

- 590 DRAINAGE CHANNEL SYSTEMS WITH BUILT IN FALL
- Installation: Top of channels level, installed in correct sequence to form an even gradient without ponding or backfall. Commence laying from outlets.
 - Silt and debris: Removed from entire system immediately before handover.
 - Washings and detritus: Safely disposed without discharging into sewers or watercourses.
- 600 RADIUS KERBS/CHANNELS
- Usage: Radii of 15 m or less.
- 610 ANGLE KERBS
- Usage: Internal and external 90° changes of direction.
 - Cutting of mitres: Not permitted.
- 620 ACCURACY
- Deviations (maximum):
 - Level: ± 6 mm.
 - Horizontal and vertical alignment: 3 mm in 3 m.
- 625 REGULARITY OF PAVED SURFACES
- Maximum undulation of (non-tactile) paving surface: 3 mm.
 - Method of measurement: Under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface).
 - Difference in level between adjacent units (maximum):
 - Joints flush with the surface: Twice the joint width (with 5 mm max difference in level).
 - Recessed, filled joints: 2 mm.
 - Recess depth (maximum): 5 mm.
 - Unfilled joints: 2 mm.
 - Sudden irregularities: Not permitted.
- 630 NARROW MORTAR JOINTS
- Jointing: Ends of units buttered with bedding mortar as laying proceeds. Joints completely filled, tightly butted and surplus mortar removed immediately.
 - Joint width: 3 mm.
- 650 SEALANT MOVEMENT JOINTS
- Joint filler: Compressible cellular rubber or plastics compatible with specified sealant.
 - Filler installation: Built in as work proceeds, extending through haunching and foundation. Filler positioned accurately to fully support sealant at the recommended depth below exposed faces of units.
 - Joint width: To Engineers specification.
 - Sealant: To Engineers specification.
 - Colour: Colour match to kerbs.
 - Sealant application: As section Z22.

Q23

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

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

To be read with Preliminaries/ General conditions.

TYPES OF SURFACING

- 222 PROPRIETARY COLOURED ASPHALT PAVING TYPE 07 - COLOURED ASPHALT TO COURTYARDS
- Subgrade improvement layer: Refer to engineer's details and specification.
 - Compacted thickness: 40mm.
 - Geomembrane: Geotextile membranes.
 - Manufacturer: Terram or similar approved.
Product reference: Terram 1000 Geotextile.
 - Granular sub-base: Type 3, to Engineers specification.
 - Compacted thickness: 150mm, Engineer to confirm.
 - Water collection: Not required .
 - Geotextile: Not required.
 - Manufacturer: N/a.
Product reference: N/a.
 - Surface course:
 - Manufacturer: Lafarge Tarmac
Portland House
Bickenhill Lane
Solihull
West Midlands
B37 7BQ
Email:enquiries@lafargetarmac.com
Phone: 0800 1218 218.
Product reference: ULTICOLOUR SMA 6MM.
 - Slip/ skid resistance: Submit proposals.
 - Binder: As supplied.
 - Chippings: Submit proposals.
Colour: Light Grey.
 - Aggregate size: 6mm.
 - Mix ratio (binder:aggregate): To manufacturers specification.
 - Application: Thoroughly mixed and uniformly spread.
 - Spreading rate: To manufacturers recommendations.
 - Thickness: 40mm.
 - Compaction to all layers: By heavy roller or other appropriate means, adequate to resist subsidence or deformation of the completed roads/ pavings when in use.
 - Accessories: plastic collar around tree and loose gravel to match resin bound gravel inside, to suppliers specification.

