactured growing medium

- **Supplier:** Submit proposals.
- **Source:** Submit proposals.
- **Texture:** Submit proposals.
- **Chemical analysis:**
 - **Standard:** To BS 1377-3.
 - **pH (range):** Submit proposals.
- **Organic matter:**
 - **Standard:** To PD CR 13456.
 - **Percentage (minimum):**
- **Nutrient content (minimum index values for nitrogen, phosphorus, potassium and magnesium):** Match BS 3882 multipurpose topsoil.
- **Crumb structure:** Made up of discernible crumbs.
- **Size in any dimension (maximum):**

Execution

40-40-45/605 Installation of living roofs generally

Shared by: 40-40-45/661 Jointing of mats and sheets generally; 40-40-45/680 Installing growing substrate; and 40-40-45/710 Installing edge retaining profile.

- **Standard:** In accordance with 'GRO Green roof code'.
- **Preparation:**
 - **Previous coatings and contaminants:**
 - **Inspection:**
- **Contamination:** Do not use materials detrimental to healthy plant growth.
- **Loading:**
 - **Standard:** To BS EN 1991-1-6.
 - **Generally:** Restrict site activities to ensure that design loads are not exceeded. Refer to structural Engineer's design loads.
 - **Allowance for additional loads during construction:**
- **Outlets:** Do not block. Install outlet grilles prior to installation of living roof.

40-40-45/661 Jointing of mats and sheets generally

- **General requirements:** 40-40-45/605 Installation of living roofs generally.
- **Joints:**
 - **Generally:** Minimize. Prevent gaps. Do not stretch blankets.
 - **Fitting:** The drainage layer must be dressed up to all upstands or perimeters to substrate level.
 - **Overlaps (minimum):** Submit proposals.

40-40-45/671 Installing protection layers

- **General requirements:** 40-40-45/661 Jointing of mats and sheets generally.
- **Extent:** Continuous over entire roof area.
- **Upstands:** Submit proposals.

40-40-45/680 Installing growing substrate

- **General requirements:** 40-40-45/605 Installation of living roofs generally . Planting of green roofs is best undertaken during the Autumn months, if planting is undertaken during the drier months care should be taken to avoid the roofs from drying out.
- **Handling conditions:** Handle in the driest condition possible. Do not handle or install when wet or frozen.
- **Depth (minimum):** 100 mm, additional 15% to allow for compaction following installation.
- **Sequence:**
 - **Layer depth (maximum):** 150 mm.
 - **Compaction:** Gently firm each layer before spreading the next.

40-40-45/710 Installing edge retaining profile

- **General requirements:** 40-40-45/605 Installation of living roofs generally.
- **Cutting:**
 - **Generally:** Neat, accurate and without spalling.
 - **Junctions:** Vertical. Secure with proprietary connectors.
- **Position:** True to line and level. Smooth continuous lines.
- **Fixing:** Submit proposals.

System completion

40-40-45/801 Operations immediately after planting on living roofs

- **Watering:** Watering will be required during initial plant establishment, once established watering will only be required during drier periods.
- **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 depth (minimum):**

40-40-45/802 Establishing new planting on living roofs

- **Duration:** 2 months.
- **Soil condition:** Substrate to green roof specialist's detail and recommendations.
- **Weather conditions:** Installation will be undertaken suitable weather conditions no handling of substrate and plants will be avoided during wet or frozen conditions.

40-40-45/803 Weeding new planting on living roofs

- **Weed control:**
 - **General:** Keep planting beds clear of weeds.
 - **Area:** Maintain a weed free area around each tree and shrub.
 - **Diameter (minimum):** The larger of 1 m or the surface of the original planting pit.

40-40-45/804 Fertilizing new planting on living roofs

- **Time of year:** March or April.
- **Application:**
 - **Method:** Spread evenly. Carefully lift and replace mulch materials.
 - **Application rate (minimum):**

40-40-45/806 Watering new planting on living roofs

- **Quantity:** Wet full depth of substrate until established
- **Application:** Even and without damaging or displacing plants or soil.
- **Trees:** Spray crown when in leaf during warm weather.
- **Frequency:** As necessary to ensure establishment and continued thriving of planting.
- **Interval (nominal):** As necessary
- **Timing:** Evening.

40-40-45/809 Plants that have failed to thrive on living roofs

- **Defects due to materials or workmanship not in accordance with the Contract:**
 - **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:** In accordance with an agreed defects rectification programme.

40-40-45/810 Instructions for future maintenance of living roofs

- **Recommended procedures for maintenance of planting work for one year:**
 - **Format:** Printed.
 - **Timing:** Before end of maintenance period.
 - **Content:** Procedures for maintenance of the green roof and Schedule of ongoing maintenance problems experienced during the rectification period.

