Permeable Low-Density Cellular Concrete (PLDCC)

1. GENERAL
   1. DESCRIPTION
      1. Work Included: This work shall consist of batching, mixing, and placing PLDCC of the appropriate density as indicated by the specifications or as directed by the engineer. A trained PLDCC installer shall furnish labor, material, equipment, and supervision for the installation of the PLDCC in accordance with the drawings and specifications.
   2. QUALITY ASSURANCE
      1. Use skilled labor that is thoroughly trained, experienced, and familiar with the specified requirements and the methods for proper performance of this work.
      2. The PLDCC installer shall be approved in writing by Aerix Industries.
   3. SUBMITTALS
      1. The prime contractor shall list the product and qualified installer of the PLDCC and shall not employ any product or producer without the prior approval of the engineer.
      2. Product data: within 30 calendar days after award of the contract, the prime contractor shall submit for approval by the engineer:
         1. Manufacturer’s specifications, catalog cut sheet, and other engineering data needed to demonstrate to the issuing authority compliance with the specified requirements.
2. PRODUCTS
   1. MATERIALS
      1. Foam Liquid Concentrate: AQUAERiX™ shall be supplied by Aerix Industries and shall comply with the standard specifications of ASTM C 869 when tested in accordance with ASTM C 796.
      2. Cement: the portland cement shall comply with ASTM C 150. Other supplemental cementitious material such as fly ash may be used when approved by the project engineer. Supplementary cementitious materials should be tested by the foam concentrate manufacturer for compatibility with the foaming agent
      3. Admixtures: admixtures for accelerating, water reducing, and other specific properties may be used when specifically approved by the project engineer. Admixtures should be tested by the foam concentrate manufacturer for compatibility with the foaming agent.
      4. Water: use water that is potable and free from deleterious amounts of alkali, acid, and organic materials, which would adversely affect the setting or strength of the PLDCC.
   2. PROPERTIES\*
      1. The PLDCC shall meet the following properties:

|  |  |  |  |
| --- | --- | --- | --- |
| Cast Density, pcf (ASTM C 796) | 25 | 30 | 35 |
| Average Compressive Strength, psi  (ASTM C 495) | 60 - 80 | 100 - 140 | 150 - 210 |
| Average Coefficient of Permeability, cm/sec (ASTM D 2434 – modified) | 0.20 – 0.63 | 0.09 – 0.51 | 0.05 – 0.09 |

\**properties were tested with various independent testing facilities utilizing Type I/II cement at 0.50 – 0.55 water to cement ratios*

1. EXECUTION
   1. SUBGRADE CONDITIONS
      1. Examine the areas and conditions under which work of this section will be performed. Correct conditions that may be determined to be detrimental to timely and proper completion of the work. Do not proceed until satisfactory conditions are established.
      2. The area to be filled shall not have any standing water in it prior to placement of PLDCC.
      3. Any items to be encased in PLDCC shall be properly set and stable prior to the installation.
   2. WEATHER CONDITIONS
      1. Avoid freezing before the initial set of PLDCC occurs.
      2. Do not place at temperatures lower than 32 degrees Fahrenheit or when freezing conditions are expected in less than 24 hours.
      3. If these conditions cannot be met, consult Aerix Industries to determine precautions necessary to assure acceptable installation.
   3. MIXING AND CONVEYING
      1. Use job site proportioning, mixing, and placing equipment approved by project engineer.
      2. Mix the materials according to the mix design and convey promptly to point of final placement.
      3. Avoid excess handling of PLDCC according to industry standards.
      4. Place PLDCC in lifts not to exceed 48 inches in depth, unless otherwise recommended by Aerix Industries and approved by the engineer.
      5. Backfill or other usual loadings on the PLDCC shall not be permitted until the PLDCC has attained enough strength to hold the loading per the project engineer’s recommendation.
      6. Use of silt fabric around the PLDCC is recommended.
2. TESTING
   1. WET DENSITY
      1. During placement of the initial batches, check the density and adjust the mix as required to obtain the specified cast density at the point of placement per ASTM.
      2. Four (4) specimens shall be taken for each 100 cubic yards of PLDCC or as recommended per the project engineer.
3. MEASUREMENT AND PAYMENT
   1. MEASUREMENT
      1. PLDCC shall be measured on a cubic yard basis.
   2. PAYMENT
      1. Payment for PLDCC shall be made at contract unit prices for quantities determined as specified above.

ITEM NO. PAYMENT UNIT

PLDCC CY

*Last Revision 08/2019*

*Drafted 3/2015*