

Guide Specification GFRC Bioretention Planters

1.0 GENERAL

1.1 WORK INCLUDES

- A. Provision of GFRC Bioretention planters

1.2 RELATED WORK

- A. Section 033000 Cast-in-Place concrete
- B. Section 129333 Manufactured Planters
- C. Section 329433 Planters
- D. Section 129300 Site Furnishings
- E. Section 334923 Storm Drainage Water Retention Structure.

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 benches after delivery for signs of damage during transit.
- B. Protect planters from damage during storage and handling.
- C. Store planters indoors if possible. Do not stand or walk on planters.
- D. Planter can be lifted by provided straps into all four corners. Lift only 6" off ground. Planter not to be loaded when mobilizing.

1.5 PROJECT CONDITIONS

- A. Contractor to provide a level surface area, adequate for weight of planter and saturated soil of 130 lbs per cubic sq ft.
- B. Protect units from damage by adjacent work.

1.6 WARRANTY

- A. Product will be 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, and is 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. GFRC Bioretention Planters, manufactured by Tournesol Siteworks LLC.
2930 Faber St., Union City, CA 94587 Tel: (800) 542-2282 Tournesol.com

2.2 GFRC BIORETENTION PLANTER

A. Materials

1. Cement – TYPE I, II, or III per ASTM C150
2. Fibers – Alkali resistant, with a minimum zirconia content of 16 percent, 1 to 2 inches long, specifically produced for use in GFRC.
3. Aggregates – ASTM C144, for sand and aggregates used for structural and aesthetic characteristics.
4. Admixtures – per ASTM C494, for concrete enhancing admixtures covering water reduction, retarding/accelerating set times, performance enhancement.
5. Water – Potable; free from deleterious material that may affect color stability, setting, or strength of GFRC
6. Fasteners: All fasteners are 304 commercial grade stainless steel.
7. Drainage – 4" PVC Perforated drain pipe, 4" PVC uprights with overflow drain and clean out cap. Outlet gasket by manufacturer ¼" SS 304 compression plates with rubber molded gasket.

B. Fabrication:

1. GFRC Planters: spray laminate method using suitable molds to attain the desired surface finish. The finished face mix shall be not less than 1/4" 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 pre-molded 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.
 - A. 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 8 percent by weight of total mix.
 - B. Face Mix: Proportion face mix of Portland cement, sand and admixtures to comply with design requirements.
 - C. Polymer Curing Admixture: : 6 to 7 percent by weight of polymer curing admixture solids to dry Portland cement.
 - D. Coloring Admixture: Not to exceed 10 percent of cement weight.
 - E. Waterproofing: Interior fully sealed and waterproof with Laticrete Hydro barrier.
2. Plumbing – Pipe to be field cut and Overflow and cleanout assembled into planter on site by contractor.
3. Exit Gaskets – Laser cut cut Stainless Steel Plate with weld studs. Molded rubber compression gasket. Assembled by contractor onsite.

- C. Performance Characteristics:
 - 1. GFRC Planter: – As confirmed by Finite Element Analysis (FEA), vertical walls will not deflect more than L/300 over the length (L) of planter when loaded with 130 lbs./cu.ft. level backfill soil media to within 6” of top of Planter. Manufacturer to provide copies of FEA results confirming this performance upon request. Tested with 60/40 Sand to compost bioretention soil, 1” dia clean drain rock. See treatment rate data supplied by manufacture.
- D. Finishes:
 - 1. Specified finish; factory finished. Custom Colors available if specified.
- E. Sizes:
 - 1. Standard Sizes Modular units fabricated to size by manufacturer as required to fill specified areas. Refer to catalog for standard sizes.
 - 2. Custom Sizes Custom sizes as per approved shop drawings.

2.3 PLANTER OPTIONS

- A. Splash Box & Spreader: Stainless Steel Splash boxes available in 18” and 24” Square. Stainless Steel Spreaders in 48”, 60”, and 72” Length.
- B. Exit Outflow Gasket Location: Standard side exit on end of planter. Other exit locations are custom.
- C. Scoops: adjacent planter walls may be lowered to allow multiple modular units appear to be one continuous unit. Optional connection kits also available, contact manufacturer prior to ordering
- D. Wally Bench: Cantilevered bench – Contact manufacturer for size and installation requirements.

3.0 EXECUTION

3.1 PREPARATION

- A. Planters Prior to planter fabrication, the contractor shall verify as-built dimensions of planter area or receptacles to ensure proper size, fit and quantity required.

3.2 INSTALLATION

- A. Planters Provide continuous basal support and Install level to permit adequate drainage and irrigation.