



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)  
BOARD AND CODE ADMINISTRATION DIVISION

**MIAMI-DADE COUNTY  
PRODUCT CONTROL SECTION**

11805 SW 26 Street, Room 208  
Miami, Florida 33175-2474  
T (786) 315-2590 F (786) 315-2599

[www.miamidade.gov/economy](http://www.miamidade.gov/economy)

**NOTICE OF ACCEPTANCE (NOA)**

**Structural Green, Inc.**  
271 W 59 Street  
Hialeah, FL 33012

**SCOPE:**

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER- Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

**DESCRIPTION:** Structural Green Composite Roof Panel System with EPS Core

**APPROVAL DOCUMENT:** Drawing No. SG.R, titled "Structural Green Composite Roof Panel System with EPS Core", sheets 1 through 5 of 5, prepared by Structural Green, Inc., dated April 12, 2021, signed and sealed by Juan Jose Santandreu, P.E., on April 15, 2021 bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and the expiration date by the Miami-Dade County Product Control Section

**MISSILE IMPACT RATING:** Large and Small Missile Impact Resistant

**LABELING:** Each panel shall bear a permanent label with the manufacturer's name or logo, city, state and the following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

**RENEWAL** of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

**TERMINATION** of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

**ADVERTISEMENT:** The NOA 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 NOA is displayed, then it shall be done in its entirety.

**INSPECTION:** A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA #17-1026.03 and consists of this page 1, evidence submitted page E-1 as well as approval document mentioned above.

The submitted documentation was reviewed by **Helmy A. Makar, P.E., M.S.**



*Helmy A. Makar*  
06/03/2021

NOA No. 21-0419.09  
Expiration Date: 08/09/2023  
Approval Date: 06/03/2021

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 17-1026.03**

**A. DRAWINGS**

1. *Drawing No. SG.R, titled "Structural Green Composite Roof Panel System with EPS Core", sheets 1 through 5 of 5, prepared by Structural Green, Inc., dated July 17, 2018, signed and sealed by Juan Jose Santandreu, P.E., on July 31, 2018.*

**B. TESTS**

1. *Test report on Large Missile Impact Test, Cyclic Wind Pressure Test, and Uniform Static Air Pressure on Structural Green Composite Wall Panel System, prepared by FTL, Report #8265, dated 02/15/2017, signed and sealed by Idalmis Ortega, P.E.*

**C. CALCULATIONS**

1. *Calculations titled "Concrete Slender Roof", pages 1 through 9 of 9, prepared by Juan Jose Santandreu, P.E., signed and sealed by Juan Jose Santandreu, P.E.*

**D. MATERIAL CERTIFICATIONS**

1. *None.*

**E. QUALITY ASSURANCE**

1. *By Miami-Dade County Department of Regulatory and Economic Resources.*

**F. STATEMENTS**

1. *FBC, 2017 Edition Compliance Letter, issued by Juan Jose Santandreu, P.E., dated October 25, 2017, signed and sealed by Juan Jose Santandreu, P.E.*

**2. EVIDENCE SUBMITTED**

**A. DRAWINGS**

1. *Drawing No. SG.R, titled "Structural Green Composite Roof Panel System with EPS Core", sheets 1 through 5 of 5, prepared by Structural Green, Inc., dated April 12, 2021, signed and sealed by Juan Jose Santandreu, P.E., on April 15, 2021.*

**B. TESTS**

1. *None.*

**C. CALCULATIONS**

1. *None.*

**D. MATERIAL CERTIFICATIONS**

1. *None.*

**E. QUALITY ASSURANCE**

1. *By Miami-Dade County Department of Regulatory and Economic Resources.*

**F. STATEMENTS**

1. *FBC, 2020 Edition Compliance Letter, dated October 25, 2017, issued, signed and sealed by Juan Jose Santandreu, P.E.*



Helmy A. Makar, P.E., M.S.  
Product Control Section Supervisor  
NOA No. 21-0419.09  
Expiration Date: 08/09/2023  
Approval Date: 06/03/2021



# STRUCTURAL GREEN COMPOSITE SLAB ROOF PANEL SYSTEM WITH EPS CORE

Structural Green is an Ecological and Sustainable Building System which is consistent with the requirements of Florida Building Code 2017 and Rev 2020 Edition High Velocity Hurricane Zone and its rate pressures with the Maximum Design Pressure of -164.40 psf

Structural Green Panels is conceived as a continuous walls-roof system; nevertheless the wall and roof can be use in separated and independent ways.

Even though the Walls are not part of this NOA, both use common connections to the wall and roof, so that they would be part of Integral Construction Monolithic System.

The System is a lightweight structural truss prefabricated panels comprised of expanded polystyrene (EPS) and welded wire reinforcement (WWR) to each side of galvanized steel. The panels were built with Schnell technology and with the technical assistance of this company.

EPS geometry and additional reinforcements will vary depending on the overall design necessities.

The thickness of the Expanded Polystyrene (EPS) ranges from 3-1/8" up to 9" depending on architectural design requirements. The electro-welded wire reinforcement are 3" x 3" x 0.12" (3 mm)

The work is completed on site by applying a shotcrete finish through a mechanism of pneumatic discharge. Therefore once the shotcrete has been discharged there are no horizontally or vertically joints.

Structural Green Panel is designed to be installed for roof and floor applications.

