



COOP LIVE
Q10 - KERBS/EDGINGS/CHANNELS

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Co-op Live

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Tender 4B Update

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Q10 KERBS/EDGINGS/CHANNELS

GENERAL

110 WORKS INCLUDED

1. Scope of Works: This section of the Specification, when read in conjunction with the Design Drawings, provides particular requirements with respect to the works, which include the following:
 - a. Kerbs.
 - b. Precast edgings.
 - c. Drainage channel (architectural requirements).
2. Particular Interfaces
 - a. Complete the Detailed Design of all interfaces with adjoining trades prior to commencement of manufacture.
 - b. Ensure that all interfaces are fully co-ordinated prior to commencement.
3. Related Documents and Sections: Examine the Drawings and the Contract Documents for requirements that directly affect or are affected by Work of this Section. Other Documents and Sections that directly relate to work of this Section include, but are not limited to:
 - a. The Preliminaries, general provisions of the Contract, including General and Supplementary Conditions, and Architectural General Requirements Specification Sections.

111 APPLICABLE DESIGN RESPONSIBILITY

1. Design & Build Procurement Routes
 - a. Appoint a specialist sub-contractor to complete the Detailed Design maintaining at all times the intent portrayed on the Design Drawings whereby the Architect's role post-novation or during subsequent design stages shall be limited to checking compliance with quality, design and visual intent only.

112 TENDER SUBMITTALS

1. Tender Response
 - a. Provide tender submittals in accordance with the requirements of SUBMITTALS clauses of the A Section of the Specification.
 - b. Submit a design response with the Tender proposal, to include all profiles of typical conditions, with dimensions.
 - c. The Tender design response shall include:
 - 1). Samples where specified.
 - 2). List of Tests included.
 - 3). QA/ QC programme.
 - 4). List of proposed Working Drawings.
 - 5). Summary of deviations from the Specification.
 - 6). Outline technical specifications reflecting proposed materials/ systems, etc.

- 7). A list of proposed suppliers and sub-contractors intended to be used.

113 SAMPLES

1. Pre-contract Samples: Sufficient samples of the following, including relevant trade literature and technical specifications, shall be provided in accordance with SUBMITTALS clauses of the A Section:
 - a. Minimum 300mm length of each type of kerb/ edging/ drainage in proposed finish.
2. Post Contract Samples: In accordance with SUBMITTALS clauses of the A Section, post contract samples of the following shall be provided:
 - a. Minimum 300mm length of each type of kerb/ edging/ drainage in proposed finish.

114 MOCK-UPS, PROTOTYPES AND QUALITY BENCHMARKS

1. Mock-ups: Provide mock-ups in accordance with SUBMITTALS clauses of the A Section as follows:
 - a. Not required.
2. Prototype Requirements: Provide prototypes in accordance with SUBMITTALS clauses of the A Section as follows:
 - a. Not required.
3. Benchmark Requirements: The following quality benchmarks shall be provided in accordance with SUBMITTALS clauses of the A Section:
 - a. The first delineated and fully completed area of each system type as accepted by the Architect.

115 TESTING

1. Test Requirements: Provide details of all tests undertaken on materials supplied for use within the works and supply copies of test results to the Architect immediately they become available and not less than 10 days prior to commencement of the works.

PRODUCTS

210 PERFORMANCE REQUIREMENTS

1. Comply with the general performance of PERFORMANCE REQUIREMENTS AND DATA clauses of the A Section and the following specific performance requirements.
2. Structural
 - a. Specific Movements
 - 1). The works shall be designed, fabricated and installed to withstand all movements under all design loads or combination of loads without damage or any reduction in the performance of the works.
 - 2). The works shall not deflect under loading in any way that is detrimental to any elements of the works or adjacent structural or building elements.
 - 3). The works shall accommodate the following movements without any permanent deformation or reduction in the specified performance:
 - a). Deflection under design loads.

