

**Q55**

**External decks, boardwalks and bridges**

## Q55 External decks, boardwalks and bridges

**To be read with Preliminaries/ General conditions.**

### TENDERING

#### GENERAL

- 110 DECK PAVING TYPE 8: COMPOSITE TIMBER DECK TO COURTYARD AND ROOF TERRACES - DRAWINGS 1418 - 045 & 051
- Base preparation: Not required.
  - Structure, other than surfacing: Structural battens to specialist design laid on pedestals.
    - Fasteners: To specialists design.
  - Post setting: Pedestals fixed to concrete base.
  - Surfacing: Ecodek Composite Timber Deck boards.
    - Method of attachment: To manufacturers specification.
  - Guarding: Not required.
  - Edge protection: Not required.
  - Accessories: Not required.

#### PRODUCTS

- 305 TIMBER PROCUREMENT
- Timber (including timber for wood based products): Obtained from well managed forests and/or plantations in accordance with:
    - The laws governing forest management in the producer country or countries.
    - International agreements such as the Convention on International Trade in Endangered Species of wild fauna and flora (CITES).
  - Documentation: Provide either:
    - Documentary evidence (which has been or can be independently verified) regarding the provenance of all timber supplied.
    - Evidence that suppliers have adopted and are implementing a formal environmental purchasing policy for timber and wood based products.
  - Certification scheme: Contractor's choice.
  - Other evidence: None.
- 380 DECK BOARDS TO DECK REFER TO Clause 110
- Manufacturer: Ecodek  
Unit 13  
Abenbury Way  
Wrexham Industrial Estate  
Wrexham  
LL13 9UZ Tel: 01978 667 840  
Fax: 01978 667 857  
Email: enquiries@ecodek.co.uk.
    - Product reference: Ecodek Decking.
  - Material: Composite.
  - Treatment: Not required.
  - Profile: As supplied.
  - Finished size: 136x25mm.
    - Length: 3.6m.
  - Finish: Pebble Grey.
  - Features: Access hatch see drawing 1418-045.

## 395 SUPPORT PEDESTALS TO SUPPORT DECKING

- Manufacturer: Buzon.
  - Product reference: Submit proposals.
- Type: Adjustable.
- Material: Polypropylene.
- Dimensions: See drawings 1418-045 and 1418-051.
- Accessories: Head attachments.

**FABRICATION**

## 510 FABRICATION GENERALLY

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

**EXECUTION**

## 610 LOADING

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

## 620 CONCRETE FOUNDATIONS GENERALLY

- Standard: To BS 8500-2.
- Mix: Designated concrete not less than GEN 1 or standard 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.

## 657 INSTALLATION OF PEDESTALS

- Ensure that surface to accept pedestals is clean and free of debris.
- Setting out: Mark centre-point of pedestal on substrate surface, with guidelines to ensure square layout.
  - Orientation: Align parallel with adjacent features.
  - Spacing: To suit paving material and dimensions.
  - Additional pedestals: Submit proposals.
- Overall movement tolerance (maximum): 3 mm.

## 665 INSTALLATION GENERALLY

- Fasteners and methods of fixing: As section Z20.
- Structural members: Do not modify, cut, notch or make holes in structural members, except as indicated on drawings.
- Temporary support: Do not use stairs, walkways or balustrades as temporary support or strutting for other work.

## 670 INSTALLATION OF SURFACING

- Heading joints: Kept to a minimum, and formed only as butt joints situated over joists.
- Length: Each board must span not less than two bays between joists with joints in adjacent boards staggered.
- Gaps between boards: 3-5 mm.

**COMPLETION**

- 950 DOCUMENTATION
  - Contents:
    - General product information.
    - Installation information.
    - Inspection and maintenance reports.
  - Number of copies: 5.
  - Submission: 2 weeks prior to date when principal contractor expects work to be practically complete.

**S**

**Piped supply systems**

**S15**

**Fountains and water features**

## S15 Fountains and water features

**To be read with Preliminaries/ General conditions.**

### GENERAL

#### 110A WATER FEATURE TO EASTERN COURTYARD - DRAWINGS 1418 - 025,026,027

- Final details to specialists design.
- Equipment enclosure size to be confirmed and location agreed.
- Provide production drawings to Landscape Architect for comment prior to fabrication.

