

007. TP2 tavistock place.

LSHTM / 8 Build.

Landscape Specification. 30.03.22 **PLANNING**

Revision 001

007-T-200 rev 000

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## Q28 Topsoil and growing media

To be read with Preliminaries/ General conditions.

### 200 GRADING SUBSOIL

- General: Grade to smooth flowing contours to achieve specified finished levels of topsoil.
- Areas of thicker topsoil: Excavate locally.

### 250 SUBSOIL SURFACE PREPARATION

- General: Excavate and/ or place fill to required profiles and levels, as section D20.
- Loosening:
  - Light and 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.
- Stones: Immediately before spreading topsoil, remove stones larger than 50mm
- Remove Detritus and debris.

### 260 INSPECTING FORMATIONS

- Give notice: Before spreading topsoil for all soft / grass areas.
- Notice period: 1 Week.

### 300 TOPSOIL ANALYSIS

- Soil to be analysed: grass area and planting medium
- Soil analyst: Contractors proposal.
- Samples: Collect in accordance with BS 3882.
- Submit:
  - Declaration of analysis: A4 Report.
  - Report detailing soil analyst's recommendations.

### 310 PREPARATION OF UNDISTURBED TOPSOIL

- Standard: In accordance with BS 4428.
  - Grading and cultivation: to 250mm.
- Hard ground: Break up thoroughly.
- Clearing: Remove visible roots and large stones with a diameter greater than 50mm
- Areas covered with turf or thick sward: Plough or dig over to full depth of topsoil.
- Fallow period (minimum): 2 weeks
- Weed control: At appropriate times suitable non-residual pesticide.

### 330 SURPLUS TOPSOIL TO BE RETAINED

- Generally: Spread and level on site:
  - Locations: TBC
  - Protected areas: Do not raise soil level within root spread of trees that are to be retained.

### 335 SURPLUS TOPSOIL TO BE REMOVED

- Generally: Remove from site on approval of client.

### 340 IMPORTED TOPSOIL TO BS 3882 9 (USED FOR PLANTERS)

- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to complete the work.
- Standard: To BS 3882.
- Classification:
- Source: TBC
- Submit: Declaration of analysis in accordance with BS 3882, Annex E.

### 341 IMPORTED TOPSOIL FROM A SPECIFIED SOURCE

- Quantity: Provide as necessary to make up any deficiency of topsoil existing on site and to

- complete the work.
  - Source: TBC
- 355 COMPOST
- Standard: In accordance with PAS 100.
  - Supplier: TBC
    - Product reference: Compost
  - Type: Sanitized and stabilized compost.
  - Horticultural parameters:
    - pH (1:5 water extract): 7.0-8.7.
    - Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
    - Moisture content (m/m of fresh weight): 35-55%.
    - Organic matter (minimum): 25%.
    - Grading (air dried samples): 99% passing 25 mm screen, and 90% a 10 mm screen mesh aperture.
    - Carbon: Nitrogen ratio (maximum): 20:1.
  - Texture: Friable.
  - Objectionable odour: None.
  - Composting Association certification: yes.
  - Submit: Declaration of analysis.
  - Additional analyses: N/A
  - Samples: made available at site.
  - Application rate: 50mm depth.
  - Timing: Apply prior to cultivation.
- 360 20-40MM STONE PEBBLE AGREGATE LAYER (BASE OF PLANTERS)
- Quantity: Clean and free of detritus
  - Standard:
  - Classification:
  - Source: TBC
  - Submit: Declaration of analysis in accordance with BS 3882, Annex E.
- 395 PEAT
- Peat or products containing peat: Do not use.
- 650 NOTICE OF IMPORTING TOPSOIL
- Give notice: Before stripping topsoil for transfer to site.
    - Notice period: 2 weeks.
- 660 SAMPLE LOAD OF IMPORTED TOPSOIL
- General: Deliver to site a sample load of not less than 5 m<sup>3</sup>.
  - Give notice: Allow inspection before making further deliveries to site. Retain for comparison with subsequent loads.
    - Notice period: 2 weeks.
- 670 CONTAMINATION
- General: Do not use topsoil contaminated with subsoil, rubbish or other materials that are:
    - Corrosive, explosive or flammable.
    - Hazardous to human or animal life.
    - Detrimental to healthy plant growth.
  - Subsoil: In areas to receive topsoil, do not use subsoil contaminated with the above materials.
  - Give notice: If any evidence or symptoms of soil contamination are discovered on the site, or in topsoil to be imported.
- 680 TOPSOIL STORAGE HEAPS
- Location: TBC.
  - Height (maximum): 1m
  - Width (maximum): 5 - 10m
  - Protection:
    - Do not place any other material on top of storage heaps.

