

Thiessen Cellular Concrete Specifications

MEARL GEOFOAM™

Low Density Cellular Concrete Fill (LDCCF)

1. GENERAL

1.1 DESCRIPTION

1.1.1. Work Included

(A) This work shall consist of batching, mixing and placing Mearl Geofoam LDCCF of the appropriate type as indicated on the plans or as directed by the engineer.

1.1.2. Work not included but related to the LDCCF:

(A) Excavation and preparation of the site for the LDCCF

(B) Installation of any utilities or services within the LDCCF

(C) Final surface waterproofing (optional) over the LDCCF and any subsequent structural concrete slab or pavement.

1.2 QUALITY ASSURANCE

1.2.1 Use skilled labor who are thoroughly trained, experienced and familiar with the specified requirements and the methods for proper performance of this work.

1.2.2 The approved subcontractor, supplier, and producer of the LDCCF shall be approved in writing by CELLULAR CONCRETE SOLUTIONS.

1.2.3 The specialized batching, mixing, and placing equipment shall be approved for the purpose by CELLULAR CONCRETE SOLUTIONS.

1.3 SUBMITTALS

1.3.1 The prime contractor shall list the product and qualified producer of the LDCCF and shall not employ any product or producer without the prior approval of the engineer.

1.3.2 Product data: within 30 (option 15) calendar days after

1.3.2 Product data: within 30 (option 15) calendar days after award of the contract, the prime contractor shall submit for approval by the engineer:

(A) Manufacturer's specifications, catalog cut and other engineering data needed to demonstrate to the issuing authority compliance with the specified requirements.

(B) Written approval of the approved subcontractor and the approved equipment by CELLULAR CONCRETE SOLUTIONS.

2. PRODUCTS

2.1 MATERIALS

2.1.1 Provide the Mearl Geofoam LDCCF as specified.

2.1.2 Cement: the Portland cement shall comply with ASTM C150 Type I, II, or III. Pozzolons and other cementitious materials may be used when specifically approved by CELLULAR CONCRETE SOLUTIONS.

2.1.3 Admixtures: admixtures for accelerating, water reducing, and other specific properties may be used when specifically approved by CELLULAR CONCRETE SOLUTIONS.

2.1.4 Water: use water which is potable and free from deleterious amounts of alkali, acid and organic materials which would adversely affect the setting or strength of the LDCCF.

2.1.5 Expansion Material: Geofoam manufactured by CELLULAR CONCRETE SOLUTIONS.



2.2 PROPERTIES

2.2.1 The LDCCF shall meet the following properties:

	CATEGORY		
	II	III	IV
Maximum Cast Density, pcf	30	36	42
Minimum Compressive Strength, psi	40	80	120
Freeze-Thaw Resistance, Cycles	330	-	330
Relative E not less than 70% per ASTM C666, modified			
Shear Modulus, G, psi	27,670	41,800	50,260
per ASTM D4015 at confining stress of 3 psi			
Young's Modulus, E, psi	67,500	101,900	122,635
Based on Poisson's Ratio u=0.22 and E=2G (1+U)			
% Water Absorption, after 120 days, maximum	20	16	14
Coefficient of Permeability, k cm/sec			
Confining stress, 2.5 psi	4.7x10 ⁻⁵	-	1.5x10 ⁻⁶
Confining stress, 18 psi	1.9x10 ⁻⁵	-	5.4x10 ⁻⁷

3. EXECUTION

3.1 SUBGRADE CONDITION

3.1.1 Examine the areas and conditions under which work of this section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until satisfactory conditions are established.

3.1.2 The area to be filled shall not have any standing water in it prior to placement of LDCCF.

3.1.3 Any items to be encased in the LDCCF shall be properly set and stable prior to the installation of LDCCF.

3.2 WEATHER CONDITION

3.2.1 Avoid freezing before initial set of LDCCF.

3.2.2 Do not place at temperatures lower than 32 degrees Fahrenheit or when freezing conditions are expected in less than 24 hours.

3.2.3 If these conditions cannot be met, consult CELLULAR CONCRETE SOLUTIONS and determine precautions necessary to assure installation on an acceptable LDCCF.

3.3 MIXING AND CONVEYING

3.3.1 Using only the approved job site proportioning, mixing and placing equipment approved by Cellular Concrete SOLUTIONS, mix the materials according to the mix design and convey promptly to the location of final placement.

3.3.2 Avoid excessive handling of the LDCCF.

3.3.3 Place LDCCF in lifts in accordance to specification, unless otherwise recommended by CELLULAR CONCRETE SOLUTIONS and approved by the engineer.

3.3.4 The final surface finish shall be within + 0.1 feet of the plan elevation.

3.3.5 Backfill or other unusual loadings on the LDCCF shall not be permitted until the LDCCF has attained a compressive



4. TESTING

4.1 WET DENSITY

- 4.1.1 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.
- 4.1.2 At hourly intervals during placing, monitor the density and adjust as necessary to maintain the specified cast density.

5. MEASUREMENT AND PAYMENT

5.1 MEASUREMENT

- 5.1.1 Lightweight Low Density Cellular Concrete shall be measured on a cubic yard basis.

5.2 PAYMENT

- 5.2.1 Payment for LDCCF shall be made at contract unit prices for quantities determined as specified above

ITEM NO.	PAYMENT ITEM	UNIT
	LDCCF	C.Y.

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