



**BUILDING CODE COMPLIANCE OFFICE**  
METRO-DADE FLAGLER BUILDING  
140 WEST FLAGLER STREET, SUITE 1603  
MIAMI, FLORIDA 33130-1563  
(305) 375-2901 FAX (305) 375-2908

**CONTRACTOR LICENSING SECTION**  
(305) 375-2527 FAX (305) 375-2558

**CONTRACTOR ENFORCEMENT DIVISION**  
(305) 375-2966 FAX (305) 375-2908

**PRODUCT CONTROL DIVISION**  
(305) 375-2902 FAX (305) 372-6339

**PRODUCT CONTROL NOTICE OF ACCEPTANCE**

**Cellular Concrete LLC**  
**220 W. Westfield Avenue**  
**Roselle Park ,NJ 07204**

Your application for Notice of Acceptance (NOA) of:

**Mearlcrete Insulating Concrete Roof Decks**

under Chapter 8 of the Code of Miami-Dade County governing the use of Alternate Materials and Types of Construction, and completely described herein, has been recommended for acceptance by the Miami-Dade County Building Code Compliance Office (BCCO) under the conditions specified herein.

This NOA shall not be valid after the expiration date stated below. BCCO reserves the right to secure this product or material at any time from a jobsite or manufacturer's plant for quality control testing. If this product or material fails to perform in the approved manner, BCCO may revoke, modify, or suspend the use of such product or material immediately. BCCO reserves the right to revoke this approval, if it is determined by BCCO that this product or material fails to meet the requirements of the South Florida Building Code.

The expense of such testing will be incurred by the manufacturer.

Raul Rodriguez  
Chief Product Control Division

**ACCEPTANCE NO.: 01-0718.11**  
**EXPIRES: 10/19/2003**

**THIS IS THE COVERSHEET, SEE ADDITIONAL PAGES FOR SPECIFIC AND GENERAL  
CONDITIONS  
BUILDING CODE & PRODUCT REVIEW COMMITTEE**

This application for Product Approval has been reviewed by the BCCO and approved by the Building Code and Product Review Committee to be used in Miami-Dade County, Florida under the conditions set forth above.

Francisco J. Quintana, R.A.  
Director  
Miami-Dade County  
Building Code Compliance Office

**APPROVED: 08/23/2001**

**ROOFING ASSEMBLY APPROVAL**

**Category:** Roofing  
**Sub-Category:** Lightweight Insulating Concrete

Approval Date: August 23, 2001

Expiration: October 19, 2003

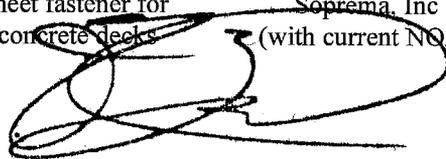
**Materials:** Aggregate  
**Maximum Design Pressure** -262.5 psf.

**TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:**

<u>Product</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>
Mearlcrete Foam Concentrate	various	ASTM C 869	Foaming agents used in making preformed foam for use in cellular lightweight concrete.

**TRADE NAMES OF PRODUCTS MANUFACTURED BY OTHERS:**

<u>Product</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>	<u>Manufacturer</u>
Expanded Polystyrene	Min. 1" x 2' x 4' 1.0 pcf density	ASTM C 578	Expanded polystyrene with a minimum of six - 3" diameter holes (3.7% of surface area) to provide monolithic bonding of topping to board slurry coat.	Generic (with current NOA)
Portland Cement	various	ASTM C 150	Portland Cement	Generic
C-R Base Felt Fastener and C-R Base Sheet Disc	1.75" Standard 1.2" NVS	PA 114 PA 117(A) PA 117(B)	Steel base sheet fastener for lightweight concrete with integral plate	Olympic Mfg. Group (with current NOA)
FM-90 Base Ply Fastener	1.7" Standard	PA 114 PA 117(A) PA 117(B)	Steel base sheet fastener for lightweight concrete with 2.7" integral plate	ES Products Inc. (with current NOA)
FM-45 Base Ply Fastener and FM-30 disc	1" NVS	PA 114 PA 117(A) PA 117(B)	Steel base sheet fastener for lightweight concrete with separate 2.7" round plate	ES Products Inc. (with current NOA)
Base-Lok Fastener	1.75" long 3" head diameter	PA 117(A) PA 117(B)	Nylon 66, screw-in base sheet fastener for lightweight concrete decks	Simplex, Inc. (with current NOA)
Lite Weight Concrete Fastener	1.76" long	PA 114 PA 117(A) PA 117(B)	Steel base sheet fastener for lightweight concrete decks	ITW Buildex, Inc. (with current NOA)
Tri-Fix Fastner	3" diameter	PA 114 PA 117(A) PA 117(B)	Steel base sheet fastener for lightweight concrete decks	Soprema, Inc (with current NOA)