## STANDARDS FOR DESIGN AND CODES

- 2020 Florida Building Code (FBC) [HVHZ]
  - Large Missile Impact Test, TAS 201-94
  - Static Air Pressure Test, TAS 202-94
  - Cyclic Wind Pressure Test, TAS 203-94
- ACI 506.2 Specifications for Shotcrete
- ACI 318 Building Code Requirements for Structural Concrete
- ICC-ES Schnell Report ESR-3429 (Revision January 2020)

## COMPONENTS SPECIFICATIONS

### - EPS

Miami-Dade County Approved

Density (Min)- 0.9 pcf

Flame Spread- 5 (ASTM E-84)

Smoke Development- 400 (ASTM E-84)

Self-Ignition Temperature- 878 °F (ASTM 01929)

Average R-Value (1" Thick) Hr-ft<sup>2</sup> °F/Btu- 3.85 (ASTM C518)

Odor Emission- NO

Fungus Resistant- bacterial not grow

### - GALVANIZED STEEL

The Galvanized steel welded wire-mesh must have a yield limit of 80,000 psi

11 Gauge (0.12") longitudinal, transversal as well as connector (3mm)

resulting a welded wire reinforcement of 3" x 3" x 0.12" (3 mm) in compliance with ASTM A 1064.

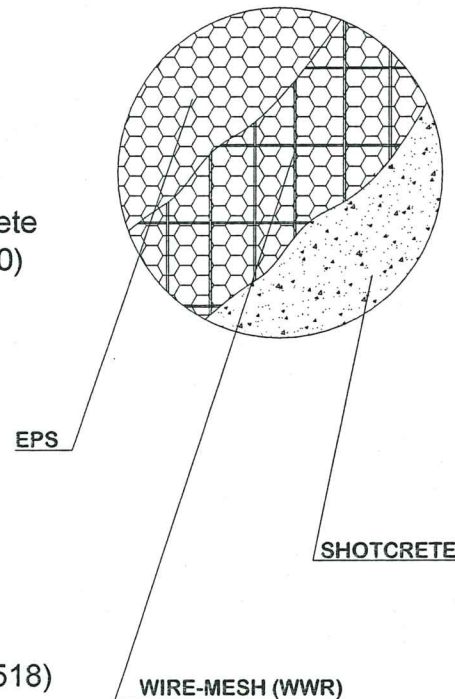
Welding must comply with AWS D1.4.

### - SHOTCRETE

The shotcrete as main element for Structural Green panels "SG" is completed by applying a layer on each face of projected structural shotconcrete by Spray Concrete Machine.

The required high-strength shotconcrete achieving 3,500 psi at 28 days is sprayed onto each side the panels at the jobsite to create monolithic wall with a maximum aggregate size of 1/4".

(3/16" maximum aggregate size it's recommended).



## GENERAL NOTES

- 1- This Roof panel system has been designed in compliance with ACI 506.2 and ACI 318
- 2- The weight of the Composite Walls Panels is 35 psf.
- 3- The weight of Roof Panel System with EPS Core Dead Load 45 psf. The allowable Maximum Superimposed Dead Load is 25 psf. The Total Dead Load of the system is therefore 70 psf .
- 4- The concrete slab must be treated according to roofing regulations ASTM D 4 treatment and any local code requirements.
- 5- A minimum safety factor "SF" of 2 was considerate according to FBC, TAS 202
- 6- With the objective of guaranteeing absolute waterproofing of the slab any material with the corresponding product approval certification will be applied.
- 7- The R1 reinforcement connectors wall-roof have the function of the perimeter junction around the entire contact zone between both elements.
- 8- The Reinforcements and Joint connections are common elements for Wall and Roof Panels..
- 9- The Architect and/or Register Engineer could add any additional reinforcement according to their criteria not required by this NOA considering future structural needs.
- 10- The selection of the kind of Roof will be selected according the Building dimensions, slope and other elements into the project shall be designed by Architect or Registered Engineer and reviewed by the Plans Examiner of the corresponding Building Department.
- 11- Any atypical design solutions that differ from what is reflected of this NOA, are not part of this approval and shall be prepared by Architect or Registered Engineer and Reviewed by the Plans Examiner of the corresponding Building Department.
- 12- The building's floors and mezzanine are not part of this NOA.
- 13- Dimensions and any other aspect of the project including but not limited to Electrical, Mechanical, Plumbing etc are no parts of this approval and it shall be prepared by Registered Engineer
- 14- The Panel Thickness tolerance is (+/-)1/4" considering the possible EPS fluctuations due to final drying after assembly process.
- 15- These roofs may be covered with any material according to state and / or local approvals regulations.

