

Specification for Geofill LD Pervious Low Density Cellular Concrete (LDCC) For Load Reducing Fills

I – SCOPE OF WORK

Work shall include all labor, materials, and equipment to furnish and install Geofill LD Pervious, a free draining open-cell, Low Density Cellular Concrete (LDCC) at the locations shown in the plans in accordance with the details in the plans and this specification.

II – MATERIALS

- A. Portland cement shall comply with ASTM C150 (Type I, II, or III).
- B. Fly ash shall be Class C or Class F and compatible with foaming agent.
- C. Water shall be free from deleterious substances.
- D. Foam shall be Geofill P Concentrate (Phone #888-820-3455) conforming to ASTM C796.
- E. Admixtures for water reducing, retarding, accelerating, anti-washout and other specific properties may be used when specifically approved by the manufacturer of the preformed foam.
- F. Geofill LD Pervious shall have the following properties:
 - 1. Cast Density Range, PCF 20 – 40
 - 2. Minimum Compressive Strength, PSI 40
 - 3. Material shall be free draining

III – SUBMITTALS

- A. Mix design for Pervious LDCC, including materials to be used and their sources.
- B. Resume of contractor showing experienced as specified below, including qualifications of contractor's superintendent and / or foreman.
- C. Description of equipment and placement methods to verify compliance with specifications.

IV – PRODUCTION

- A. Foam generating equipment shall be used to produce a predetermined quantity of pre-formed foam which shall be mixed and blended with cementitious slurry. Equipment shall be calibrated to produce consistent foam that shall retain its stability until the cement sets to form a uniform cellular structure.
- B. When producing neat cellular concrete (no sand or other aggregates), pre-formed foam under no circumstances shall be added or blended with cementitious slurry in a transit mixer.
- C. Pervious LDCC shall be produced utilizing specialized automated proportioning, mixing, and foam producing equipment, which is capable of meeting the specified properties.

- D. Avoid excessive handling of the material. After sufficient mixing of the foam with slurry, Pervious LDCC shall be conveyed promptly in its final location.
- E. All equipment used to furnish the Pervious LDCC must be approved by the manufacturer.

V – INSTALLATION

- A. Prior to placement of Pervious LDCC, the ground surface shall be excavated to the lines and grades shown on the plans.
- B. There shall be no standing water in the area to be filled. If necessary, dewatering shall be continuous during placement of materials.
- C. Any items to be encased in Pervious LDCC shall be set in place and secured prior to installation of material.
- D. Placement shall not be allowed on frozen ground.
- E. Place Pervious LDCC in such a manner so that minimal consolidation of material occurs during or after placement. Placement of Pervious LDCC shall not exceed depths as recommended by the manufacturer.
- F. Final surface of Pervious LDCC shall be within +/- 0.2 feet of the plan elevations.
- G. Pervious LDCC shall not be vibrated or disturbed. Vehicles, equipment, backfills or other loadings on the fill material shall not be permitted until the material has attained an adequate compressive strength.

VI – QUALITY CONTROL AND QUALITY ASSURANCE

- A. Contractor shall have a record of experience and quality of work placing Pervious LDCC that is satisfactory to the Engineer including the following:
 - 1. Shall be capable of developing a mix design, batching, mixing, handling, and placing of Pervious LDCC.
 - 2. Shall be regularly engaged in the production and placement of Pervious LDCC for engineered fills.
 - 3. Shall have satisfactory completed during the last three (3) years at least five (5) Pervious LDCC projects of no less than 5000 cubic yards each.
 - 4. Workers, including the contractor's superintendent and/or foreman, shall be fully qualified to perform the work and have had previous experience in production and placement of Pervious LDCC under similar conditions.

B. TESTING

- 1. Testing to be performed by the Owner or approved agency.
- 2. A minimum of four (4) 3"x 6" cylinders shall be molded for each 500 cubic yards placed.
- 3. Pervious LDCC may be tested at any age (after 3 days) for compressive strength in accordance with ASTM C-495. At least two (2) specimens from each set should be tested at 28 days.
- 4. Contractor shall record and measure wet cast densities at the point of placement hourly. Mix shall be adjusted as required to obtain the specified cast density at the point of placement.

VII – MEASUREMENT AND PAYMENT

- A. Geofill LD Pervious shall be paid for at the contract unit price per cubic yard for materials produced.
- B. When the project is constructed essentially to the lines, grades or dimensions shown on the plans and the contractor and owner have agreed in writing that the plan quantities are accurate, no further measurement shall be required and payment will be for the quantities shown in the contract for Geofill LD Pervious; however, if errors are discovered after work has been started, an appropriate adjustment will be made.
- C. When the plans have been altered, accurate survey information is not available prior to placement, or when disagreement exists between the contractor and owner as to the accuracy of the plan quantities, either party shall, before work is started, have the right to request in writing that Geofill LD Pervious be measured based on materials produced on site.