- b). The effects of wind loadings.
 - c). Changes in dimension and shape of components arising from building movements, including settlement, creep, twisting and racking.
 - d). Movement of any joint whether designed to permit movement or not.
 - b. Specific Dead Loads
 - 1). The works shall be capable of accommodating the following dead loads without any reduction in performance and without sustaining non-repairable damage:
 - a). The works' own dead load.
 - b). Permanent fixtures or services attached to the works.
 - 2). When calculating loads the worst combination shall be considered, taking account of the fact that the pressure coefficients at various locations may determine more than one design criterion.
 - c. Specific Live Loads
 - 1). The works shall be capable of accommodating the following live loads without any reduction in performance and without sustaining non-repairable damage:
 - a). Proposed static and dynamic usage and accidental loads during the service life of the works.
 - b). Loads applied through maintenance and cleaning operations.
 - c). Impact loads, or transferred impact loads, that occur during the service life of the works.
 - d). Loads imposed during replacement.
 - 2). When calculating loads the worst combination shall be considered, taking account of the fact that the pressure coefficients at various locations may determine more than one design criterion.
- 3. Environmental
 - a. Thermal Movement
 - 1). The works shall be capable of accommodating changes in dimension and shape of their components resulting from varying surface temperatures, without any reduction in the specified performance and appearance.
 - 2). Thermal movements shall not result in audible noise.
 - b. Moisture Movement: The works shall withstand movement without permanent deformation or any reduction in the specified performance:
 - 1). Due to changes in the moisture content of their components, resulting from variations in the moisture content of the air.
 - 2). Due to the expansion of absorbed or retained moisture caused by freezing.
- 4. Durability

- a. The works shall perform throughout its design life without failure resulting from defects in design, materials or workmanship. Failure shall be defined as breakage, disengagement of components, reduction in performance or unacceptable change in appearance.
 - b. Electro-chemical corrosion or staining resulting from water running from one material to another shall be prevented.
- 5. Slip Resistance
 - a. When tested using the Pendulum Tester as described in the Testing Section, walkable surfaces, inclusive of surface treatment, shall achieve the following pendulum test value (PTV):
 - 1). Dry: Not less than 40 PTV.
 - 2). Wet: Not less than 40 PTV.
 - b. When tested using the surface roughness meter, walkable surfaces shall achieve the following surface roughness (Rz) value:
 - 1). Not less than 20 µm Rz.
- 6. Sustainability
 - a. Refer to Section A.600 series SUSTAINABILITY clause, determine and evaluate the applicability of the specified requirements including BREEAM Credit Requirements to the works specified in this Section of the Specification. Comply with all relevant requirements.

211 SYSTEMS

- 1. Type EXT-201 Precast Concrete Kerbs - Raised
 - a. Description: Precast concrete kerbs bedded on haunching to form raised kerb (125mm above existing levels) construction.
 - b. Conformance: BS EN 1340 and BS 7533: Part 6.
 - c. Material: Hydraulically pressed precast concrete kerbs.
 - d. Nominal Size: 915mm x 145mm x 255mm.
 - e. Finish: Textured.
 - f. Colour: Silver grey.
 - g. Joints: Butt jointed.
 - h. Indicative Product:
 - 1). Manufacturer: Marshalls, or acceptable equivalent.
 - 2). Reference: Conservation Silver Grey.
- 2. Type EXT-202 Precast Concrete Kerbs - Flushed
 - a. Description: Precast concrete kerbs bedded on haunching to form flushed kerb construction.
 - b. Conformance: BS EN 1340 and BS 7533: Part 6.
 - c. Material: Hydraulically pressed precast concrete kerbs.
 - d. Nominal Size: 915mm x 145mm x 255mm.
 - e. Finish: Textured.