Frank Zuloaga, RRC  
 Roofing Product Control Examiner

**EVIDENCE SUBMITTED:**

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Test Name/Report</u>	<u>Date</u>
Factory Mutual Research Corporation	J.I. DOAO.AM	Uplift Resistance (FMRC 4454 - PA 114)	09/28/99
Factory Mutual Research Corporation	J.I. 3001331	Uplift Resistance (FMRC 4454 - PA 114)	12/31/99
Exterior Research & Design, LLC. - Trinity Engineering IRT of South Florida	#4852.07.96-1	Uplift Resistance (PA 114, Appendix D)	07/10/96
	01-005	PA 114	03/13/01

**APPROVED APPLICATIONS:**

*Deck Type 1: Lightweight Insulating Concrete*  
*System A: Cellular*  
*Cast Density Range: 34 - 50 PCF*  
*Dry Density Range: 27 - 40 PCF*  
*28 Day Compressive Strength Range: 200 - 350 psi depending on membrane type*  
*Minimum Characteristic Resistance*  
*Force with Approved Fasteners: Cure TimeMCRF (lbf)*

2-4 Days	46 lbf
15 Days	77 lbf
21 Days	112 lbf
28 Days	141 lbf

*Components:* Portland Cement ASTM C 150: 94 lbs. bag  
 Foaming Agent ASTM C 869: 40:1 Water/Concentrate  
 3.0 ft<sup>3</sup> preformed foam  
 Water (max chloride level 250 ppm): 5 gal./sack

Compressive Strength (psi)	Cast Density Range (pcf)	Dry Density Range (pcf)	Proportions for a Cubic Yard			
			Foam (ft <sup>3</sup> )	Cement Range (lbs)	Mixing Water Range (lbs)	Minimum Thickness (inches)
200 - 249	32 - 40	22 - 30	19.70 - 17.70	590 - 730	267 - 350	2
250 - 350	42 - 50	32 - 40	17.70 - 15.60	730 - 870	350 - 432	2



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**Deck Type 1: Lightweight Insulating Concrete**

**Application:** Materials shall be mixed in a horizontal paddle drum mixer and pumped to the roof at the indicated density, and in compliance with manufacturer specifications. Cast densities shall be checked and recorded as it comes out of the hose, at a minimum interval of one-hour.

**Polystyrene**

**Insulation:** Minimum Density: 1.0 pcf  
 Minimum Dimensions: 1" x 2' x 4'  
 Key Holes and Slots: Six 3" diameter holes per 2' x 4' board (3.7% of surface area) minimum required to provide monolithic bonding of topping board to bond (with current NOA).

Rigid insulation panels shall be placed in a minimum 1/8" slurry-coat of insulating concrete, while the material is still in a plastic state and shall be covered with a minimum 2" topcoat cast within the same working day of placement of the insulation panels.

Alternately, the slurry coat and insulation panels shall be allowed to cure for 24 hours prior to the application of the topcoat. For steel deck applications the slurry coat and insulation boards shall be left undisturbed to cure for a minimum of 24 hours before the application of the topcoat. See Maximum Design Pressure listing herein.

The insulating concrete topcoat shall be screeded to a smooth finish surface free of ridges and at the proper thickness and slope prior to the installation of the roofing membrane.

**SUBSTRATE REQUIREMENTS:**

**Note:** Refer to Maximum Design Pressures Section of this Notice of Acceptance for specific substrate or substrate treatment requirements.

**New Construction:**

**Concrete:** Structurally designed in compliance with applicable Building Code.

**Steel Deck:** Minimum 22 gage galvanized G-90 attached to supports in compliance with applicable Building Code. (See Table 2 herein for maximum design pressures and attachments)

**Existing Construction:**

**Concrete:** Broom cleaned and free of any materials or covering that may impede bonding. Substrate shall be in compliance with applicable Building Code.