## DESIGN PRESSURE

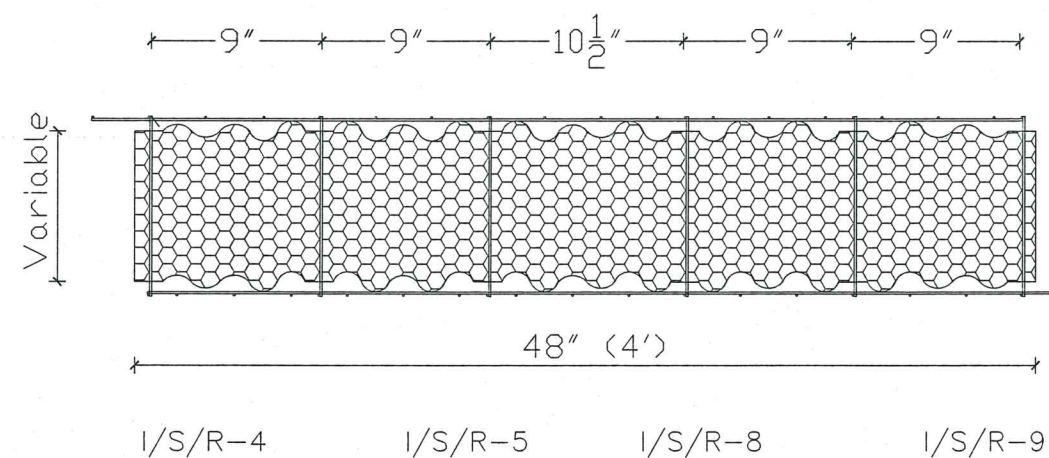
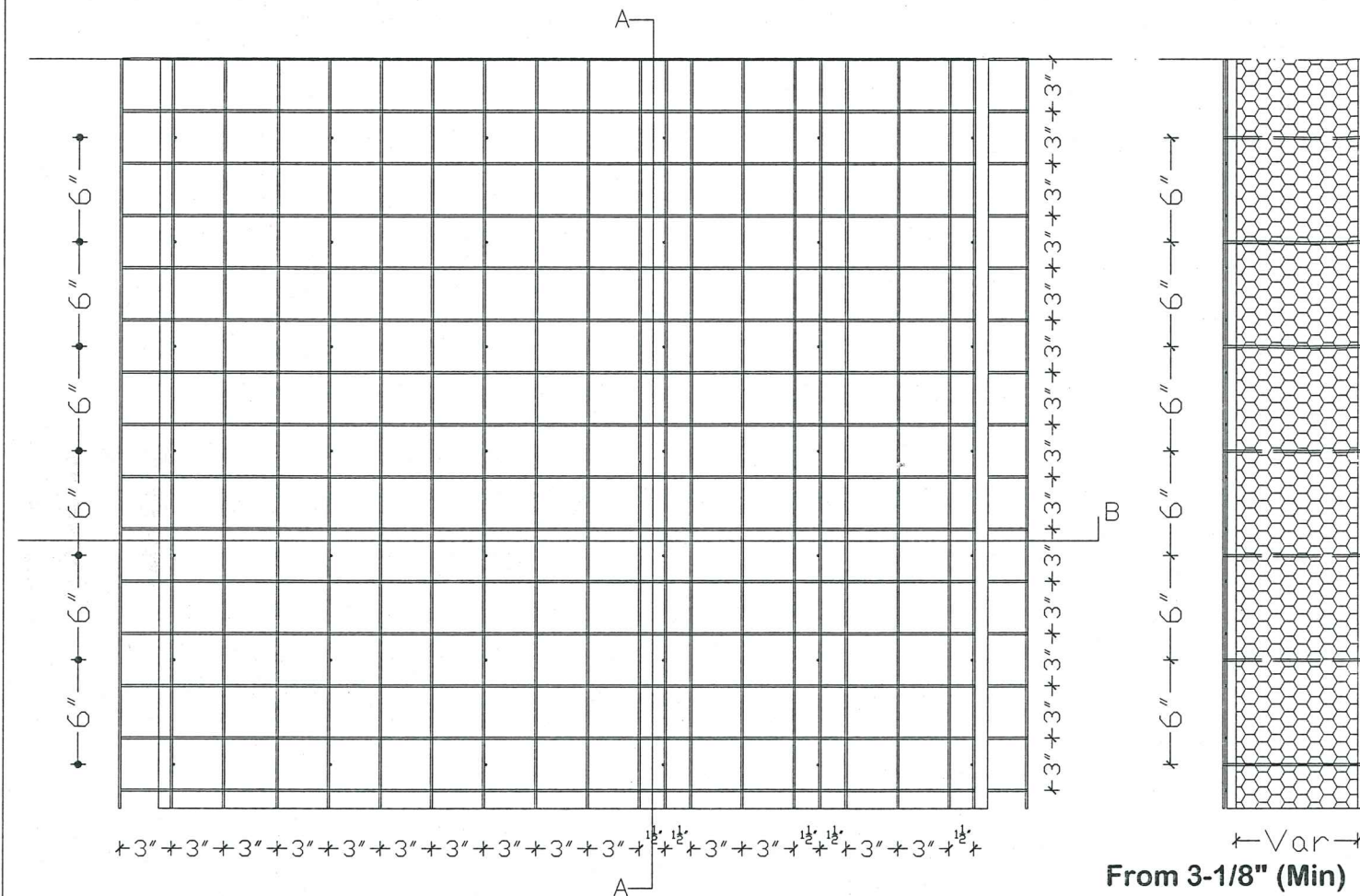
MAXIMUM DESIGN LOAD RATING = -164.4 PSF

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No 21-0419.09  
Expiration Date 08/09/2023  
By *H. G. A. M.*  
Miami Dade Product Control