- f. Colour: Silver grey.
 - g. Joints: Butt jointed.
 - h. Indicative Product:
 - 1). Manufacturer: Marshalls, or acceptable equivalent.
 - 2). Reference: Conservation Silver Grey.
3. Type EXT-203 Precast Concrete Kerbs - Dropped
- a. Description: Precast concrete kerbs bedded on haunching to form dropped kerb construction.
 - b. Conformance: BS EN 1340 and BS 7533: Part 6.
 - c. Material: Hydraulically pressed precast concrete kerbs.
 - d. Nominal Size: 915mm x 145mm x 255mm.
 - e. Finish: Textured.
 - f. Colour: Silver grey.
 - g. Joints: Butt jointed.
 - h. Indicative Product:
 - 1). Manufacturer: Marshalls, or acceptable equivalent.
 - 2). Reference: Conservation Silver Grey.
4. ~~Type EXT-205 Natural Stone Kerbs~~
- ~~a. Description: Natural stone flush kerbs bedded on haunching to frame building and all landscape elements as indicated on the Design Drawings.~~
 - ~~b. Conformance: BS EN 1343 and BS 7533: Part 6.~~
 - ~~c. Material: Sawn natural granite kerbs.~~
 - ~~d. Nominal Size: 200mm x 200mm x 80mm.~~
 - ~~e. Finish: Flamed.~~
 - ~~f. Colour: Grey.~~
 - ~~g. Joints: Butt jointed.~~
 - ~~h. Indicative Product:~~
 - ~~1). Manufacturer: BBS Natural Stone Specialists, or acceptable equivalent.~~
5. ~~Type EXT-207 Natural Stone Kerbs~~
- ~~a. Description: Natural stone flush kerbs bedded on haunching to all heavy loaded vehicular interfaces as indicated on the Design Drawings.~~
 - ~~b. Conformance: BS EN 1343 and BS 7533: Part 6.~~
 - ~~c. Material: Sawn natural granite kerbs.~~
 - ~~d. Nominal Size: 200mm x 200mm x 200mm.~~
 - ~~e. Finish: Flamed.~~
 - ~~f. Colour: Black.~~

~~g. Joints: Butt jointed.~~

~~h. Indicative Product:~~

~~1). Manufacturer: BBS Natural Stone Specialists, or acceptable equivalent.~~

~~2). Reference: Mongolian Black.~~

6. Type EXT-211 Metal Kerbs - Raised

- a. Description: Metal raised kerbs for landscaping as indicated on the Design Drawings.
- b. Conformance: BS 7533.
- c. Material: Galvanised mild steel plate.
- d. Fabrication requirements:
 - 1). Thickness: 3mm thick.
 - 2). 30mm top edge fold.
 - 3). Corners shall be preformed by the manufacturer. No joints on corners.
 - 4). Rectangular cross planter support brackets shall be fixed down with 120mm x M10 through-bolts.
- e. Nominal Size: 300mm high.
- f. Finish: Polyester powder coated to Qualicoat Level 2.
- g. Colour: Black RAL 9005.
- h. Indicative Product:
 - 1). Manufacturer: Kinley, or acceptable equivalent.
 - 2). Reference: Planterline Bespoke.

7. Type EXT-221 Metal Edgings

- a. Description: Aluminium angle edging for hard landscaping.
- b. Conformance: BS 7533.
- c. Material: Aluminium plate.
- d. Nominal Size: 150mm high.
- e. Finish: Mill.
- f. Colour: Natural.
- g. Thickness: 6mm.
- h. Indicative Product:
 - 1). Manufacturer: Kinley, or acceptable equivalent.
 - 2). Reference: ExcelEdge AluExcel Aluminium angle edging.

8. Type EXT-231 Precast Concrete Edging

- a. Description: Precast concrete edgings bedded on haunching.
- b. Conformance: BS EN 1340 and BS 7533: Part 6.

- c. Material: Hydraulically pressed precast concrete edging.
- d. Nominal Size: 915mm x 50mm x 150mm.
- e. Finish: Textured.
- f. Colour: Silver grey.
- g. Joints: Butt jointed.
- h. Indicative Product:
 - 1). Manufacturer: Marshalls, or acceptable equivalent.
 - 2). Reference: Conservation Silver Grey.