**Gravel Surfaced BUR:** Loose gravel shall be removed, and adhesion of existing roof system shall be tested in compliance with TAS 124 to meet the design pressure requirements determined in compliance with applicable Building Code.



*Smooth Surface BUR:* adhesion of existing roof system shall be tested in compliance with TAS 124 to meet the design pressure requirements determined in compliance with applicable Building Code.

*Granule Surface Cap:* adhesion of existing roof system shall be tested in compliance with TAS 124 to meet the design pressure requirements determined in compliance with applicable Building Code.

**MAXIMUM DESIGN PRESSURES:**

Table 2 NEW CONSTRUCTION				
Substrate	Substrate Treatment	Min. Compressive Strength (psi)	Polystyrene Insulation Board	Maximum Design Pressure (psf.)
Min. 22 ga , type B attached to steel supports spaced 5 ft	none	300	Optional min. 1" thick min. 1.0 pcf	45
Min. 22 ga , type B Grade E slotted deck, attached to steel supports spaced 5 ft o.c. with ITW-Buildex Traxx-5 fasteners, fastened 6" o.c. Side-laps fastened 18" on center.	Hydrostop "BarrierGard" applied to the steel deck at a rate of 15 sq. ft per gallon	300	min. 1" thick min. 1.0 pcf Apache Corrugated E.P.S.	67.5
Min. 22 ga , type B Grade E slotted deck, welded to steel supports spaced 5 ft o.c. with 3/8" weld washers or with ITW-Buildex Traxx-5 fasteners, at a spacing of 6" o.c. Side-laps fastened 18" on center with ITW-Buildex Traxx 1 #10 self tapping screws.	Steel deck shall be washed with distilled vinegar prior to pour.	300	min. 1" thick min. 1.0 pcf Apache Corrugated E.P.S.	52.5
Min. 22 ga , type B Grade E slotted deck, welded to steel supports spaced 5 ft o.c. with 3/8" weld washers or with ITW-Buildex Traxx-5 fasteners, at a spacing of 6" o.c. Side-laps fastened 18" on center with ITW-Buildex Traxx 1 #10 self tapping screws.	Steel deck shall be primed with Mearl Bonding agent.	300	min. 1" thick min. 1.0 pcf Apache Corrugated E.P.S.  Insulation shall be allowed to sit undisturbed for 24 hours prior to topcoat pour.	75



Min. 22 ga , Wheeling Type, Grade E slotted deck, welded to steel supports spaced 6 ft o.c. with 5/8" puddle welds and washers or with ITW-Buildex Traxx-5 fasteners, at a spacing of 6" o.c. Side-laps fastened 12" on center with ITW-Buildex Traxx 1 #10 self tapping screws.	none	300	<b>Optional:</b> Min 1" thick Min. 1.0 pcf	90
<b>NEW CONSTRUCTION OR REROOF (TEAR-OFF)</b>				
<b>Substrate</b>	<b>Substrate Treatment</b>	<b>Min. Compressive Strength</b>	<b>Polystyrene Insulation Board</b>	<b>Maximum Design Pressure (psf.)</b>
concrete	none	200 psi	min. 1" thick min. 1.0 pcf	90.0
concrete	none	200 psi	none	152.5
concrete	Deck shall either be covered with an asphaltic vapor retarder or moistened with water. No standing water shall be present at time of pour.	200 psi	min. 1" thick min. 1.0 pcf Apache Corrugated E.P.S.	270
<b>RECOVER</b>				
<b>Substrate</b>	<b>Substrate Treatment</b>	<b>Min. Compressive Strength</b>	<b>Polystyrene Insulation Board</b>	<b>Maximum Design Pressure</b>
gravel surface BUR*	none	200 psi	none	165.0 psf
gravel surface BUR*	none	200 psi	min. 1" thick min. 1.0 pcf	90.0 psf
smooth surface BUR	none	200 psi	none	45.0 psf
smooth surface BUR	none	200 psi	min. 1" thick min. 1.0 pcf	45.0 psf
mineral surface cap sheet*	none	200 psi	none	82.5 psf
mineral surface cap sheet*	none	200 psi	min. 1" thick min. 1.0 pcf	82.5 psf
* Existing BUR over concrete deck substrate				

**Note:** Maximum Design Pressures noted herein shall be used in conjunction with those maximum design pressures published in the Roof Assembly Product Control Notice of Acceptance for Accepted Systems over lightweight concrete decks.