#### 121 WATER SUPPLY TO WATER FEATURE

- Source: Submit proposals .
  - Flow rate (minimum): To suit display requirements.
  - Pressure: To suit display requirements.
- Pump: Submersible Filter Pump
- Pipelines: 100mm Submit proposals .
- Display: Water Jets to specialist designer's details
- Controllers:
  - Bromine doser controller
  - PH controller
  - Top up controller
  - Water level control
  - Valves
- Treatment:
  - Filter to specialist designer's specification
  - Bromine dosing chemical holder
  - UV filter
- Accessories: Balancing tank, valves, 60mm PVC drainage pipe

#### 130 POWER SUPPLY TO WATER FEATURE

- Source: Submit proposals.
- Distribution: Submit proposals.
- Displays: Submit proposals.
- Controllers: Submit proposals.
- Accessories: Submit proposals.

### PERFORMANCE

#### 200 GENERAL DESIGN

- Design: Complete the design of the water feature.
- Proposals: Submit drawings (showing equipment positions and pipeline routes), technical information, calculations and manufacturers' literature.
- Performance criteria: Detailed design of the feature including hydraulic calculations, pump sizing and pipeline sizing to be carried out by a specialist designer or contractor .

## PRODUCTS

- 300 IN SITU GRP LINER TO WATER FEATURE
- Materials: To BS EN 13121-1 and -2.
  - Substrate: Block walls, as section F10 and In situ concrete, as section E10.
    - Preparation: Submit proposals.
  - Thickness (nominal): AS per J30 11.
  - Colour: Black.
  - Additional reinforcement: Submit proposals.
  - Additives: NA.
  - Features: As drawing 1418-025.
- 350 BACKFLOW PREVENTION TO MAINS WATER SUPPLY
- Manufacturer: Specialist Contractor's choice .
    - Product reference: Specialist Contractor's choice .
  - Type: Submit proposals .
- 400 PUMP SELECTION
- General: Select pump at or near the most efficient part of the performance curve for required duty.
- 406 SUBMERSIBLE PUMP TO WATER FEATURE
- Manufacturer: Submit proposals .
    - Product reference: Submit proposals .
  - Type: Filter .
  - Housing material: Submit proposals .
  - Flow rate: Specialist contractor's choice to suit display requirements .
  - Lift/ head of water: Specialist contractor's choice to suit display requirements .
  - Hose connection: Specialist contractor's choice to suit display requirements .
  - Anchoring: Submit proposals .
  - Additional requirements: Submit proposals .
- 415 POLYETHYLENE PIPELINE FOR UNDERGROUND USE
- Standard: To BS EN 12201-2, Kitemark certified.
  - Jointing: Compression fittings to BS EN 12201-3.
  - Colour: Blue.
- 430 THERMOPLASTICS FOR GENERAL USE
- Standard: To BS 7291.
  - Material: Specialist Contractor's choice .
  - Jointing: Specialist Contractor's choice .
  - Supports: Specialist Contractor's choice .
- 456 WATER JETS x36 JETS TO MAIN DISPLAY
- Manufacturer: Specialist Contractor's choice .
    - Product reference: Specialist Contractor's choice .
  - Material: Submit proposals .
  - Display:
    - Height of jet: To specialist contractor design .
    - Distance of jump: To specialist contractor design .
    - Stream diameter: To specialist contractor design .
  - In line filtration: To specialist contractor design .
  - Lighting: To specialist contractor design .
  - Fixing: Submit proposals .