- Do not allow construction plant to pass over storage heaps.
- Prevent compaction and contamination, by fencing and covering as appropriate.

#### 690 HANDLING TOPSOIL

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

#### 700 SPREADING TOPSOIL

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

#### 710 LOOSE TIPPING OF TOPSOIL

- General: Do not firm, consolidate or compact topsoil when laying. Tip and grade to approximate levels in one operation with minimum of trafficking by plant.
- Depths after settlement (minimum): 150mm

#### 910 FINISHED LEVELS OF TOPSOIL AFTER SETTLEMENT

- Above adjoining paving or kerbs: 50mm
- Below dpc of adjoining buildings: Not less than 50mm.
- Shrub areas: Higher than adjoining grass areas by 50mm
- Within root spread of existing trees: Unchanged.
- Adjoining soil areas: Marry in.
- Thickness of turf or mulch: Included.

#### 920 DOCUMENTATION

- Timing: Submit at handover.
- Contents:
  - Full description of all soil components.
  - Record of source for all soil components.
  - Analyst's report for each test carried out.
  - Record drawings showing the location and depth of all soils by type and grade.
  - Supplier's declaration of compliance with BS 3882.
- Number of copies: 1 + 1 Digital.

## Q31 External planting

To be read with Preliminaries/General conditions.

### GENERAL INFORMATION/ REQUIREMENTS

- 112 SITE CLEARANCE GENERALLY
- General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
  - Stones: Remove those with any dimension exceeding 50mm
  - Contamination: Remove material containing toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
  - Vegetation: existing shrubs.
  - Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.
  - Additional requirements: N/A
- 118 SOIL CONDITIONS
- Soil for cultivating and planting: Moist, friable and (excepting aquatic/ marginal planting) not waterlogged.
  - Frozen or snow covered soil: Give notice before planting. Provide additional root protection. Prevent planting pit sides and bases and backfill materials from freezing.
- 120 CLIMATIC CONDITIONS
- General: Carry out the work while soil and weather conditions are suitable.
    - Strong winds: Do not plant.
- 125 TIMES OF YEAR FOR PLANTING
- Deciduous trees and shrubs: Late October to late March.
  - Conifers and evergreens: September/ October or April/ May.
  - Herbaceous plants (including marginal): September/ October or March/ April.
  - Container grown plants: At any time if ground and weather conditions are favourable.
    - Watering and weed control: Provide as necessary.
  - Dried bulbs, corms and tubers: September/ October.
  - Colchicum (crocus): July/ August.
  - Green bulbs: After flowering in spring.
  - Wildflower plugs: Late August to mid November or March/ April.
  - Aquatic plants: May/ June or September/ October.
- 130 MECHANICAL TOOLS
- Restrictions: Do not use within 100 mm of tree and plant stems.
- 145 WATERING
- Quantity: Wet full depth of topsoil.
  - Application: Even and without damaging or displacing plants or soil.
  - Frequency: As necessary to ensure establishment and continued thriving of planting.
- 150 WATER RESTRICTIONS
- General: If water supply is or is likely to be restricted by emergency legislation, do not carry out planting until instructed. If planting has been carried out, obtain instructions on watering.
- 160 NOTICE
- Give notice before:
    - Setting out.
    - Applying herbicide.
    - Applying fertilizer.
    - Delivery of plants/ trees.
    - Planting shrubs.
    - Planting trees into previously dug pits.