40-40-45/125 Extensive green roof system - type Extensive green roof system

System outline

40-40-45/125 Extensive green roof system type Extensive green roof system

- **System performance:** 40-40-45/210 Design of living roofs and 40-40-45/220 Structural performance.
- **System manufacturer:** Submit proposals.
- **Protection:**
 - **Protection layer:** Submit proposals.
 - **Root barrier:** Submit proposals.
 - **Separation layer:** Submit proposals.
- **Moisture control:**
 - **Drainage layer:** Submit proposals.
 - **Filter membrane:** Submit proposals.
 - **Moisture retention mat:** Submit proposals.
 - **Drainage ancillaries:** Submit proposals.
- **Planting systems:**
 - **Planting medium:** 45-40-85/330 Manufactured growing medium weed free extensive green roof substrate designed to support both stonecrops Sedum spp.
 - **Vegetation:**
 - .
 - **Anti-erosion mat:** Submit proposals.
 - **Vegetation barrier:** Submit proposals.
- **Edge restraints:** 45-40-60/470 Stainless steel edge retaining profiles.
- **Execution:** 40-40-45/671 Installing protection layers;
40-40-45/680 Installing growing substrate;
and 40-40-45/710 Installing edge retaining profile.
- **System completion:** 40-40-45/801 Operations immediately after planting on living roofs;
40-40-45/802 Establishing new planting on living roofs;
40-40-45/803 Weeding new planting on living roofs;
40-40-45/804 Fertilizing new planting on living roofs;
40-40-45/806 Watering new planting on living roofs;
40-40-45/809 Plants that have failed to thrive on living roofs;
and 40-40-45/810 Instructions for future maintenance of living roofs.

System performance

40-40-45/210 Design of living roofs

- **General requirements:** 40-40-45/215 Information submittals for design of living roofs.
- **Design:** Complete the design of the green roof systems in accordance with 'GRO Green roof code'.
- **Design criteria:**
 - **Functional:** General amenity.

- **Aesthetic:** To ensure even coverage of roof
- **Biological and physiological:**
 - Growing conditions:** Drought tolerance.
 - Ecological:**
 - Vigour:** Ease of establishment.
- **Submittals:** Technical information; Manufacturers' literature; and Calculations.
Request for inspection prior to installation of pre-seeded mat

40-40-45/215 Information submittals for design of living roofs

- **Climatic loads/actions:**
 - **Site Ordnance Survey grid reference:**
 - **Site altitude to Ordnance Datum:**
- **Information to be supplied by Contractor:** General arrangement drawings for the planting layout and Method statements for installation.

40-40-45/220 Structural performance

- **Dead loads (maximum):**
 - **Standard:** To BS EN 1991-1-1.
 - **Green roof layers:** Submit proposals.
- **Imposed loads (maximum):**
 - **Activity:** Submit proposals.
 - **Vegetation:**
- **Resistance to wind uplift:**
 - **Attachment to resist to wind loads:** Determine methods of attachment. Provide for the relative movement of materials and effects of vapour pressure.
 - **Design wind pressure:**
 - Standard:** To BS EN 1991-1-4
 - Basic wind velocity (Vb):**
 - Altitude factor (Calt):**
 - Direction factor (Cdir):**
 - Seasonal factor (Cseason):** 1.
 - Probability factor (Cprob):** 1.
 - Terrain roughness factor (Cr):**
 - Orography factor (Co):**
 - External pressure coefficients (Cpe):**
 - Internal pressure coefficients (Cpi):**

Products

45-40-60/470 Stainless steel edge retaining profiles

- **Manufacturer:** Submit proposals.
- **Height (nominal):** Refer to drawing
- **Width (nominal):** Refer to drawing
- **Finish:** Refer to drawing

45-40-85/330 Manufactured growing medium

- **Supplier:** Submit proposals.
- **Source:** Submit proposals.
- **Texture:** Submit proposals.
- **Chemical analysis:**
 - **Standard:** To BS 1377-3.
 - **pH (range):** Submit proposals.
- **Organic matter:**
 - **Standard:** To PD CR 13456.
 - **Percentage (minimum):**
- **Nutrient content (minimum index values for nitrogen, phosphorus, potassium and magnesium):** Match BS 3882 multipurpose topsoil.
- **Crumb structure:** Made up of discernible crumbs.
- **Size in any dimension (maximum):**

Execution

40-40-45/605 Installation of living roofs generally

Shared by: 40-40-45/661 Jointing of mats and sheets generally; 40-40-45/680 Installing growing substrate; and 40-40-45/710 Installing edge retaining profile.

- **Standard:** In accordance with 'GRO Green roof code'.
- **Preparation:**
 - **Previous coatings and contaminants:**
 - **Inspection:**
- **Contamination:** Do not use materials detrimental to healthy plant growth.
- **Loading:**
 - **Standard:** To BS EN 1991-1-6.
 - **Generally:** Restrict site activities to ensure that design loads are not exceeded. Refer to structural Engineer's design loads.
 - **Allowance for additional loads during construction:**
- **Outlets:** Do not block. Install outlet grilles prior to installation of living roof.