- 520 PUMP SUPPLY CUTOFF
- Manufacturer: To specialist contractor design .
  - Product reference: To specialist contractor design .
  - Type: Submit proposals .
- 525 VALVES GENERALLY
- Standard: To suit location and pipeline material.
  - Types: Approved for the purpose by local water supply undertaker and of appropriate pressure ratings.
  - Control of valves: Fit with handwheels for isolation and regulation of circuits or equipment.
- 535 WATER LEVEL CONTROL
- Manufacturer: To specialist contractor design .
  - Product reference: To specialist contractor design .
  - Type: Submit proposals .
- 555 CLARIFIER
- Manufacturer: To specialist contractor design .
  - Product reference: To specialist contractor design .
  - Type: Ultraviolet .
- 560 FILTER
- Manufacturer: To specialist contractor design .
  - Product reference: To specialist contractor design .
  - Type: Submit proposals .
- 565 STERILIZER
- Manufacturer: To specialist contractor design .
  - Product reference: To specialist contractor design .
  - Type: Automatic brominator .
- 570 STRAINER
- Manufacturer: To specialist contractor design .
  - Product reference: To specialist contractor design .
  - Mesh size: Submit proposals .
- 580 WATER CONDITIONING UNIT
- Manufacturer: To specialist contractor design .
  - Product reference: To specialist contractor design .
  - Type: Submit proposals .
- 585 DRAIN
- Manufacturer: To specialist contractor design .
  - Product reference: To specialist contractor design .
  - Type: Submit proposals .
- 645 EQUIPMENT ENCLOSURE FOR FOUNTAIN EQUIPMENT
- Manufacturer: Milton Precast .
  - Product reference: 1.5m internal Dia Ring .
  - Type: Internal .
  - Material: Precast concrete .
  - Colour: Submit proposals .
  - Classification: N/A .
  - Features: Submit proposals .

**EXECUTION****700 INSTALLATION GENERALLY**

- Performance: Free from leaks and the audible effects of expansion, vibration and water hammer.
- Concealment:
  - Accessories;
  - Cables;
  - Controllers;
  - Elements that do not form part of the display;
  - Filters;
  - Pipelines;
  - Pumps; and
  - Treatment equipment .
- Fixing of equipment, components and accessories: Fix securely to the structure of the feature using appropriate purpose made fixings.
- Preparation: Prior to installation, clear all surfaces of debris and projections.
- Access: Allow adequate space for inspection, servicing and maintenance.
- Corrosion resistance: In locations where moisture is present or may occur, provide corrosion resistant fittings/ fixings and avoid contact between dissimilar metals by including suitable washers, gaskets, etc.

**710 INSTALLATION OF PUMPS**

- Pipeline connections: Prevent transmission of pipeline forces to pump casing.
- Pipeline mounted pumps: Support on purpose made brackets lined with vibration absorbent material.
- Alignment: Align and balance to minimize vibration.
- Drive belts: Correctly tensioned.
- Access: Provide adequate space for service and maintenance.
- Identification plate: Engrave showing:
  - Manufacturer's name and address.
  - Serial number.
  - Duty and maximum head.
  - Speed.
  - Electrical loading.

**720 PIPELINE INSTALLATION**

- Appearance: Install pipes straight, and parallel or perpendicular to walls, floors, ceilings, and other built elements.
- Joints, bends and offsets: Minimize.
- Access: Locate runs to facilitate installation of equipment, accessories and insulation and allow access for maintenance.
- Electrical equipment: Install pipelines 150 mm (minimum) clear of electrical equipment.
  - Separation: Do not run pipelines through electrical enclosures or above distribution boards, controllers or outlets.
- Insulation: Allow space around pipelines to fit insulation without compression.

**721 PIPELINE FIXING**

- Fixing: Secure and neat.
- Pipeline support: Prevent strain, e.g. from the operation of taps or valves.
- Drains and vents: Fix pipelines to falls. Fit draining taps at low points and vents at high points.
- Thermal expansion and contraction: Allow for thermal movement of pipelines. Isolate from structure.
  - Noise or abrasion of pipelines caused by movement: Prevent.
  - Pipelines passing through walls, floors or other built elements: Sleeve.

**722 SUPPORTS FOR COPPER AND STAINLESS STEEL PIPELINES**

- Spacing: Fix securely and true to line at the following maximum centres:
  - 15 and 22 mm pipe OD: 1.2 m horizontal, 1.8 m vertical.
  - 28 and 35 mm pipe OD: 1.8 m horizontal, 2.4 m vertical.
  - 42 and 54 mm pipe OD: 2.4 m horizontal, 3.0 m vertical.
- Additional supports: Locate within 150 mm of connections, junctions and changes of direction.