- Watering.
  - Visiting site during maintenance period.
  - Period of notice: 1 Week
- 165 PREPARATION, PLANTING AND MULCHING MATERIALS
- General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.
  - Certification of source, analysis, suitability for purpose and absence of harmful substances: Submit.
    - Certified materials: N/A
    - Give notice before ordering or using.
- 200 PLANTS/ TREES - GENERAL
- Condition: Materially undamaged, sturdy, healthy and vigorous.
  - Appearance: Of good shape and without elongated shoots.
  - Hardiness: Grown in a suitable environment and hardened off.
  - Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
  - Budded or grafted plants: Bottom worked.
  - Root system and condition: Balanced with branch system.
  - Species: True to name.
  - Origin/ Provenance: Europe.
    - Definition: Origin and Provenance have the meaning given in the National Plant Specification.
- 215 PLANTS/ TREES - SPECIFICATION CRITERIA
- Name, forms, dimensions, provenance and other criteria: As scheduled and defined in the National Plant Specification.
- 216 PLANTS/ TREES - SPECIFICATION CRITERIA
- Name, forms, dimensions and other criteria: To the relevant part of BS 3936.
- 225 BULBS/ CORMS/ TUBERS
- Condition: Firm, entire, not dried out or shrivelled.
  - Health: Free from pests, diseases and fungus.
  - Handling: Remove from packaging immediately.
  - Storage: Permitted only when necessary.
    - Location: Well ventilated, dark, covered, rodent proof container, away from exhausts and fruit.
    - Duration: Minimum period.
    - Temperature: 18-21°C.
- 235 CONTAINER GROWN PLANTS/ TREES
- Growing medium: With adequate nutrients for plants to thrive until permanently planted.
  - Plants: Centred in containers, firmed and well watered.
  - Root growth: Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.
  - Hardiness: Grown in the open for at least two months before being supplied.
  - Containers: With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.
- 245 LABELLING AND INFORMATION
- General: Provide each plant/ tree or group of plants/ trees of a single species or cultivar with supplier's labelling for delivery to site, showing:
    - 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.
  - Additional information: Submit on request: N/A

- 246 LABELLING AND INFORMATION
  - Standard: To BS 3936.
  
- 255 PLANTS/ TREES RESERVED AT SUPPLIER'S PREMISES
  - Types/ Species: All Standard trees.
  - Predelivery inspection: Give notice.
  - Labelling: Identify inspected plants/ trees as reserved for use on this project.
  
- 260 PLANT/ TREE SUBSTITUTION
  - Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering: Submit alternatives, stating:
    - Price.
    - Difference from specified plants/ trees.
  - Approval: Obtain before making any substitution.
  
- 265 PLANT HANDLING, STORAGE TRANSPORT AND PLANTING
  - Standard: To HTA 'Handling and establishing landscape plants'.
  - Frost: Protect plants from frost.
  - Handling: Handle plants with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.
  - Plant packaging: Hessian.
  - Packaging of bulk quantities: Suppliers Proposals.
  - Planting: Upright or well balanced with best side to front.
  
- 280 TREATMENT OF TREE WOUNDS
  - Cutting: Keep wounds as small as possible.
    - Cut cleanly back to sound wood using sharp, clean tools.
    - Leave branch collars. Do not cut flush with stem or trunk.
    - Set cuts so that water will not collect on cut area.
  - Fungicide/ Sealant: Do not apply unless instructed.
  
- 285 PROTECTION OF EXISTING GRASS
  - General: Protect areas affected by planting operations using boards/ tarpaulins.
    - Excavated or imported material: Do not place directly on grass.
    - Duration: Minimum period.
  
- 290 SURPLUS MATERIAL
  - Subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, rubbish, prunings and other arisings: Remove.

#### **PREPARATION OF PLANTING BEDS/ PLANTING MATERIALS**

- 300 HERBICIDE
  - Locations: All Planting beds.
  - Type: Suitable for supressing perennial weeds.
  - Timing: Allow fallow period before cultivation.
    - Duration (minimum): 4 weeks.
  
- 305 WEED CONTROL
  - Locations: ll Planting beds.
  - General: Prevent weeds from seeding and perennial weeds from becoming established
  
- 341 PEAT
  - Peat or products containing peat: Do not use.
  
