

Guide Specification – Division 12 - Furnishings

12 93 00 Site Furnishings

12 93 43 Site Seating and Tables

12 93 43.13 Site Seating

TWIG Bench

1.0 GENERAL

1.1 WORK INCLUDED

- A. Provision of bench
- B. Provision of metal mounting brackets (as required).

1.2 RELATED WORK

- A. Section 03300 Cast-in-Place concrete
- B. Section 06100 Rough Carpentry
- C. Section 06200 Finish Carpentry

1.3 SUBMITTALS

- A. Product Data: Manufacturer's standard cut sheets.
- B. Samples: As required for color selection only. Prepare 3x3-inch material samples (or larger) to indicate color of final product.
- C. Shop Drawings: For custom applications, showing critical sizes and dimensions for installation and integration with other work.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Inspect benches after delivery for signs of damage during transit.
- B. Protect benches from damage during storage and handling.
- C. Store benches in their original packaging. Do not expose thermoplastic benches to temperatures during storage where material will exceed 150° F. Do not store benches in stacks. Do not stand or walk on benches.

1.5 PROJECT CONDITIONS

- A. Contractor to provide adequate structural support for benches
- B. Protect units from damage by adjacent work.

1.6 WARRANTY

- A. Site furnishings are to carry a three year manufacturer's limited warranty against defects in material & workmanship, starting the date of delivery to the project.

2.0 PRODUCTS

2.1 ACCEPTABLE PRODUCTS/MANUFACTURERS

- A. TWIG Bench, manufactured by Tournesol Siteworks LLC, 30955 San Antonio Rd., Hayward, CA 94544, 800.542.2282, tournesolsiteworks.com

2.2A TWIG Benches – Lightweight Concrete

- A. Materials-Glass Fiber Reinforced Lightweight Concrete (GFRC):
 - 1. Portland Cement: ASTM C150, Type I, II, or III.
 - 2. Glass Fibers: Alkali resistant, with a minimum zirconia content of 16 percent, 1 to 2 inches long, specifically produced for use in GFRC.

3. Sand: clean silica, complying with composition requirements of ASTM C144; passing No. 30 sieve with a maximum of 2 percent passing No. 100 sieve.
4. Coloring Admixture: ASTM C979, synthetic mineral-oxide pigments or colored water-reducing admixtures, temperature stable, nonfading, and alkali resistant.
5. Water: Potable; free from deleterious material that may affect color stability, setting, or strength of GFRC ..
6. Polymer Curing Admixture: Acrylic thermoplastic copolymer dispersion complying with PCI MNL 130.

B. Construction

Parts shall be fabricated hand and spray layup 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.

1. 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.
2. Face Mix: Proportion face mix of portland cement, sand and admixtures to comply with design requirements.
3. Polymer Curing Admixture: 6 to 7 percent by weight of polymer curing admixture solids to dry portland cement.
4. Coloring Admixture: Not to exceed 10 percent of cement weight.

2.3 BENCH ACCESSORIES

A. For permanent attachment of GFRC TWIG, use either

1. TWIG 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 available.
2. TWIG blind anchors, which allow for non-accessible, invisible mounting. Stainless Steel internal bracket designed to be epoxied over a 1/2" dia threaded rod

B. 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. Prior to fabrication, the installing contractor shall verify as-built surface dimensions to ensure proper size, fit and quantity required.

3.2 INSTALLATION

- A. Benches are shipped assembled, installation is to be done by customer or his contractor.
- B. Provide continuous basal support.
- C. Install benches in accordance with manufacturer's recommendations and installation instructions.
- D. Corrosion-resistant anchor bolts to be furnished by the installing contractor.