

# MODULAR PRECAST CONCRETE STREET FURNITURE

Multi-view Engineering Specification Datasheet

|                |                                   |                |                                              |
|----------------|-----------------------------------|----------------|----------------------------------------------|
| Document Ref:  | TS-PC-MSU-02                      | Product Class: | Heavy-Duty Public Infrastructure             |
| Product Model: | PC-MSU-02 (Arch & Stool Assembly) | Compliance:    | EN 13198 (Precast Concrete Street Furniture) |

## 1. DESIGN CONFIGURATION & ORTHOGRAPHIC OVERVIEW

The **PC-MSU-02** is a multi-functional precast concrete street furniture system optimized for high-density public urban environments, parks, and transit terminals. The configuration features an outer structural load-bearing shelter shell arch combined with integrated, nesting inner modular bollards/stools. This nesting architecture balances modular layout versatility with ultra-robust anti-vandalism performance.

### Orthographic Profile Breakdown:

- Front & Rear Views:** Showcases the primary structural clear span arch with radius-curved inner corner fillets to reduce stress concentration. Features two symmetrical, self-supporting nested inner units with contoured footer moldings for ground anchor interface.
- Side Views (1 & 2):** Illustrates the external rib stabilization system, consisting of three continuous vertical reinforcement ribs intersecting a horizontal mid-level structural shelf recess. The bottom base profile includes a wide ground recess cutout to facilitate forklift handling, clean drainage paths, and stable load distribution.

## 2. DIMENSIONAL SPECIFICATIONS (ESTIMATED NOMINAL)

| COMPONENT               | PARAMETER / DIMENSION        | SPECIFICATION METRIC                |
|-------------------------|------------------------------|-------------------------------------|
| Main Outer Arch         | Total Height x Width x Depth | 1500 mm x 1600 mm x 1200 mm         |
|                         | Wall / Slab Thickness        | 100 mm (nominal reinforced section) |
|                         | Corner Fillet Radius         | R 75 mm                             |
| Nested Inner Units (x2) | Total Height x Width x Depth | 750 mm x 450 mm x 1200 mm           |
|                         | Clear Center Span Width      | 250 mm                              |
| Assembly Weight         | Total Combined Weight        | Approx. 2.8 Metric Tons             |

## 3. MATERIALS & ENGINEERING MATRIX

|                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Material Grade:</b> C40/50 Air-Entrained Self-Consolidating Concrete (SCC) providing an exceptionally smooth, architectural-grade off-form finish without surface macro-porosity. |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- Exposure Class:** Designed for XC4 (cyclic wet/dry) and XF2 (freeze-thaw resistance) environmental categories under Eurocode 2.

- **Reinforcement Matrix:** Structural welded wire mesh (structural grade B500A/B500B) paired with internal fiber reinforcement (alkali-resistant glass fibers or polypropylene microfibers) to mitigate surface micro-cracking and chip degradation.
- **Surface Treat:** Finished with a matte concrete sealer providing hydrophobic resistance against water absorption, oil staining, and atmospheric carbonation.

## 4. STRUCTURAL FEATURES & FUNCTIONAL ANCHORING

- **Modular Versatility:** The inner units can function as independent high-security traffic bollards, secondary bench seating elements, or structural counterweights.
- **Handling & Transport:** Designed with built-in lower perimeter forklift slots visible on side profiles, allowing seamless deployment and rapid relocation via standard warehouse machinery without specialized overhead rigging loops.
- **Anchoring System:** Base feet feature cast-in threaded sleeves (M16) for secure, hidden sub-surface chemical anchor bolting onto a concrete foundation pad.