- 361 COMPOST
  - Locations: ll Planting beds.
  - Type: Sanitized and stabilized compost.
  - Manufacturer/ Supplier: Contractors proposals.
    - Product reference: N/A



- Standard: To PAS 100.
- Horticulture parameters:
  - pH (1:5 water extract): 7.0-8.7.
  - Electrical conductivity (maximum, 1:5 water extract): 200 mS/m.
  - Moisture content (m/m of fresh weight): 35-55%.
  - Organic matter content (minimum): 25%.
  - Grading (air dried samples): 99% passing 25 mm screen, and 90% passing 10 mm screen mesh aperture.
  - Carbon:Nitrogen ratio (maximum): 20:1.
- Texture: Friable.
- Objectionable odour: None.
- Composting Association certification: yes
- Application: Spread evenly.
  - Timing: Apply prior to cultivation.
  - Rate: TBC
- Other requirements:

#### 375 CULTIVATION

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

#### 435 CLIMBING PLANTS USED AS GROUND COVER

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

#### 445 PLANTING BULBS/ CORMS/ TUBERS

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

#### 457 PLANTING AQUATIC/ MARGINAL PLANT PLUGS

- Handling: Keep plants watered and in shade until planted. Do not allow to dry out.
- Preparation: Remove coarse weeds etc. from planting sites.
- Planting sites: rain garden.
- Waterproofing membrane below soil: Do not puncture.
- Planting: Into a hole to suit plug size and shape. Create a cleft at bottom of hole to improve rooting. Gently firm plant into hole to ensure good root hold into substrate.

#### 459 NOTCH PLANTING BARE ROOT AQUATIC PLANTS

- Notching: Make a vertical 'I', 'L', 'T' or 'H' notch.
  - Depth: To accommodate full depth of roots.
- Waterproofing membrane below soil: Do not puncture.
- Planting: Insert plant at specified water depth, close notch and firm surrounding soil to ensure good root hold into substrate.

#### 461 PLANTING CONTAINERIZED, BAGGED AND WEIGHTED BUNCH AQUATIC PLANTS

- Preparation: Remove coarse weeds, debris, etc.
- Waterproofing membrane below soil: Do not puncture.
- Planting sites: Form level, stepped or gently sloping areas as scheduled and/ or

appropriate to planting water depths and container/ bag sizes and shapes.

- Planting: Lower containers/ bags/ bunches gently into place, keeping plants upright.

#### 470 FORMAL HEDGES

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

#### 471 NATURALIZED HEDGES

- Planting: In trenches large enough to take full spread of roots. Set out plants evenly.

#### 472 FENCING SUPPORT FOR NEW HEDGES

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

#### 480 AFTER PLANTING

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

#### 485 MULCHING PLANTING BEDS (TO TOP OF PLANTERS)

- Material: bark mulch
  - Purity: Free of pests, disease, fungus and weeds.
  - Recycled content: N/A
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: 50mm depth.
- Finished level of mulch: 50mm above finishes.

## **Q32 PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS**

### **710 MAINTENANCE**

- Duration: Carry out the operations in the following clauses from completion of planting until end of defects.
- Frequency of maintenance visits: monthly.

### **720 FAILURES OF PLANTING**

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

### **740 CLEANLINESS**

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

### **750 PLANTING MAINTENANCE GENERALLY**

- Weed control: Maintain weed free area around each tree and shrub.
  - Diameter (minimum): The larger of 1 m or the surface of original planting pit.
  - Keep planting beds clear of weeds:.
- Planted areas: Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.
- Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
- Staking: Check condition of stakes, ties, guys and guards.
  - Broken or missing items: Replace.
  - Rubbing: Prevent.
  - Ties: Adjust to accommodate growth.
  - Damage to bark: Cut back neatly with sharp knife. Prevent further damage.
  - Frequency of checks: monthly
- Firming up: Gently firm loosened soil around trees/ shrubs. Straighten leaning trees/ shrubs.
- Trees: Spray crown when in leaf during warm weather.
  - Timing: After dusk.
- Watering: under instruction.