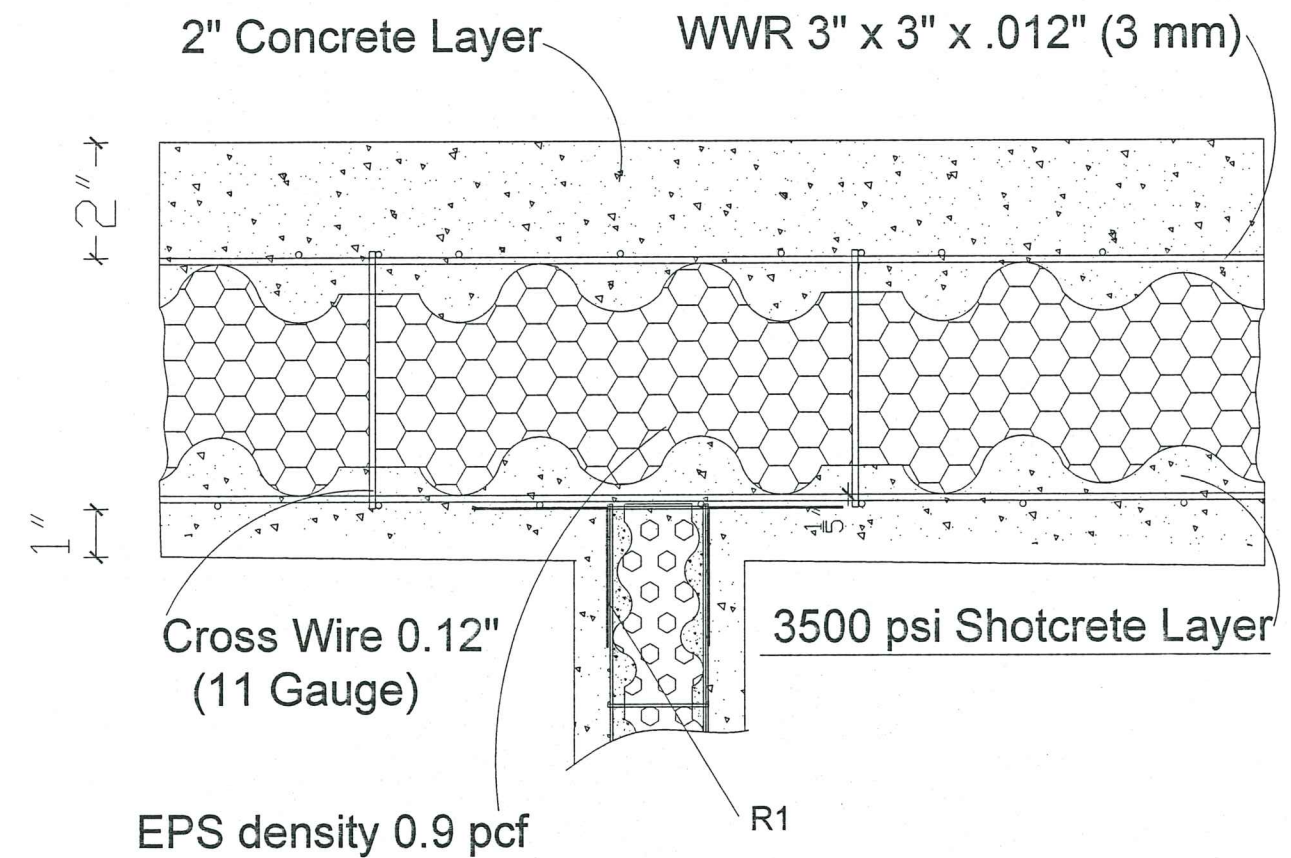
	
STRUCTURAL GREEN 271 W 59 St. Hialeah, FL. 33012 Ph: (305)972-2371 structuralgreen1@gmail.com	
REVISIONS	BY
04-12-21	J5
COMPOSITE STEEL-CONCRETE SLAB ROOF PANEL WITH EPS CORE	
SUSTAINABLE BUILDINGS	
MONOLITHIC CONSTRUCTION SYSTEM	
[HIGH VELOCITY HURRICANE ZONE]	
JUAN J. SANTANDREU CONSULTANT FL. LICENSE P.E. 67241	
Date	04-12-21
Scale	NOTE
Drawn	MM
Structural Green New generation of Sustainable Buildings	
Sheet no. 1 of 5	
SG.R-1	



## STRUCTURAL GREEN COMPOSITE SLAB ROOF PANEL SYSTEM WITH EPS CORE



### TYPICAL PANEL SECTION

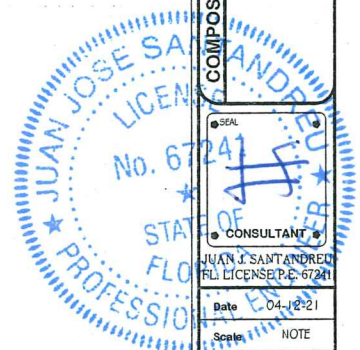


### TYPICAL ROOF CROSS SECTION

SG STANDARD SLAB PANEL			
LABEL	EPS CORE THICKNESS	WEIGHT lb/ft <sup>2</sup>	Rvalue hr ft <sup>2</sup> °F/Btu
I/S/R-4	4"	43.5	18.3
I/S/R-5	5"		21.6
I/S/R-8	8"		31.5
I/S/R-9	9"		34.7

