



BUILDING CODE COMPLIANCE OFFICE
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PRODUCT CONTROL DIVISION
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PRODUCT CONTROL NOTICE OF ACCEPTANCE

Celcore, Inc.
775 US Hwy 70 West
Black Mountain ,NC 28711

Your application for Notice of Acceptance (NOA) of:

Lightweight Insulating Concrete

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.: 00-0905.01
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: 10/19/2000



ROOFING ASSEMBLY APPROVAL

Category: Roofing
Sub-Category: Lightweight Insulating Concrete

Approval Date: October 19, 2000

Expiration: October 19, 2003

Materials: Aggregate
Maximum Design Pressure -262.5 psf.
Fire Classification:

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

<u>Product</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>
Celcore Foam Concentrate	various	ASTM C 869	Foaming agents used in making preformed foam for use in lightweight cellular concrete.
Celcore MF Concentrate	various	ASTM C 869	Foaming agents used in making preformed foam for use in lightweight cellular concrete.
Celcore PVA Curing Compound	various		Emulsion curing agent

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 8 2¼" holes (3.7% of surface area) to provide monolithic bonding of topping to board slurry.	Generic (with current NOA)
Portland Cement	various	ASTM C 150	Portland Cement	generic
C-R Base Felt and Base Sheet Disc	1.75" Standard C-R	PA 114	Steel base sheet fastener for light weight concrete with integral plate	Olympic Mfg. Group
FM-90 Base Ply Fastener	1.7" Standard	PA 114	Steel base sheet fastener for light weight concrete with 2.7" integral plate	ES Products Inc.



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<u>Product</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>	<u>Manufacturer</u>
GAF GAFTITE	1.75" Standard	PA 114	Steel base sheet fastener for light weight concrete with integral plate	GAF Materials Corp.
ITW Buildex	1.7" Standard	PA 114	Steel base sheet fastener for light weight concrete with integral plate	ITW Buildex
Tri-Fix	1.7" Standard	PA 114	Steel sheet fastener for lightweight concrete with 3" steel plate.	Soprema

EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Test Name/Report</u>	<u>Date</u>
Factory Mutual Research Corporation	Wind Uplift Classification	J.I. OM2A6.AM	03/10/86
		J.I. OP3A6.AM	03/15/89
		J.I. 2P3A9.AM	03/07/89
Factory Mutual Research Corporation	Wind Uplift Classification (4454)	J.I. 1Z5A6.AM	10/25/96
Factory Mutual Research Corporation	Wind Uplift Classification	J.I. 2B8A4.AM	07/02/97
Factory Mutual Research Corporation	Wind Uplift Classification	Current Approval Guide	1997
Underwriters Laboratories, Inc.	Fire and Wind Uplift Classification	R11599(N)	05/16/86
Factory Mutual Research Corporation	Wind Uplift Classification	J.I. 3002416	05/06/99



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Deck Type 2I: Steel / Concrete

Deck Description: 18-22 ga. steel
26 ga. Steel
2500-psi structural concrete or concrete plank

System A: Cellular

Cast Density Range: Minimum 36 PCF

Dry Density Range: Minimum 26 PCF

28 Day Compressive Strength Range: 175 - 350 psi

Minimum Characteristic Resistance Force with Approved Fasteners: 2-4 Days:46 lbf
15 Days:77 lbf
21 Days:112 lbf
28 Days:141 lbf

Components:

Portland Cement ASTM C 150 7- 94 lb. sacks; see table below
Foaming Agent ASTM C 869: (40:1 Water/Concentrate) 3.5 lbs/ft³ preformed foam
Water (max chloride level 250 ppm): 5 gal./sack

Wet densities and dry densities using the following range of proportioned ingredients:

Table 1						
<u>PSI Range</u>	<u>Wet Density Range</u>	<u>Dry Density Range</u>	<u>Foam</u>	<u>Cement Range</u>	<u>Mixing Water Range</u>	<u>Min. Thickness</u>
160-249	30-40 pcf	22-34.5 pcf	19.70-17.70 (ft ³ /yd) ³	663-730 lbs	267-350 lbs	2"
250-350	36-50 pcf	30-40 pcf	17.70-15.60 (ft ³ /yd) ³	730-870 lbs	350-432 lbs	2"



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'
- Holes and slots for keying: 8 - 2¼" holes per 2' x 4' board (3.7% of surface area) minimum required to provide monolithic bonding of topping board to slurry.