40-40-45/661 Jointing of mats and sheets generally

- **General requirements:** 40-40-45/605 Installation of living roofs generally.
- **Joints:**
 - **Generally:** Minimize. Prevent gaps. Do not stretch blankets.
 - **Fitting:** The drainage layer must be dressed up to all upstands or perimeters to substrate level.
 - **Overlaps (minimum):** Submit proposals.

40-40-45/671 Installing protection layers

- **General requirements:** 40-40-45/661 Jointing of mats and sheets generally.
- **Extent:** Continuous over entire roof area.
- **Upstands:** Submit proposals.

40-40-45/680 Installing growing substrate

- **General requirements:** 40-40-45/605 Installation of living roofs generally . Planting of green roofs is best undertaken during the Autumn months, if planting is undertaken during the drier months care should be taken to avoid the roofs from drying out.
- **Handling conditions:** Handle in the driest condition possible. Do not handle or install when wet or frozen.
- **Depth (minimum):** 100 mm, additional 15% to allow for compaction following installation.
- **Sequence:**
 - **Layer depth (maximum):** 150 mm.
 - **Compaction:** Gently firm each layer before spreading the next.

40-40-45/710 Installing edge retaining profile

- **General requirements:** 40-40-45/605 Installation of living roofs generally.
- **Cutting:**
 - **Generally:** Neat, accurate and without spalling.
 - **Junctions:** Vertical. Secure with proprietary connectors.
- **Position:** True to line and level. Smooth continuous lines.
- **Fixing:** Submit proposals.

System completion

40-40-45/801 Operations immediately after planting on living roofs

- **Watering:** Watering will be required during initial plant establishment, once established watering will only be required during drier periods.
- **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 depth (minimum):**

40-40-45/802 Establishing new planting on living roofs

- **Duration:** 2 months.
- **Soil condition:** Substrate to green roof specialist's detail and recommendations.
- **Weather conditions:** Installation will be undertaken suitable weather conditions no handling of substrate and plants will be avoided during wet or frozen conditions.

40-40-45/803 Weeding new planting on living roofs

- **Weed control:**
 - **General:** Keep planting beds clear of weeds.
 - **Area:** Maintain a weed free area around each tree and shrub.
 - **Diameter (minimum):** The larger of 1 m or the surface of the original planting pit.

40-40-45/804 Fertilizing new planting on living roofs

- **Time of year:** March or April.
- **Application:**
 - **Method:** Spread evenly. Carefully lift and replace mulch materials.
 - **Application rate (minimum):**

40-40-45/806 Watering new planting on living roofs

- **Quantity:** Wet full depth of substrate until established
- **Application:** Even and without damaging or displacing plants or soil.
- **Trees:** Spray crown when in leaf during warm weather.
- **Frequency:** As necessary to ensure establishment and continued thriving of planting.
- **Interval (nominal):** As necessary
- **Timing:** Evening.

40-40-45/809 Plants that have failed to thrive on living roofs

- **Defects due to materials or workmanship not in accordance with the Contract:**
 - **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:** In accordance with an agreed defects rectification programme.

40-40-45/810 Instructions for future maintenance of living roofs

- **Recommended procedures for maintenance of planting work for one year:**
 - **Format:** Printed.
 - **Timing:** Before end of maintenance period.
 - **Content:** Procedures for maintenance of the green roof and Schedule of ongoing maintenance problems experienced during the rectification period.

40-40-95/155 Modular unit vertical planting system - type A

System outline

40-40-95/155 Modular unit vertical planting system type A

- **System performance:**
- **Substrate:**
- **Thermal insulation:**
- **Breather membrane:**
- **Wall mounting:**
- **Waterproof membrane:**
- **Modular panels:**
- **Irrigation:**
- **Planting:**
- **Edge profiles:**
- **Gutters:**
- **Accessories:**
- **Samples:**
- **Execution:**
- **System completion:**
- **System facility management:**

Ω End of system

40-40-95/155 Modular unit vertical planting system - type B

System outline

40-40-95/155 Modular unit vertical planting system type B

- **System performance:**
- **Substrate:**
- **Thermal insulation:**
- **Breather membrane:**
- **Wall mounting:**
- **Waterproof membrane:**
- **Modular panels:**
- **Irrigation:**
- **Planting:**
- **Edge profiles:**
- **Gutters:**
- **Accessories:**
- **Samples:**
- **Execution:**
- **System completion:**
- **System facility management:**

Ω End of system

40-40-95/155 Modular unit vertical planting system - type C

System outline

40-40-95/155 Modular unit vertical planting system type C

- **System performance:**
- **Substrate:**
- **Thermal insulation:**
- **Breather membrane:**
- **Wall mounting:**
- **Waterproof membrane:**
- **Modular panels:**
- **Irrigation:**
- **Planting:**
- **Edge profiles:**
- **Gutters:**
- **Accessories:**
- **Samples:**
- **Execution:**
- **System completion:**
- **System facility management:**

Ω End of system