224 PROPRIETARY RESIN BOUND CHIPPINGS PAVING TYPE 04 - RESIN BOUND GRAVEL TO TREES PITS IN PUBLIC REALM - DRAWING 1418-113

- Subgrade improvement layer: Not required.
 - Compacted thickness: 40mm.
- Geomembrane: Geotextile membranes.
 - Manufacturer: Terram or similar approved.
Product reference: Terram 1000 Geotextile.
- Granular sub-base: Type 3, to Engineers specification.
 - Compacted thickness: 150mm, Engineer to confirm.
- Water collection: Not required .
- Geotextile: Not required.
 - Manufacturer: N/a.
Product reference: N/a.
- Base course: Urban tree sand.
- Surface course:
 - Manufacturer: SureSet
SureSet UK Ltd
32 Deverill Road Trading Estate
Sutton Veny, Warminster, BA12 7BZ
Email: mail@sureset.co.uk
Phone: 0800 612 6501.
Product reference: SureSet Permeable Paving.
 - Slip/ skid resistance: Submit proposals.
 - Binder: As supplied.
 - Chippings: from Natural Aggregates Paving range.
Colour: Sterling Silver.
 - Aggregate size: 10mm.
 - Mix ratio (binder:aggregate): To manufacturers specification.
- Application: Thoroughly mixed and uniformly spread.
 - Spreading rate: To manufacturers recommendations.
 - Thickness: 40mm.
 - Compaction to all layers: By heavy roller or other appropriate means, adequate to resist subsidence or deformation of the completed roads/ pavings when in use.
- Accessories: plastic collar around tree and loose gravel to match resin bound gravel inside, to suppliers specification.

225 PROPRIETARY RESIN BOUND CHIPPINGS PAVING TYPE 4A - RESIN BOUND GRAVEL TO ROOF TERRACES - DRAWING 1418-050

- Subgrade improvement layer: Not required.
 - Compacted thickness: Not applicable.
- Geomembrane: Geotextile membranes.
 - Manufacturer: Terram or similar approved.
Product reference: Terram 1000.
- Granular sub-base: Not required.
 - Compacted thickness: N/a.
- Water collection: Not required .
- Geotextile: Not required.
 - Manufacturer: Not required.
Product reference: Not required.
- Base course: Sureset Permeable Base Layer.
- Surface course:
 - Manufacturer: SureSet
SureSet UK Ltd
32 Deverill Road Trading Estate
Sutton Veny, Warminster, BA12 7BZ
Email: mail@sureset.co.uk
Phone: 0800 612 6501.
Product reference: SureSet Permeable Pathway.
 - Slip/ skid resistance: Submit proposals.
 - Binder: Sureset Permeable Base Layer.
 - Chippings: from Natural Aggregates Paving range.
Colour: Bronze or Barley Beach dependent on location.
 - Aggregate size: 6mm.
 - Mix ratio (binder:aggregate): To manufacturers specification.
- Application: Thoroughly mixed and uniformly spread.
 - Spreading rate: To manufacturers recommendation.
 - Thickness: 18mm.
 - Compaction to all layers: By heavy roller or other appropriate means, adequate to resist subsidence or deformation of the completed roads/ pavings when in use.

LAYING

315 MATERIALS

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

340 LAYING GENERALLY

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

350 COLD WEATHER WORKING

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

360 DRAINAGE FALLS

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

380 LAYING GRANULAR SURFACES IN PEDESTRIAN AREAS

- Permissible deviation from required levels, falls and cambers (maximum): ± 12 mm.
- General: Spread and level in 100 mm maximum layers. As soon as possible, compact each layer.
- Dry weather: Lightly water layers during compaction.

390 PROTECTION FROM TRAFFIC AND PLANT

- Paved areas: Restrict access to prevent damage.

Q25

Slab/brick/sett/cobble pavings

Q25 Slab/brick/sett/cobble pavings

To be read with Preliminaries/ General conditions.

GENERAL**PRODUCTS**

310A NATURAL STONE SLABS PAVING TYPE 03 - YORKSTONE NATURAL FLAG PAVERS - DRAWING 1418-042

- Standard: To BS EN 1341.
- Supplier: Charcon
Leighton Buzzard
Eastern Way Complex
Leighton Buzzard
Bedfordshire
England
LU7 4RU
Tel: 01335 372222
Email: sales.charcon@aggregate.com .
- Product reference: UK Natural Flag Paving.
- Quarry: No requirement.
- Petrographical description/ stone type: Yorkstone.
- Finish: Sawn.
- Sizes: 750x600x50mm.
- Arrises: Square.
- Surface treatment: None.