9. Type EXT-801 Slot Drainage - Type 1

- a. Description: Proprietary one piece integral-channel-and-grating linear channel drainage.
- b. Conformance: BS EN 1433.
- c. Configuration: 200mm width x 500mm unit lengths.
 - 1). Number of grating slots: Double row.
 - 2). Position of grating slots: Central.
 - 3). Channel Depth: According to required capacity.
- d. Material/ Finish: Vienite, high strength recycled polymer concrete, black colour.
- e. Load class: F 900 to BS EN 124.
- f. Connect to Storm Water drainage as contained in Services Engineer's Documentation/ Civil Engineer's Documentation.
- g. Comply with the manufacturer's compatibility and installation recommendations.
- h. Indicative Product:
 - 1). Manufacturer: ACO, or acceptable equivalent.
 - 2). Reference: ACO RoadDrain 200, 33301.

~~10. Type EXT-802 Slot Drainage - Type 2~~

- ~~a. Description: Proprietary galvanised steel grating slot channel drainage.~~
- ~~b. Conformance: BS EN 1433.~~
- ~~c. Configuration: 223mm width x 105mm height x 500mm unit lengths.~~
 - ~~1). Number of grating slots: Single row.~~
 - ~~2). Position of grating slots: Offset.~~
 - ~~3). Channel Depth: According to required capacity.~~
- ~~d. Material/ Finish: Mild steel, galvanised finish.~~
- ~~e. Load class: Class D 400 to BS EN 124.~~
- ~~f. Connect to Storm Water drainage as contained in Services Engineer's Documentation/ Civil Engineer's Documentation.~~

~~g. Comply with the manufacturer's compatibility and installation recommendations.~~

~~h. Indicative Product:~~

~~1). Manufacturer: ACO, or acceptable equivalent.~~

~~2). Reference: Multidrain M200D Brickslot, 408996.~~

11. Type EXT-803 Slot Drainage - Type 3

- a. Description: Proprietary one piece, polymer concrete integral-channel-and-grating linear channel drainage.
- b. Conformance: BS EN 1433.
- c. Configuration: 200mm width x 1000mm unit lengths.
 - 1). Number of grating slots: Double row.
 - 2). Position of grating slots: Central.
 - 3). Channel Depth: According to required capacity.
- d. Material/ Finish: Vienite, high strength recycled polymer concrete, black colour.
- e. Load class: Class D 400 to BS EN 124.
- f. Connect to Storm Water drainage as contained in Services Engineer's Documentation/ Civil Engineer's Documentation.
- g. Comply with the manufacturer's compatibility and installation recommendations.
- h. Indicative Product:
 - 1). Manufacturer: ACO, or acceptable equivalent.
 - 2). Reference: MonoDrain PD100D 28600.

12. Type EXT-811 Floor Drainage Gully

- a. Description: Proprietary stainless steel channel drainage gulley grating.
- b. Conformance: BS EN 1433.
- c. Material/ Finish: Stainless steel, brushed finish.
- d. Load class: Class D 400 to BS EN 124. To be confirmed.
- e. Connect to Storm Water drainage as contained in Services Engineer's Documentation/ Civil Engineer's Documentation.
- f. Comply with the manufacturer's compatibility and installation recommendations.
- g. Indicative Product:
 - 1). Manufacturer: Wade International Ltd, or acceptable equivalent.
 - 2). Reference: L2106 Vari-Level Grating.

13. Type EXT-815 Mesh Drainage - Type 4

- a. Description: Proprietary mesh stainless steel grating slot channel drainage.
- b. Conformance: BS EN 1433.
- c. Configuration: 135mm width x 200mm height.

