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Architectural Specification

PREFABRICATED CONCRETE STREET FURNITURE

USE	Master specification for inclusion in project documentation. Product-specific drawings, finishes and anchoring requirements shall be added for the selected VPI product.

1. Scope and precedence

1.1 Scope. This specification defines the minimum requirements for prefabricated architectural concrete street furniture designed and manufactured by VPI.

1.2 Product selection. Product type, dimensions, colour, accessories, orientation and fixing method shall be as shown on the drawings and in the project schedule.

1.3 Precedence. Where product-specific VPI technical documentation sets a more stringent or more specific requirement, the product-specific documentation shall take precedence.

1.4 Substitutions. Proposed alternatives shall demonstrate equivalent design intent, material performance, surface quality, dimensional control, durability, fixing method and maintenance requirements. Substitutions are subject to the specifier's written approval.

2. Manufacturer and quality assurance

2.1 Single-source responsibility. The concrete body and all integrated components shall be supplied as a coordinated product by one manufacturer.

2.2 Controlled production. Products shall be manufactured in a controlled factory environment using documented production and quality-control procedures.

2.3 Submittals. Before manufacture, submit the following where relevant to the selected product:

- product data sheet and dimensioned technical drawing;
- colour and finish sample, where requested by the specifier;
- installation and anchoring instructions;
- use, cleaning and maintenance guidelines;
- relevant material certificates and test documentation; and
- declaration of performance or conformity documentation, where legally applicable.

3. Materials

3.1 Concrete. Use high-quality self-compacting concrete (SCC) in accordance with EN 206. Minimum concrete specification: C40/50-XC4-XV3(H)-XF4-8-SCC, unless the product-specific documentation states otherwise.

3.2 Cement and colour. Use white cement. Grey and coloured concrete shall be produced using inorganic pigments suitable for concrete. Colour shall be integral to the concrete matrix unless expressly stated otherwise.

3.3 Reinforcement. Reinforcement shall be designed for the product, handling, transport, installation and intended use. Reinforcement shall remain fully embedded and protected against corrosion; exposed reinforcement is not permitted.

3.4 Integrated materials. Timber, metal and other components shall match the selected product specification. Metal components shall be hot-dip galvanized, or hot-dip galvanized and powder-coated, as specified. Timber finish shall be as stated in the product documentation.

4. Surface appearance

4.1 Finish quality. Visible concrete surfaces shall achieve architectural exposed-concrete class SB4 in accordance with the DBV/VDZ Merkblatt Sichtbeton, unless otherwise stated in the product-specific documentation.

4.2 As-cast appearance. The specified appearance shall be achieved directly from the mould. Visible surfaces shall be even, dense and smooth. Grinding or polishing is not permitted. Cosmetic repair intended to conceal manufacturing defects is not permitted.

4.3 Edges and corners. Edges shall be visually straight and consistent. Corner chamfers shall not exceed 5 mm unless shown otherwise on the product drawing.

4.4 Unacceptable defects. Visible surfaces shall be free from structural cracks, honeycombing, delamination, exposed reinforcement and damage that impairs function, durability or the specified appearance. Surface assessment shall account for the agreed SB4 requirements and the natural characteristics of architectural concrete.

4.5 Natural variation. Minor variations in colour, texture and pore pattern that are inherent to mineral materials and compatible with the approved sample and specified exposed-concrete class are acceptable. Exact uniformity shall not be required.

5. Dimensional requirements

5.1 Dimensions. Overall dimensions, interfaces, fixing points and tolerances shall comply with the product-specific technical drawing.

5.2 Surface deviation. Maximum deviation from plane: 3 mm per metre.

5.3 Edge deviation. Maximum deviation of linear edges: 3 mm per metre.

5.4 Fit of components. Integrated timber, metal and accessory components shall be aligned, secure and free from unintended movement, sharp projections or interference with normal use.

6. Durability and surface protection

6.1 Exposure. Concrete composition and product design shall be suitable for permanent exterior use and for the exposure classes stated in Clause 3.1, subject to project-specific environmental assessment by the specifier.

6.2 Water absorption. Concrete shall have a dense surface and low water absorption, consistent with the specified high-strength self-compacting concrete and the manufacturer's production controls.

6.3 Standard protection. All exposed concrete surfaces shall receive a mineral densifying impregnation that reduces surface porosity, improves resistance to soiling and facilitates cleaning while preserving the original concrete appearance.

6.4 Optional protection. Where scheduled, apply a polyurethane protective coating suitable for improved resistance to grease, oils, acidic contaminants and paint. The coating shall preserve the intended concrete appearance.

6.5 Compatibility. Surface treatments shall not create an unintended gloss, colour shift, film build-up or other visible change inconsistent with the approved finish sample.

7. Product delivery, storage and handling

7.1 Delivery. Deliver products protected against impact, abrasion, contamination and moisture. Use the manufacturer's designated lifting and handling points.

7.2 Storage. Before installation, store products protected from precipitation. Store either in a completely dry environment or unpacked with suitable protection and ventilation so that moisture cannot become trapped beneath packaging.

7.3 Packaging. Remove packaging immediately after installation. Moisture trapped beneath packaging may cause lime-related surface discoloration; such discoloration is cosmetic but shall be avoided by correct storage and handling.

8. Installation

8.1 General. Install products in accordance with the manufacturer's current product-specific installation instructions and approved shop drawings.

8.2 Substrate. Verify that foundations, pavements and supporting structures are complete, level and capable of carrying the product's self-weight and service loads before installation.

8.3 Fixing. Use the fixing method, anchors and embedded components specified for the selected product. Do not drill, cut or modify the product without the manufacturer's written approval.

8.4 Protection. Protect finished surfaces during installation. Replace or professionally repair damaged products only with the manufacturer's approval and in accordance with its written instructions.

8.5 Completion. Leave products clean, stable, correctly aligned and ready for use. Remove temporary protection and all packaging from site.

9. Cleaning and maintenance

9.1 General. Maintain products in accordance with the current VPI General Installation, Use and Maintenance Guidelines and product-specific instructions.

9.2 Concrete. Use neutral-pH cleaning products for standard impregnated concrete. Do not use acidic cleaners, aggressive abrasion or sanding. Graffiti removal shall be carried out by a qualified specialist.

9.3 Coated concrete. Clean polyurethane-coated surfaces using methods approved by the manufacturer. Do not sand the coating. Local coating repairs and renewal shall be performed only by the manufacturer or an authorized qualified contractor.

9.4 Timber and metal. Clean timber and metal components with neutral, solvent-free cleaning products and without sanding. Inspect and renew protective finishes at the intervals stated in the manufacturer's maintenance guidelines and as required by exposure and wear.

10. Applicable standards and references

REFERENCE	APPLICATION
EN 206	Concrete - Specification, performance, production and conformity; use the applicable current edition and national implementation.
EN 13198:2003	Precast concrete products - Street furniture and garden products.
DBV/VDZ Merkblatt Sichtbeton	Exposed-concrete guidance; class SB4 applies as specified above.
VPI product documentation	Current product data sheet, technical drawing, installation instructions and General Installation, Use and Maintenance Guidelines.

PROJECT NOTE The specifier remains responsible for confirming project-specific loads, accessibility requirements, foundations, exposure conditions, local regulations and any additional testing or certification required by the project jurisdiction.

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