315A CONCRETE FLAGS PAVING TYPE 02 LAYOUT A - CONCRETE FLAGS TO PUBLIC REALM - DRAWING 1418-040

- Standard: To BS EN 1339.
- Manufacturer: Marshalls
Landscape House
Marshalls Mono Ltd, Landscape House,
Premier Way, Lowfields Business Park,
Elland HX5 9HT
01422 312000.
Product reference: Standard Pimple Textured Concrete Paving.
- Recycled content: As supplied.
- Colour: Natural.
- Finish: Pimple.
- Nominal sizes: 750x600x63 mm and 600x600x63mm.
- Arrises: Square.

- 316 CONCRETE FLAGS PAVING TYPE 02 LAYOUT B - CONCRETE FLAGS TO PUBLIC REALM - DRAWING 1418-041
- Standard: To BS EN 1339.
 - Manufacturer: Marshalls.
 - Product reference: Standard Pimple Texture Concrete Paving.
 - Recycled content: Contractor's choice.
 - Colour: Natural.
 - Finish: Pimple.
 - Nominal sizes: 600x600x63 mm and 450x600x75mm.
 - Arrises: Square.
- 317 CONCRETE FLAGS PAVING TYPE 05 LAYOUT A - CONCRETE FLAGS TO PUBLIC REALM - DRAWING 1418-043
- Standard: To BS EN 1339.
 - Manufacturer: Marshalls.
 - Product reference: Conservation Smooth Ground Paving.
 - Recycled content: Contractor's choice.
 - Colour: Silver Grey.
 - Finish: Smooth Ground.
 - Nominal sizes: 450x300x75mm.
 - Arrises: Chamfered.
- 318 CONCRETE FLAGS PAVING TYPE 05 LAYOUT B - CONCRETE FLAGS TO COURTYARDS - DRAWING 1418-043
- Standard: To BS EN 1339.
 - Manufacturer: Marshalls.
 - Product reference: Conservation Smooth Ground Paving.
 - Recycled content: Contractor's choice.
 - Colour: Silver Grey.
 - Finish: Smooth Ground.
 - Nominal sizes: 450x450x50mm and 600x450x63mm.
 - Arrises: Chamfered.
- 335A CONCRETE SETTS PAVING TYPE 01 - CONCRETE VEHICULAR SETTS TO PUBLIC REALM
- Manufacturer: Hanson.
 - Product reference: Formpave Eco Granite Setts.
 - Recycled content: 50% (minimum) to BS EN ISO 14021.
 - Colour: Cornish Natural and Balmoral (Contrasting colour to mark disable parking bays).
 - Finish: Hammered.
 - Sizes: 100 x 100 x 80 mm and 100 x150 x 80mm.
- 365 GEOTEXTILE SHEET BELOW SUB-BASE
- Manufacturer: Terram or similar approved.
 - Product reference: Terram 1000.
 - Recycled content: To manufacturers specification.
- 370 CEMENT FOR SITE MIXED MORTAR JOINTING
- Standard: As section Z21.
- 390 SAND FOR FLEXIBLE LAYING COURSE AND JOINTING OF CONCRETE FLAG PAVING TO COURTYARDS.
- Standard: To BS 7533-4, unbound construction laying course and jointing material.
 - Purity: Free from deleterious salts, contaminants, lime and cement.
 - Procurement: Obtain from one source and ensure consistent grading.

EXECUTION**620 ADVERSE WEATHER**

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

625 LAYING PAVINGS - GENERAL

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

630 LEVELS OF PAVING

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

635 REGULARITY OF PAVED SURFACES

- Maximum variation in gap under a 3 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface):
 - Precast concrete paving blocks and clay pavers for flexible pavements: 10 mm.
 - Precast concrete flags or natural stone slabs: 3 mm.
- Difference in level between adjacent paving units (maximum): 2 mm.
- Sudden irregularities: Not permitted.

637 REGULARITY OF PAVED SURFACES

- Maximum undulations in the surface of pavings (except tactile paving surfaces) under a 1 m straight edge placed anywhere on the surface (where appropriate in relation to the geometry of the surface): 3 mm.
- Joints between paving units or utility access covers:
 - Joints flush with the surface: difference in level between adjacent units to be no more than twice the joint width (with a 5 mm max difference in level).
 - Recessed, filled joints: difference in level between adjacent units to be no greater than 2 mm; the recess to be no deeper than 5 mm.
 - Unfilled joints: difference in level between adjacent units to be no greater than 2 mm.
- Sudden irregularities: Not permitted.