- d. Material/ Finish: Stainless steel.
 - e. Load class: Class D 400 to BS EN 124.
 - f. Connect to Storm Water drainage as contained in Services Engineer's Documentation/ Civil Engineer's Documentation.
 - g. Comply with the manufacturer's compatibility and installation recommendations.
 - h. Indicative Product:
 - 1). Manufacturer: ACO, or acceptable equivalent.
 - 2). Reference: Multidrain M100DS, 132887/132888DL.
14. Type EXT-817 Mesh Drainage - Type 5
- a. Description: Proprietary mesh stainless steel grating slot channel drainage.
 - b. Conformance: BS EN 1433.
 - c. Configuration: 135mm width x 75mm height.
 - d. Material/ Finish: Stainless steel.
 - e. Load class: Class D 400 to BS EN 124.
 - f. Connect to Storm Water drainage as contained in Services Engineer's Documentation/ Civil Engineer's Documentation.
 - g. Comply with the manufacturer's compatibility and installation recommendations.
 - h. Indicative Product:
 - 1). Manufacturer: ACO, or acceptable equivalent.
 - 2). Reference: Multidrain M100DS, 132887/132888DL.
15. Type EXT-819 Slot Drainage - Type 6
- a. Description: Proprietary concrete channel and grating linear channel drainage to match existing.
 - b. Conformance: BS EN 1433.
 - c. Configuration: 430mm width x 295mm height x 500mm length.
 - d. Material/ Finish: Hydraulically pressed reinforced concrete, standard grey colour.
 - e. Load class: Class D 400/ Class F 900 to BS EN 124. To be confirmed.
 - f. Connect to Storm Water drainage as contained in Services Engineer's Documentation/ Civil Engineer's Documentation.
 - g. Comply with the manufacturer's compatibility and installation recommendations.
 - h. Indicative Product:
 - 1). Manufacturer: Marshalls, or acceptable equivalent.
 - 2). Reference: Max-E-Channel.

212 MATERIALS

- 1. Kerbs
 - a. Conformance:

- 1). Precast concrete kerbs: BS EN 1340.
- ~~2). Natural stone based: BS EN 1343.~~
- b. Density: Circa 2300 kg/m³.
- c. Type: Solid.
- d. Profile: Refer to system description.
- e. Traffickable surface slip resistance: PTV 45 to BS 7976.
2. Drainage channel
 - a. Conformance: BS EN 1433.
 - b. Loading category to BS EN 124: A15/B125/C250/D400/E600/F900.
 - c. Gratings:
 - 1). Grade 1.4301 to Stainless steel: BS EN 10088.
 - 2). Mild steel: Galvanising to BS EN ISO 1461.
3. Concrete:
 - a. Conformance: BS EN 206 and BS 8500: Part 1.
4. Aggregates for concrete
 - a. Conformance: BS EN 12620.
5. Mortar: BS EN 998: Part 2.
 - a. Aggregates for mortar: BS EN 13139.

213 ACCESSORIES

1. Geotextiles:
 - a. Conformance: BS EN 15381, BS EN 13251 and BS EN 13249.

EXECUTION

310 LAYING KERBS, EDGINGS AND CHANNELS

1. Cutting:
 - a. Form neat junctions.
 - b. Neat, accurate without spalling.
 - c. Long units (450mm and over): Minimum length after cutting: 300mm.
 - d. Short units minimum length after cutting: The lower of one third of their original length or 50 mm.
 - e. Lay channels to an even gradient without ponding or backfall, with the lowest point of channel 6mm above outlets.
2. Bonding of units
 - a. Positioned true to line and levelled along top and front faces, in a mortar bed on accurately cast foundations or on a race of fresh concrete.

3. Securing of units: After bedding has set, secured with a continuous haunching of concrete or on a race of fresh concrete with backing concrete cast monolithically.

311 ADVERSE WEATHER

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

312 CONCRETE FOR FOUNDATIONS, RACES AND HAUNCHING

1. In accordance with BS 8500: Part 2.
2. Designated mix: Not less than GEN0 or Standard Mix ST1.

313 CEMENT MORTAR BEDDING

1. Refer to Section Z21 – Mortars.

314 NARROW MORTAR JOINTS

1. Ends of units shall be buttered with bedding mortar as laying proceeds.
2. Joints shall be completely filled tightly butted and surplus mortar removed immediately.
3. Joint width: 3mm.

315 TOOLED MORTAR JOINTS

1. Ends of units shall be buttered with bedding mortar as laying proceeds.
2. Joints shall be completely filled and raked out to a depth of 10mm for pointing.
3. Joint width: 6mm.

316 ACCURACY

1. Allowable deviation:
 - a. Level: +/-6mm.
 - b. Horizontal and vertical alignment: 3mm in 3m.