**GENERAL LIMITATIONS:**

1. Any excess water on the lightweight concrete shall be removed prior to roof installation.
  1. Applicator shall maintain a job log and make it available to the Building Official upon request. The job log shall contain cast densities recordings taken at a minimum interval of one-hour.
    - a. Cast densities shall be measured with calibrated scale accurate from 1 to 50 lbs. The scale shall display weight in increments of  $\frac{1}{4}$  lb. and be accurately calibrated to  $\frac{1}{16}$  lb.
    - b. The measuring bucket shall be of 5 quarts or larger
  2. Lightweight insulating concrete installation shall demonstrate its suitability to perform as a satisfactory substrate during the "walkability inspection". If the deck or a portion of the deck is determined to be out of compliance, the Building Official may call for further testing (if applicable for the roof system) to confirm fastener spacing or provide data for the roof system manufacturer to calculate a new fastener pattern. Fastener testing (if applicable for the roof system) shall be required. Any areas where fasteners will not hold a minimum 40 lbf. after 5 days of cure shall be removed and recast.
  3. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value as calculated in conjunction with the maximum design value listed within specific roof membrane manufacturer's NOA. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117. If continued noncompliance is observed and the roof deck and associated roof system cannot be corrected based on additional testing and attachment calculations, the Building Official may call for the removal of all or portions of the deck.
  4. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant
  5. Roofing contractor shall consult with roofing assembly manufacturer for compatibility with all surface coatings or treatments listed in this NOA.
  6. Direct-adhered single ply systems shall be installed in strict compliance with membrane manufacturer's specifications and roof assembly manufacturer NOA. All coatings or surface preparation materials applied to the lightweight insulating concrete shall be listed as an approved interface material with the roof assembly manufacturer.
  7. Maximum Design Pressures noted in this NOA shall be used in conjunction with the maximum design pressures listed in the roof assembly manufacturer's NOA.
  8. For steel deck applications the slurry coat and insulation boards shall be left undisturbed to cure for a minimum of 24 hours before the application of the topcoat.

**NOTICE OF ACCEPTANCE STANDARD CONDITIONS**

- 1 Renewal of this Acceptance (approval) shall be considered after a renewal application has been filed and the original submitted documentation, including test supporting data, engineering documents, are no older than eight (8) years.
- 2 Any and all approved products shall be permanently labeled with the manufacturer's name, city, state, and the following statement: "Miami-Dade County Product Control Approved", or as specifically stated in the specific conditions of this Acceptance.
- 3 Renewals of Acceptance will not be considered if:
  - a) There has been a change in the South Florida Building Code affecting the evaluation of this product and the product is not in compliance with the code changes;
  - b) The product is no longer the same product (identical) as the one originally approved;
  - c) If the Acceptance holder has not complied with all the requirements of this acceptance, including the correct installation of the product;
  - d) The engineer who originally prepared, signed and sealed the required documentation initially submitted, is no longer practicing the engineering profession.
- 4 Any revision or change in the materials, use, and/or manufacture of the product or process shall automatically be cause for termination of this Acceptance, unless prior written approval has been requested (through the filing of a revision application with appropriate fee) and granted by this office.
- 5 Any of the following shall also be grounds for removal of this Acceptance:
  - a) Unsatisfactory performance of this product or process;
  - b) Misuse of this Acceptance as an endorsement of any product, for sales, advertising or any other purposes.
- 6 The Notice of Acceptance number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the Notice of Acceptance is displayed, then it shall be done in its entirety.
- 7 A copy of this Acceptance as well as approved drawings and other documents, where it applies, shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at all times. The copies need not be resealed by the engineer.
- 8 Failure to comply with any section of this Acceptance shall be cause for termination and removal of Acceptance.
- 9 This Acceptance contains pages 1 through 8

**END OF THIS ACCEPTANCE**

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Frank Zuloaga, RRC  
Roofing Product Control Examiner