- 640 COLOUR BANDING
- General: Unless premixed by manufacturer, select from at least 5 separate packs in rotation to avoid colour banding.
- 645 PROTECTION
- Cleanliness: Keep paving clean and free from mortar droppings, oil and other materials likely to cause staining.
 - Materials storage: Do not overload pavings with stacks of materials.
 - Handling: Do not damage paving unit corners, arrises, or previously laid paving.
 - Mortar bedded pavings: Keep free from traffic after laying:
 - Pedestrian traffic (minimum): 2 days.
 - Vehicular traffic (minimum): 8 days.
 - Access: Restrict access to paved areas to prevent damage from site traffic and plant.
- 650 CEMENTITIOUS BASES AND SUB-BASES
- General: Protect from moisture loss, if not covered by another pavement course within 2 hours of completion.
- 655 CONDITION OF SUB-BASES/ BASES BEFORE SPREADING LAYING COURSE
- Trenches and excavation of soft or loose spots in subgrade: Fill and thoroughly compact.
 - Granular surfaces: Lay and compact so as to be sound, clean, smooth and close-textured enough to prevent migration of bedding/ laying course materials into the sub-base during compaction and use, free from movement under compaction plant and free from compaction ridges, cracks and loose material.
 - Prepared existing and new bound bases (roadbases): Sound, clean, free from rutting or major cracking. Remove sharp stones, projections and debris.
 - Sub-base/ Roadbase level tolerances: To BS 7533-7, Annex A.
 - Levels and falls: Accurate and within the specified tolerances.
 - Drainage outlets: Within 0-10 mm of the required finished level.
 - Features in sand bedded paving (including mortar bedded restraints and drainage ironwork): Complete to required levels; adequately bed and haunch in mortar.
 - Sub-bases containing cement/ hydraulic binder: Cure for minimum times specified in BS 7533-4.
- 695 SITE MIXED MORTAR FOR BEDDING
- Mix: 1:6 cement:sand in accordance with Camden specification.
 - Consistency: Stiff plastic.
 - Admixtures: None.
- 710 LAYING FLAG AND SLAB PAVING - SAND LAYING COURSE AND JOINTING
- Standard: In accordance with BS 7533-4.
 - Flag installation and cutting: To Interpave 'Concrete flag paving'.
 - Laying course:
 - Nominal thickness after compaction: 30 mm with a tolerance of -10 to + 5 mm.
 - Joint width: 2-5 mm.
- 715 LAYING FLAG AND SLAB PAVING - MORTAR LAYING COURSE AND JOINTING
- Standard generally: In accordance with BS 7533-4.
 - Flag installation and cutting: To Interpave 'Concrete flag paving'.
 - Laying course:
 - Nominal thickness: 30 mm after compaction to stone paving and 25mm to concrete paving.
 - Laying and jointing: Contractors choice.
 - Joint width (nominal): 10 mm.

735 LAYING CONCRETE SETT PAVING - MORTAR BEDDED

- Laying: Spread and level a bed of mortar. Individually lay and hammer down the setts so that tops are level, leaving joints open.
- Laying course:
 - Nominal thickness after compaction: 40mm.
- Jointing: Fill joints and finish neatly. Clean mortar from face of setts before it sets.
- Joint width (nominal): 10mm.
 - Recess mortar joints below sett surface by: 2 mm.

755 LAYING PRECAST CONCRETE AND GRASS PAVING

- Laying: Tamp down into lightly compacted laying course.
 - Nominal thickness of laying course after compaction: 30 mm.
- Filling: Allow to settle and refill level with surface.

785 TOOLED JOINTS IN MORTAR BEDDED UNITS

- Joints: Completely filled with bedding mortar as work proceeds.
 - Joint width: 10 mm.
 - Finish: Neat flush profile.

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

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

Q26

Special surfacings/ pavings for sport/ general amenity