

Guide Specification TWIG Bench

1.0 GENERAL

1.1 WORK INCLUDES

- A. Provision of TWIG Bench

1.2 RELATED WORK

- A. Section 129300 Site Furnishings
- B. Section 129343 Seating and Tables
- C. Section 033000 Cast-in-Place concrete

1.3 SUBMITTALS

- A. Product Data: Manufacturer's standard catalog cut sheets..
- B. Samples: As required for color selection or material thickness only.
- C. For custom applications, showing critical sizes and dimensions for installation and integration with other work.
- D. Environmental Product Declarations (EPDs): Submit third-party verified and product-specific EPDs for the specified materials, demonstrating compliance with ISO 21930, 14025, and 14044, or equivalent standards..

1.4 DELIVERY, STORAGE AND HANDLING

- A. Unwrap & inspect after delivery for signs of damage during transit.
- B. Protect from damage during storage and handling.
- C. Store indoors if possible. Do not stack.

1.5 PROJECT CONDITIONS

- A. Contractor to provide level area to support benches.
- B. Protect units from damage by adjacent work.

1.6 WARRANTY

- A. free from defects in material and/or workmanship for a period of 3 years from invoice date.
- B. Warranty does not apply to damages from alteration, misuse, or installation damage.
- C. Normal use of these products may result in scratches, nicks, and dents. These are considered normal wear, tear, and are not the responsibility of the manufacturer
- D. Manufacture will, at its option repair, replace, or refund the purchase price of products that are deemed defective by an authorized representative

2.0 PRODUCTS

2.1 ACCEPTABLE PRODUCTS/MANUFACTURERS

- A. TWIG Bench, manufactured by Tournesol Siteworks LLC. 2930 Faber St., Union City, CA 94587 Tel: (800) 542-2282 Tournesol.com

2.2 TWIG Benches

A. Materials

1. GFRC Base: – All Cement TYPE I, II, or II per ASTM C150
 - 4a. Fibers: Alkali resistant, with a minimum zirconia content of 16 percent, 1 to 2 inches long, specifically produced for use in GFRC.
 - 4b. Aggregates per: ASTM C144, for sand and aggregates used for structural and aesthetic characteristics
 - 4c. Admixtures per ASTM C494, for concrete enhancing admixtures covering water reduction, retarding/accelerating set times, performance enhancement.
 - 4d. Coloring Pigments per ASTM C979 For integrally colored concrete.
 - 4e. Water: Potable; free from deleterious material that may affect color stability, setting, or strength of GFRC

B. Fabrication:

1. GFRC: Architectural parts shall be fabricated by spray laminate method using suitable molds to attain the desired surface finish. The finished face mix shall be not less than 1/8" thick and thicker in those areas requiring additional structural strength. Where ribs or stiffeners are to be fastened to liner sections by spray laminating over premolded forms, the stiffeners or ribs shall be located and spray laminated into position before the section to which they are to be attached has passed the state of curing, and the finished joint shall be strong and durable.
 - 1a. Backing Mix: Proportion backing mix of Portland cement, glass fibers, sand, and admixtures to comply with design requirements. Provide nominal glass-fiber content of not less than 5 percent by weight of total mix.
 - 1b. Face Mix: Proportion face mix of portland cement, sand and admixtures to comply with design requirements.
 - 1c. Polymer Curing Admixture: : 6 to 7 percent by weight of polymer curing admixture solids to dry portland cement.
 - 1d. Coloring Admixture: Not to exceed 10 percent of cement weight.

C. Performance Characteristics:

3. GFRC Bench: – As confirmed by Finite Element Analysis (FEA), vertical walls will not deflect more than $L/300$ over the length (L) of Seating at Maximum capacity.

D. Finishes:

1. Lumber – Apply exterior grade penofin to all surfaces
2. GFRC – specified finish; factory finished.

E. Sizes:

1. Standard Sizes Modular units fabricated to size by manufacturer as required. sizes as per shop drawings
2. Custom – Custom sizes available

2.3 ACCESSORIES

A. Permanent Attachment

1. Anchors: Stainless steel anchor brackets that extend approx. 2.5" beyond the bottom of the foot of the TWIG bench. Either 3 or 6-point anchors are
2. Blind Anchors: blind anchors, which allow for non-accessible, invisible mounting. Stainless Steel internal bracket designed to be epoxied over a ½"dia threaded rod

A. Skate Guard

1. Stainless Steel skate guards are available to help protect the surface of the GFRc TWIG. Two guards should be used per "leg" of the TWIG, or a minimum of six total. For best results, skate guards are to be pre-installed by manufacturer prior to delivery.

3.0 EXECUTION

3.1 PREPARATION

- A. Seating Prior to fabrication, contractor shall verify as-built dimensions of installation area to ensure proper size, fit and quantity required.

3.2 INSTALLATION

- A. Install in accordance with instructions at locations indicated in shop or layout drawings.
- B. Provide continuous basal support. Install level (or shim to level)
- C. Corrosion-resistant anchor bolts to be furnished by the installing contractor.