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. (With current NOA)

Insulation panels and slurry coat shall be left to cure overnight before the installation of the topcoat.

The following day a 2" minimum topcoat shall be poured, and screeded to a smooth finish surface free of ridges and at the proper thickness and slope prior to the installation of the roofing membrane.

After setting of the topcoat to support foot traffic, Celcore PVA compound shall be applied at a minimum rate of 300 ft² per gallon (7.2m²/l).

Substrate Requirements:

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

New Construction:

Steel: Minimum 26 ga. galvanized G-90 attached to supports in compliance with Chapter 26 and 28 of the South Florida Building Code. (See maximum design pressures for limitations on deck gauge.)

Concrete: Structurally designed in compliance with Chapter 25 of the South Florida Building Code.

Existing Construction:

Concrete: Broom cleaned and free of any materials or covering that may impede bonding. Substrate shall be in compliance with Chapter 25 of the South Florida Building Code.

Gravel Surfaced BUR: Loose gravel shall be removed, and adhesion of existing roof system shall be tested in compliance with Miami-Dade County



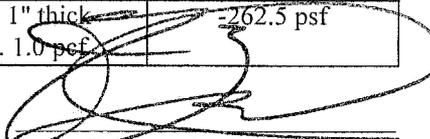
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Protocol PA 124 to meet the design pressure requirements determined in compliance with Chapter 23 of the South Florida Building Code.

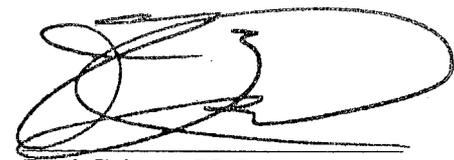
Smooth Surface BUR: Adhesion of existing roof system shall be tested in compliance with Miami-Dade County Protocol PA 124 to meet the design pressure requirements determined in compliance with Chapter 23 of the South Florida Building Code.

Granule Surface Cap: Adhesion of existing roof system shall be tested in compliance with Miami-Dade County Protocol PA 124 to meet the design pressure requirements determined in compliance with Chapter 23 of the South Florida Building Code.

Table 2: Maximum Design Pressures Applications				
NEW CONSTRUCTION FOR ADHERED SINGLE PLY SYSTEMS				
Substrate	Substrate Treatment	Min. Compressive Strength	Apache Holey Board	Maximum Design Pressure
18-22 ga. vented steel	Steel deck shall be secured to ¼" thick structural supports spaced a maximum of 4 ft on centers with ITW Buildex Traxx/5 at the bottom of each rib (6" o/c.)	200 psi	min. 1" thick min. 1.0 pcf	-90 psf
18-22 ga. vented steel	Steel deck shall be secured to ¼" thick structural supports spaced a maximum of 5 ft on centers with ITW Buildex Traxx/5 at the bottom of each rib (6" o/c.)	200 psi	min. 1" thick min. 1.0 pcf	-82.5 psf
18-22 ga. vented steel	Steel deck shall be secured to structural supports spaced a maximum of 5 ft on centers with ½ puddle welds and washers.	200 psi	min. 1" thick min. 1.0 pcf	-75 psf
18-22 ga. vented steel	Steel deck shall be secured to ¼" thick structural supports spaced a maximum of 6 ft on centers with ITW Buildex Traxx/5 at the bottom of each rib (6" o/c.)	200 psi	min. 1" thick min. 1.0 pcf	-60 psf
concrete	none	200 psi	min. 1" thick min. 1.0 pcf	-262.5 psf


