

**DIVISION 12 00 00      FURNISHINGS**  
**SECTION 12 93 00      SITE FURNISHINGS**  
**SECTION 12 93 43      SITE SEATING AND TABLES**  
**SECTION 12 93 43.13    SITE SEATING**  
**QUADRA SEATING SYSTEM**

**Part 1 General**

01. Summary

A. Section Includes:

1. 17", TENSL UHPC casting with front-to-back aperture, no inset
2. 17", TENSL UHPC casting with powdercoated aluminum inset
3. 17", TENSL UHPC casting with TENSL UHPC inset
4. 17", TENSL UHPC casting with FSC® Recycled reclaimed Teak hardwood inset
5. 17", TENSL UHPC casting with planter liner
6. 48", TENSL UHPC casting with front-to-back aperture, no inset
7. 48", TENSL UHPC casting with powdercoated aluminum inset
8. 48", TENSL UHPC casting with TENSL UHPC inset
9. 48", TENSL UHPC casting with FSC® Recycled reclaimed Teak hardwood inset
10. 48", TENSL UHPC casting with planter liner
11. 72", TENSL UHPC casting with front-to-back aperture, no inset
12. 72", TENSL UHPC casting with powdercoated aluminum inset
13. 72", TENSL UHPC casting with TENSL UHPC inset
14. 72", TENSL UHPC casting with FSC® Recycled reclaimed Teak hardwood inset
15. 72", TENSL UHPC casting with powdercoated aluminum inset and planter liner
16. 72", TENSL UHPC casting with TENSL UHPC inset and planter liner
17. 72", TENSL UHPC casting with FSC® Recycled reclaimed Teak hardwood inset and planter liner

02. Submittals

A. Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.

B. Product data:

1. Manufacturer's standard product literature.
2. Shop drawings.
3. Installation instructions.
4. Maintenance instructions.

C. Submit finish samples for approval.

03. Quality Assurance

A. Manufacturer Qualifications:

1. Minimum 15 years experience in the manufacture of site seating.
2. Provide reference list of at least ten major transportation authorities, municipalities, universities, or other high-use public environments currently using site seating fabricated by the manufacturer.

04. Delivery, Storage and Handling

- A. Handle products in accordance with manufacturer's instructions.
- B. Store products in manufacturer's original packaging until ready for installation.
- C. Protect products from impacts and abrasion during storage.

05. Warranty

- A. Provide manufacturer's standard warranty:
  - 1. Warranty terms: one year from date of invoice against defects in materials and workmanship.

**Part 2 Products**

01. Manufacturer

- A. Basis-of-design product: provide seating system modules based on the product named:

- 1. Quadra Seating System by Forms+Surfaces.

- 2. Manufacturer Contact:

- Forms+Surfaces
    - 30 Pine Street
    - Pittsburgh, PA 15223
    - phone: 800-451-0410
    - fax: 412-781-7840
    - email: sales@forms-surfaces.com
    - website: www.forms-surfaces.com

B. Module

- 1. Material:

- a. Body: cast TENSL glass fiber reinforced ultra high performance concrete (UHPC).

- 1) TENSL Material Performance Characteristics:

- 1. Compressive Strength: ? 18,275 lbs./in<sup>2</sup> (126 MPa).

- 2. Flexural Strength: ? 2,756 lbs./in<sup>2</sup> (19 MPa).

- 3. Tensile Strength: 1,160 lbs./in<sup>2</sup> (8 MPa).

- 4. Water Absorption: < [measurable limit (kg/m x h0.5)] [3.5%].

- b. Base: cast aluminum.

- 2. Finishes:

- a. Body: intrinsic UHPC finish, Natural color with hydrophobic treatment.

- b. Base: cast aluminum in Slate Texture powdercoat.

- 3. Dimensions and Weight:

- a. Overall dimensions and Weight:

- 1) TENSL UHPC casting with front-to-back aperture, no inset: 17" long x 17" deep x 17.8" high, 164 lbs.

- 2) TENSL UHPC casting with aluminum inset: 17" long x 17" deep x 17.8" high, 180 lbs.

- 3) TENSL UHPC casting with TENSL UHPC inset: 17" long x 17" deep x 17.8" high. 192 lbs.

- 4) TENSL UHPC casting with hardwood inset: 17" long x 17" deep x 17.8" high. 180 lbs.

- 5) TENSL UHPC casting with planter liner: 17" long x 17" deep x 17.8" high. 177 lbs.
- 6) TENSL UHPC casting with front-to-back aperture, no inset: 48.8" long x 17" deep x 17.9" high, 340 lbs.
- 7) TENSL UHPC casting with aluminum inset: 48.8" long x 17" deep x 17.9" high, 379 lbs.
- 8) TENSL UHPC casting with TENSL UHPC inset: 48.8" long x 17" deep x 17.9" high. 416 lbs.
- 9) TENSL UHPC casting with hardwood inset: 48.8" long x 17" deep x 17.9" high. 379 lbs.
- 10) TENSL UHPC casting with planter liner: 48.8" long x 17" deep x 17.9" high. 369 lbs.
- 11) TENSL UHPC casting with aluminum inset: 72.1" long x 17" deep x 17.9" high, 491 lbs.
- 12) TENSL UHPC casting with TENSL UHPC inset: 72.1" long x 17" deep x 17.9" high. 566 lbs.
- 13) TENSL UHPC casting with hardwood inset: 72.1" long x 17" deep x 17.9" high. 627 lbs.
- 14) TENSL UHPC casting with planter liner: 72.1" long x 17" deep x 17.9" high. 566 lbs.
- 15) TENSL UHPC casting with aluminum inset and planter liner: 72.1" long x 17" deep x 17.9" high, 564 lbs.
- 16) TENSL UHPC casting with TENSL UHPC inset and planter liner: 72.1" long x 17" deep x 17.9" high, 609 lbs.
- 17) TENSL UHPC casting with hardwood inset and planter liner: 72.1" long x 17" deep x 17.9" high, 564 lbs.

4. Mounting:

- a. Freestanding.
- b. Surface mount. Provide stainless steel installation hardware when surface mount is specified.

C. Inset

1. Material (Select one option below):

- a. Aluminum.
- b. TENSL UHPC (Select one option below):
  - 1) No pattern.
  - 2) Bias pattern.
- c. FSC® Recycled reclaimed Teak hardwood.
- d. Planter liner: black polyethylene with UL94HB fire-rating.
- e. Aluminum with planter liner (72" models only).
- f. TENSL UHPC with planter liner: black polyethylene with UL94HB fire-rating (72" models only) (Select one option below):
  - 1) No pattern.
  - 2) Bias pattern.
- g. FSC® Recycled reclaimed Teak hardwood with planter liner (72" models only).

2. Finishes:

- a. Aluminum inset (if selected, choose one option below):
  - 1) Standard Texture from Forms+Surfaces Powdercoat Chart.

- 2) Custom RAL powdercoat color.
- b. Module: intrinsic UHPC finish, Natural color with hydrophobic treatment.
- c. Hardwood slats: Penofin® hardwood formula “Transparent Natural.”

**Part 3 Execution**

01. Examination

- A. Verify that substrates are stable and capable of supporting the weight of items covered under this section.
- B. Verify that substrates have been adequately prepared to securely anchor those items that will be surface mounted.

02. Installation

- A. Install according to the manufacturer’s installation instructions.
- B. Install in conformance to applicable ADA guidelines and End User’s established Accessibility policies.

**END OF SECTION**