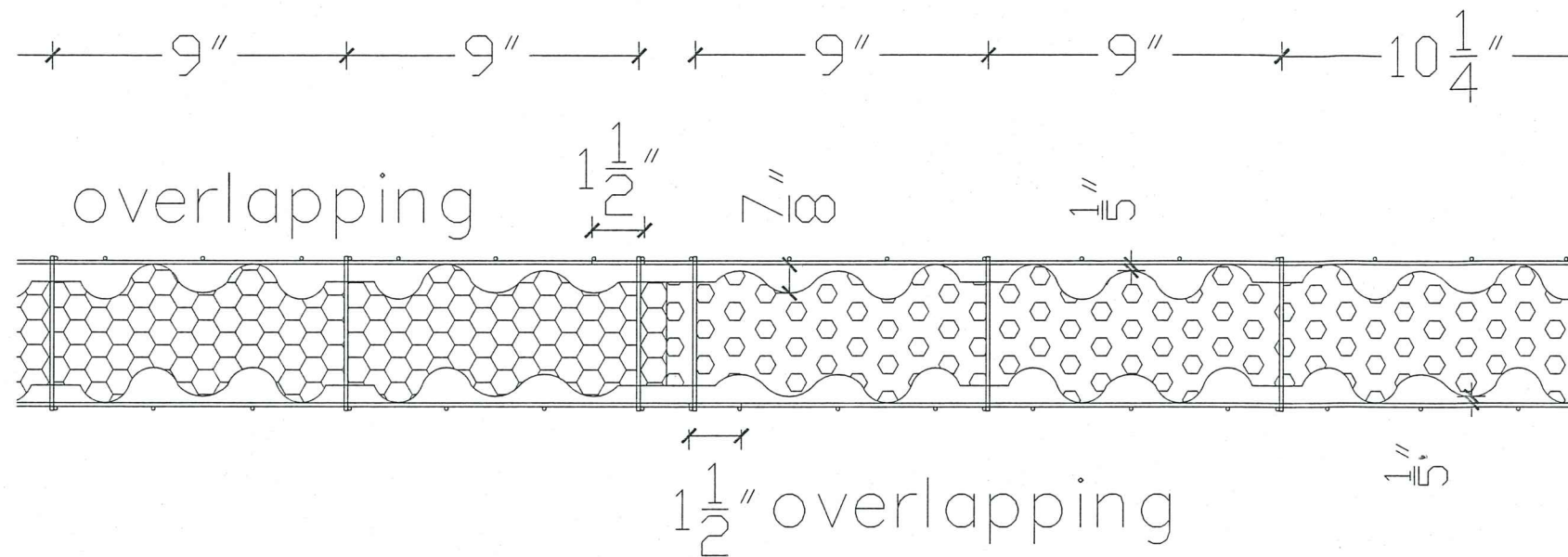
**Notes:** Rvalues are for information only and they are not part of this Product Approval

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No. 21-0419.09  
Expiration Date 08/09/2023  
By: *[Signature]*  
Miami Dade Product Control