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NEW CONSTRUCTION OR REROOF (TEAR-OFF) BUR or Modified Systems				
Substrate	Substrate Treatment	Min. Compressive Strength	Apache Holey Board	Maximum Design Pressure
18-22 ga. vented steel	Steel deck shall be secured to structural supports spaced a maximum of 5 ft on centers with ½ puddle welds and washers.	200 psi	min. 1" thick min. 1.0 pcf	-60psf
18-22 ga. vented steel	Steel deck shall be secured to structural supports spaced a maximum of 5 ft on centers with ½ puddle welds and washers.	300 psi	min. 1" thick min. 1.0 pcf	-75psf
26 ga. vented steel	Steel deck shall be secured to supports spaced a maximum of 5 ft on centers with ½" puddle welds and washers at every other corrugation. Deck side laps fastened with ITW Buildex Traxx/1 at midspan.	200 psi	min. 1" thick min. 1.0 pcf	-52.5 psf
18-22 ga. vented steel	Steel deck shall be secured to supports spaced a maximum of 6 ft on centers with ½" puddle welds at every corrugation (6" o.c.). Deck side laps fastened with ITW Buildex Traxx/1 at midspan.	200 psi	min. 1" thick min. 1.0 pcf	-60 psf
concrete	none	200 psi	none	-75 psf
concrete	none	200 psi	min. 1" thick min. 1.0 pcf	-75 psf

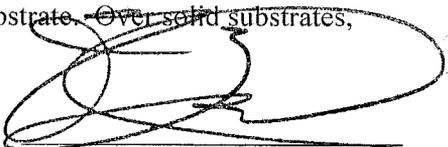


RECOVER				
gravel surface BUR	none	300 psi	none	-75 psf
gravel surface BUR	none	300 psi	min. 1" thick min. 1.0 pcf	-75 psf
mineral surface cap sheet	none	300 psi	none	-75 psf
mineral surface cap sheet	none	300 psi	min. 1" thick min. 1.0 pcf	-75 psf
gravel surface BUR	none	300 psi	none	-75* psf
gravel surface BUR	none	300 psi	min. 1" thick min. 1.0 pcf	-75* psf
mineral surface cap sheet	none	300 psi	none	-135* psf
mineral surface cap sheet	none	300 psi	min. 1" thick min. 1.0 pcf	-135* psf
smooth surface BUR	none	300 psi	none	-262.5* psf
smooth surface BUR	none	300 psi	min. 1" thick min. 1.0 pcf	-262.5* psf
smooth surface cap sheet	none	300 psi	none	-262.5* psf
smooth surface cap sheet	none	300 psi	min. 1" thick min. 1.0 pcf	-262.5* psf
* Fully adhered single-ply applications only				


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GENERAL LIMITATIONS:

1. Excess water on the lightweight concrete shall be removed prior to roof installation.
2. 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.
3.
 - a. Cast densities shall be measured with calibrated scale accurate from 1 to 50 lbs. The scale shall display weight in increments of ¼ lb. and be accurately calibrated to 1/16 lb.
 - b. The measuring bucket shall be of 5 quarts or larger
4. Lightweight insulating concrete installation shall demonstrate its suitability to perform as a satisfactory substrate during "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.
5. 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 a specific roof membrane manufacturers 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 Engineer or Architect may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Miami-Dade County Protocol TAS 105 and calculations in compliance with Miami-Dade Roofing Application Standard RAS 117.
6. Contractor shall consult with roofing system manufacturer for compatibility with all surface coatings or treatments listed in this NOA.
7. All coatings or surface preparation materials applied to the lightweight concrete shall be listed as an approved interface material with the roof membrane manufacturer.
8. Direct-adhered single ply systems shall be installed in strict compliance with membrane manufacturer's specifications and the Miami-Dade County Notice of Acceptance.
9. Maximum Design Pressures noted in this NOA shall be used in conjunction with those maximum design pressures published in the Roof Assembly Product Control Notice of Acceptance for Approved Assembly over lightweight concrete decks.
10. A slurry coat lightweight insulating concrete shall be applied with insulation boards immediately adhered in the minimum 1/8" slurry coat. Slurry coat and insulation boards shall be left undisturbed to cure overnight before the application of the topcoat. If installation is interrupted due to inclement weather or other situations beyond the control of the contractor, the installed insulation board shall be inspected to confirm adhesion to the substrate. ~~Over solid substrates,~~ topping installation shall not be delayed over 24 hours.



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 10.

END OF THIS ACCEPTANCE



Frank Zuloaga, RRC
Roofing Product Control Examiner