### **755 PLANTING MAINTENANCE - FERTILIZER**

- Time of year: March or April.
- Fertilizer: slow release.
  - Manufacturer: Contractors proposal.
  - Product reference: -.
- Application: Evenly spread, carefully incorporating below mulch materials.
- Application rate: 50mg

### **760 PLANTING MAINTENANCE - PRUNING**

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

### **780 MAINTENANCE INSTRUCTIONS**

- General: Before end of the maintenance period, submit printed instructions recommending

procedures to be established by the Employer for maintenance of the planting work for one full year:

790 FINAL MULCHING

- Timing: At end of the maintenance period.
- Watering: Ensure that soil is thoroughly moistened prior to remulching, applying water where necessary.
- Planting beds: Remulch.  
Depth (minimum): 50mm
- Trees: Remulch.  
Depth (minimum): 50mm

800 IRRIGATION MAINTENANCE – BY SPECIALIALIST CONTRACTOR / SUPPLIER.

## Z11 Purpose made metalwork

To be read with Preliminaries/ General conditions.

### PRODUCTS

#### 310 MATERIALS GENERALLY

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

### FABRICATION

#### 515 FABRICATION GENERALLY

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

#### 520 COLD FORMED WORK

- Profiles: Accurate, with straight arrises.

### FINISHING

#### 710 FINISHING WELDED AND BRAZED JOINTS VISIBLE IN COMPLETE WORK

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

#### 745 PREPARATION FOR APPLICATION OF COATINGS

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

#### 780 GALVANIZING

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

## **Z20 Fixings and adhesives**

To be read with Preliminaries/ General conditions.

### **PRODUCTS**

- 310 FASTENERS GENERALLY
- Materials: To have:
    - Bimetallic corrosion resistance appropriate to items being fixed.
    - Atmospheric corrosion resistance appropriate to fixing location.
  - Appearance: Submit samples on request.
- 320 PACKINGS
- Materials: Noncompressible, corrosion proof.
  - Area of packings: Sufficient to transfer loads.
- 340 MASONRY FIXINGS
- Light duty: Plugs and screws.
  - Heavy duty: Expansion anchors or chemical anchors.
- 350 PLUGS
- Type: Proprietary types to suit substrate, loads to be supported and conditions expected in use.
- 390 ADHESIVES GENERALLY
- Standards:
    - Hot-setting phenolic and aminoplastic: To BS 1203.
    - Thermosetting wood adhesives: To BS EN 12765.
    - Polyvinyl acetate thermoplastic adhesive: To BS 4071.
- 410 POWDER ACTUATED FIXING SYSTEMS
- Types of fastener, accessories and consumables: As recommended by tool manufacturer.

### **EXECUTION**

- 610 FIXING GENERALLY
- Integrity of supported components: Select types, sizes, quantities and spacings of fixings, fasteners and packings to retain supported components without distortion or loss of support.
  - Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers/ sleeves to avoid bimetallic corrosion.
  - Appearance: Fixings to be in straight lines at regular centres.
- 620 FIXING THROUGH FINISHES
- Penetration of fasteners and plugs into substrate: To achieve a secure fixing.
- 630 FIXING PACKINGS
- Function: To take up tolerances and prevent distortion of materials and components.
  - Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.
  - Locations: Not within zones to be filled with sealant.

- 640     **FIXING CRAMPS**
- Cramp positions: Maximum 150 mm from each end of frame sections and at 600 mm maximum centres.
  - Fasteners: Fix cramps to frames with screws of same material as cramps.
  - Fixings in masonry work: Fully bed in mortar.
- 670     **PELLETED COUNTERSUNK SCREW FIXING**
- Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
  - Pellets: Cut from matching timber, match grain and glue in to full depth of hole.
  - Finished level of pellets: Flush with surface.
- 680     **PLUGGED COUNTERSUNK SCREW FIXING**
- Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
  - Plugs: Glue in to full depth of hole.
  - Finished level of plugs: Projecting above surface.
- 690     **USING POWDER ACTUATED FIXING SYSTEMS**
- Powder actuated fixing tools: To BS 4078-2 and Kitemark certified.
  - Operatives: Trained and certified as competent by tool manufacturer.
- 700     **APPLYING ADHESIVES**
- Surfaces: Clean. Adjust regularity and texture to suit bonding and gap filling characteristics of adhesive.
  - Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
  - Finished adhesive joints: Fully bonded. Free of surplus adhesive.