**723 SUPPORTS FOR THERMOPLASTICS PIPELINES**

- Spacing: Fix securely and true to line at the following maximum centres:
  - Up to 16 mm pipe OD: 300 mm horizontal, 500 mm vertical.
  - 17–25 mm pipe OD: 500 mm horizontal, 800 mm vertical.
  - 26–32 mm pipe OD: 800 mm horizontal, 1000 mm vertical.
- Additional supports: Locate within 150 mm of connections, junctions and changes of direction.

**725 INSTALLATION OF INSULATION TO PIPELINES**

- All above ground pipelines: Insulate in unheated spaces.
- External supply pipelines: If less than 750 mm below finished ground level, Insulate.
- Appearance: Fix securely and neatly. Make continuous over fittings and at supports.
  - Gaps: Not permitted.
  - Location of seam: On 'blind' side of pipeline.
- Timing: Fit insulation after testing.

**730 JOINTS IN COPPER AND STAINLESS STEEL PIPELINES:**

- Preparation: Cut pipes square. Remove burrs.
- Joints: Neat, clean and fully sealed. Install pipe ends into joint fittings to full depth.
- Bends: Do not use formed bends on exposed pipework, except for small offsets. Form changes of direction with radius fittings.
- Adaptors for connecting dissimilar materials: Purpose designed.
- Substrate and plastics pipes and fittings: Do not damage, e.g. by heat when forming soldered joints.
- Flux residue: Clean off.

**731 JOINTS IN THERMOPLASTICS PIPELINES**

- Fittings and accessories for joints: Purpose designed.
- Preparation: Cut pipes square. Remove burrs.
- Joints: Neat, clean and fully sealed. Install pipe ends into joint fittings to full depth.
- Compression fittings: Do not over tighten.

**735 INSTALLATION OF VALVES**

- Isolation and regulation valves: Provide on equipment and subcircuits.
- Access: Locate where valves can be readily operated and maintained and next to equipment which is to be isolated.
- Connection to pipework: Fit with joints to suit the pipe material.

**740 INSTALLATION OF BREAK TANKS**

- Outlet positions: Connect lowest outlets at least 30 mm above bottom of tank.
- Access: Fix tank with a minimum clear space of 350 mm above.

**745 INSTALLATION OF WATER SOFTENERS**

- Supply continuity: Fit bypass pipe and stop valves for continuity of water supply.
- Drains: Connect overflow/ drain lines to trap and waste.
- Back siphonage: Prevent back siphonage of brine during regeneration process.

**COMPLETION**

- 910 FLUSHING
- Standard: To BS EN 805, section 12.
- 920 SYSTEM DISINFECTION
- Standard: To BS EN 805, section 12.
- 930 TESTING AND COMMISSIONING OF PIPEWORK
- Standard: To BS EN 805, section 11.
    - Notice (minimum): Three days.
- 936 CLEANING
- Equipment: Clean immediately before handover.
- 940 DOCUMENTATION
- Contents:
    - Full technical description of each system installed.
    - Manufacturers' operating and maintenance instructions for equipment and controls.
    - Manufacturers' guarantees and warranties.
    - System operating and maintenance instructions for the system as a whole giving optimum settings for controls and maintenance intervals for all equipment.
    - Record drawings showing the location of circuits, fittings, pipes, apparatus and operating controls.
    - List of normal consumable items.
    - Electrical inspection and completion certificates.
  - Number of copies: 5.
  - Submission: Two weeks prior to date when principal contractor expects work to be practically complete.
- 950 OPERATING TOOLS
- Tools: Supply tools for operation, maintenance and cleaning purposes.
  - Keys: Supply keys for valves, vents and cabinets.
- 960 LABELS
- Valve labels: Provide on isolating and regulating valves on primary circuits, stating function.

**Z**

**Building fabric reference specification**