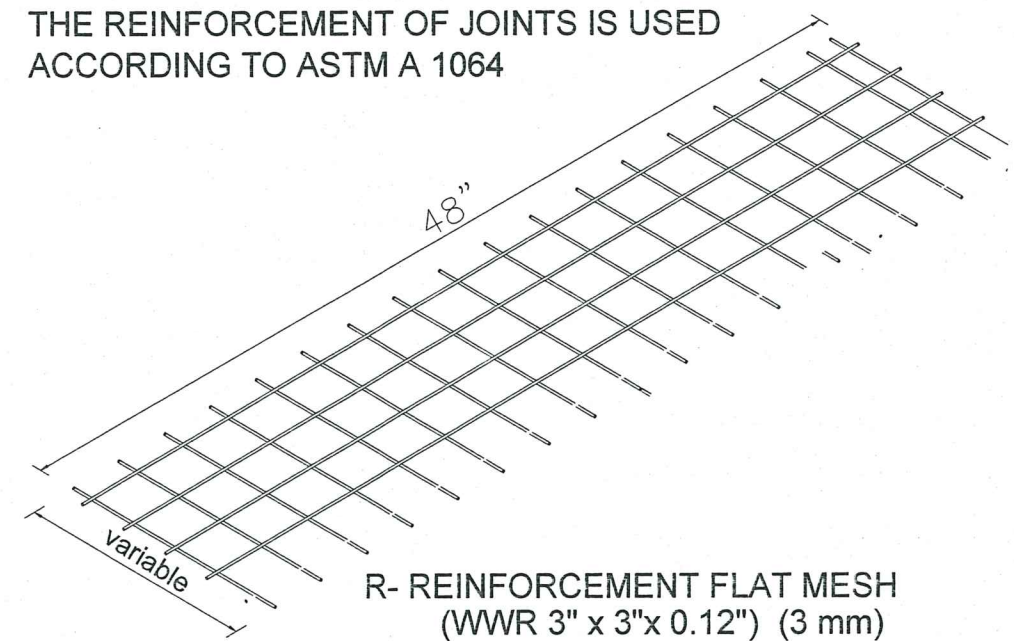
# STRUCTURAL GREEN COMPOSITE SLAB ROOF PANEL SYSTEM WITH EPS CORE



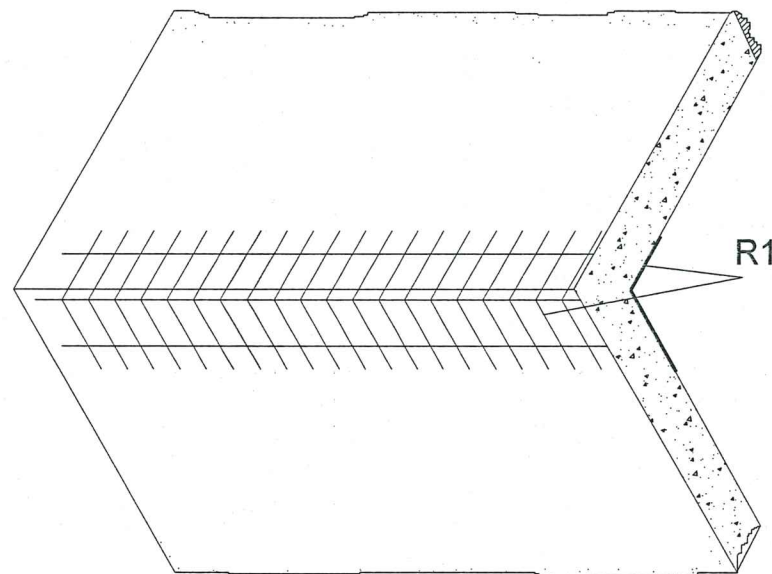
**TYPICAL WWR OVERLAPPING DETAIL**

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No. 21-0419.09  
Expiration Date 08/09/2023  
By *[Signature]*  
Miami Date Product Control

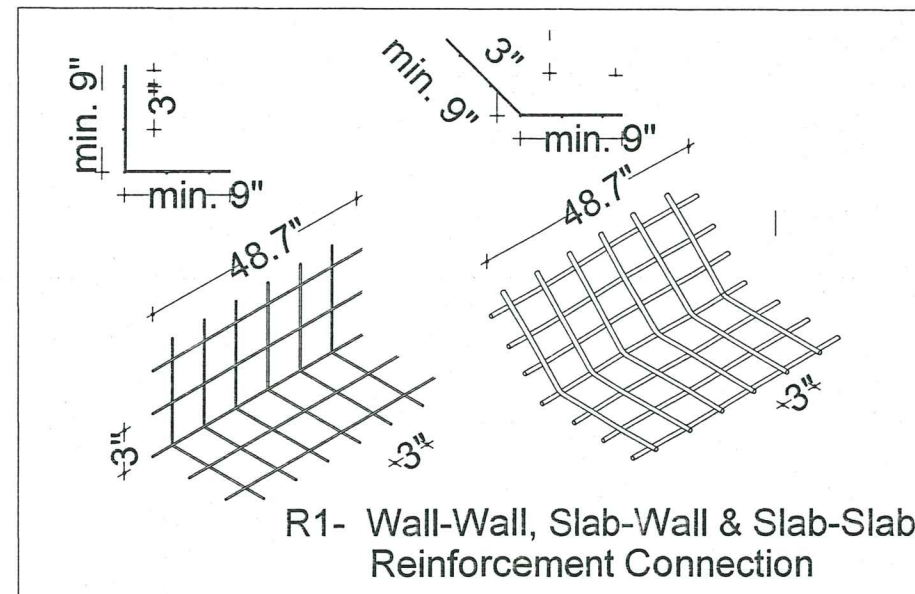
THE REINFORCEMENT OF JOINTS IS USED  
ACCORDING TO ASTM A 1064



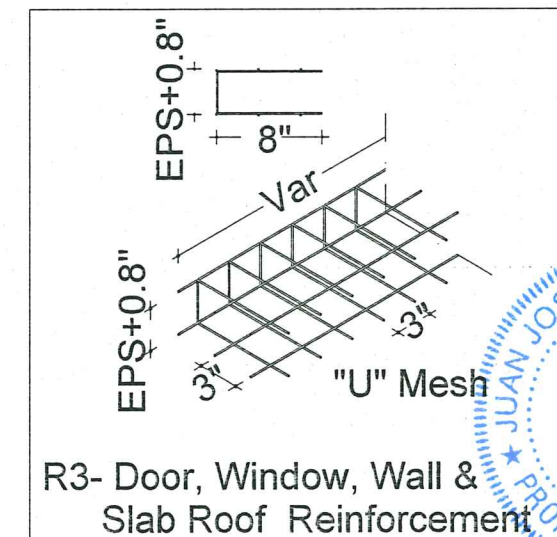
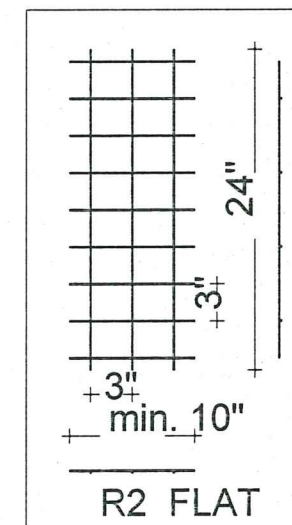
**TYPICAL EXAMPLE WITH A FLAT ROOF SOLUTION**



**TIPYCAL REINFORCING AND CONNECTIONS DETAIL  
USED DURING THE ASSEMBLIES**



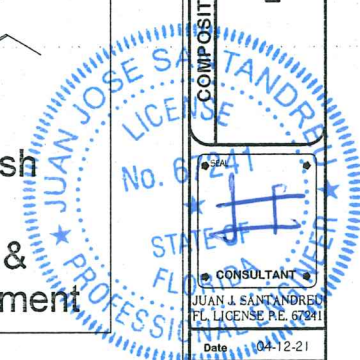
**THE REINFORCEMENT OF JOINTS IS USED ACCORDING TO ASTM A 1064**  
**TYPICAL ADDITIONAL REINFORCING BAR SOLUTION ACCORDING TO THE CRITERION OF REGISTERED ENGINEER**



**STRUCTURAL GREEN**  
271 W 59 St. Hialeah, FL. 33012  
Ph: (305)972-2371  
structuralgreen1@gmail.com

REVISIONS	BY
04-12-21	J5

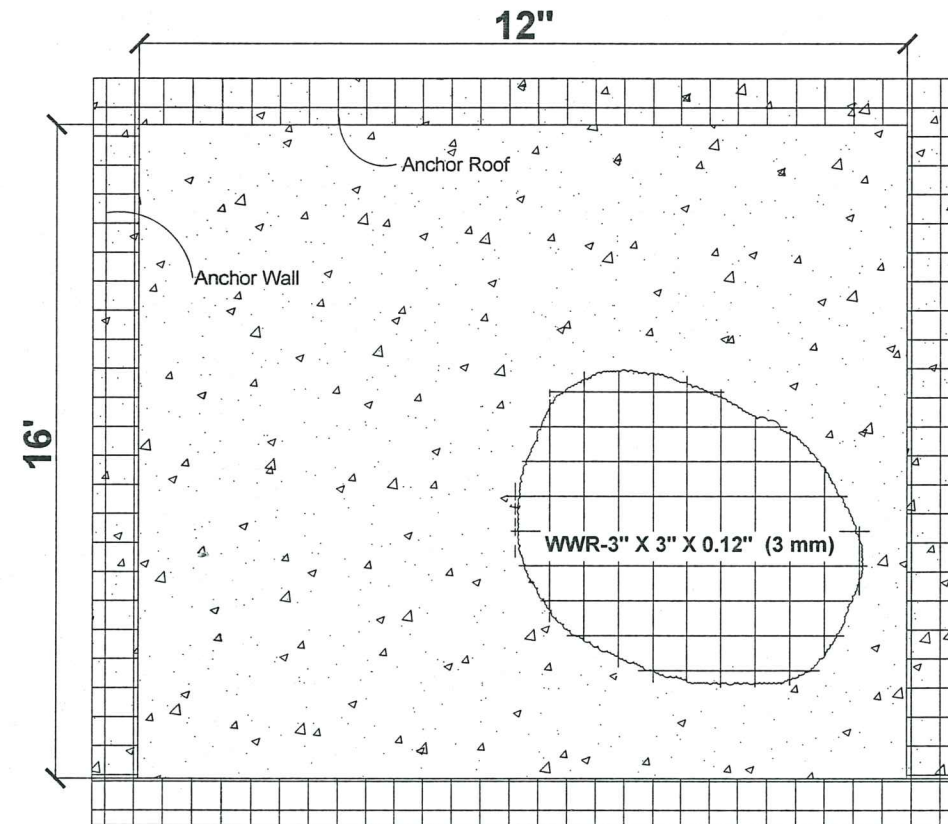
COMPOSITE STEEL-CONCRETE SLAB ROOF PANEL WITH EPS CORE  
**SUSTAINABLE BUILDINGS**  
MONOLITHIC CONSTRUCTION SYSTEM  
(HIGHT VELOCITY HURRICANE ZONE)



CONSULTANT  
JUAN J. SANTANDREU  
FL LICENSE P.E. 67241  
Date 04-12-21  
Scale NOTE  
Drawn MM  
Structural Green  
New generation  
of Sustainable  
Buildings  
Sheet no. 3 of 5  
**SG.R-3**

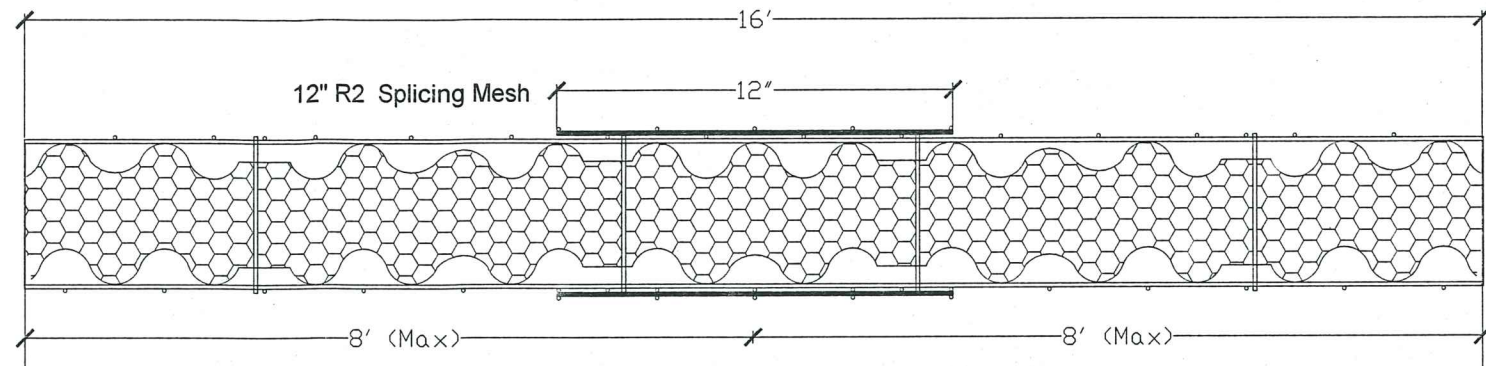


# STRUCTURAL GREEN COMPOSITE SLAB ROOF PANEL SYSTEM WITH EPS CORE



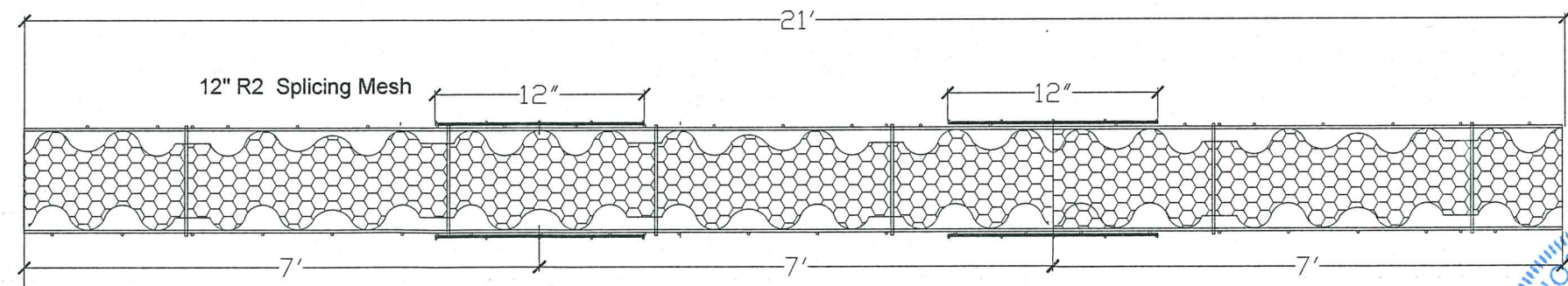
MAXIMUM STANDARD SLAB ROOF PANEL DIMENSIONS IS 16'-0" x 12'-0"  
WITH FOUR SIDES SUPPORTED BY SG WALLS AND MAXIMUM ROOF  
PANEL DESIGN PRESSURE -164.40 PSF (UP LIFT)

## SECTION VIEW OF TYPICAL SLAB ROOF REINFORCING JOINT DETAILS "C1".

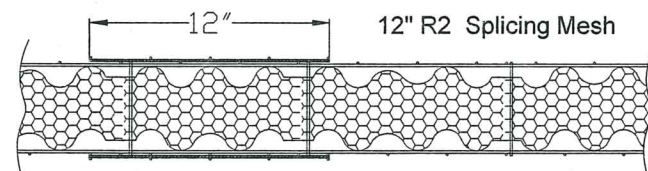
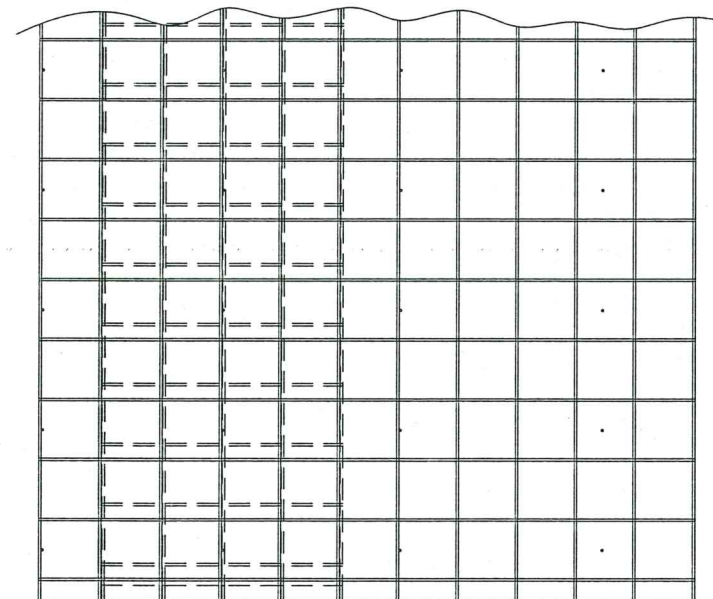


Note: When the wall length exceed 12' of length, WWR type R2  
Flat reinforcements mesh of 12 inches wide will be installed on  
both sides of the panels in the Roof each 8' up to a maximum of  
16' according to Reinforcing Roof Details "C1".  
Resulting 16' x 16'

## SECTION VIEW OF TYPICAL SLAB ROOF REINFORCING JOINT DETAILS "C2".



Note: When the wall length exceed 16' of length, WWR type R2  
Flat reinforcements mesh of 12 inches wide will be installed on  
both sides of the panels in the wall each 7' up to a maximum of  
21' according to Reinforcing Roof Details "C2".  
Resulting 16' x 21'



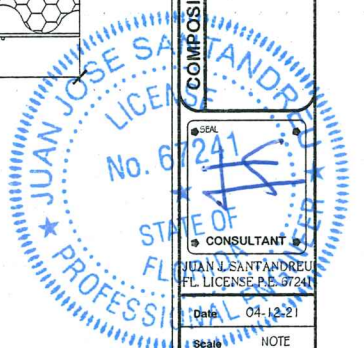
## SECTION VIEW OF TYPICAL ROOF SLAB REINFORCING JOINT



**STRUCTURAL GREEN**  
271 W 59 St. Hialeah, FL 33012  
Ph: (305)972-2371  
structuralgreen1@gmail.com

REVISIONS	BY
04-12-21	J5

COMPOSITE STEEL-CONCRETE SLAB ROOF PANEL WITH EPS CORE  
**SUSTAINABLE BUILDINGS**  
MONOLITHIC CONSTRUCTION SYSTEM  
(HIGHT VELOCITY HURRICANE ZONE)

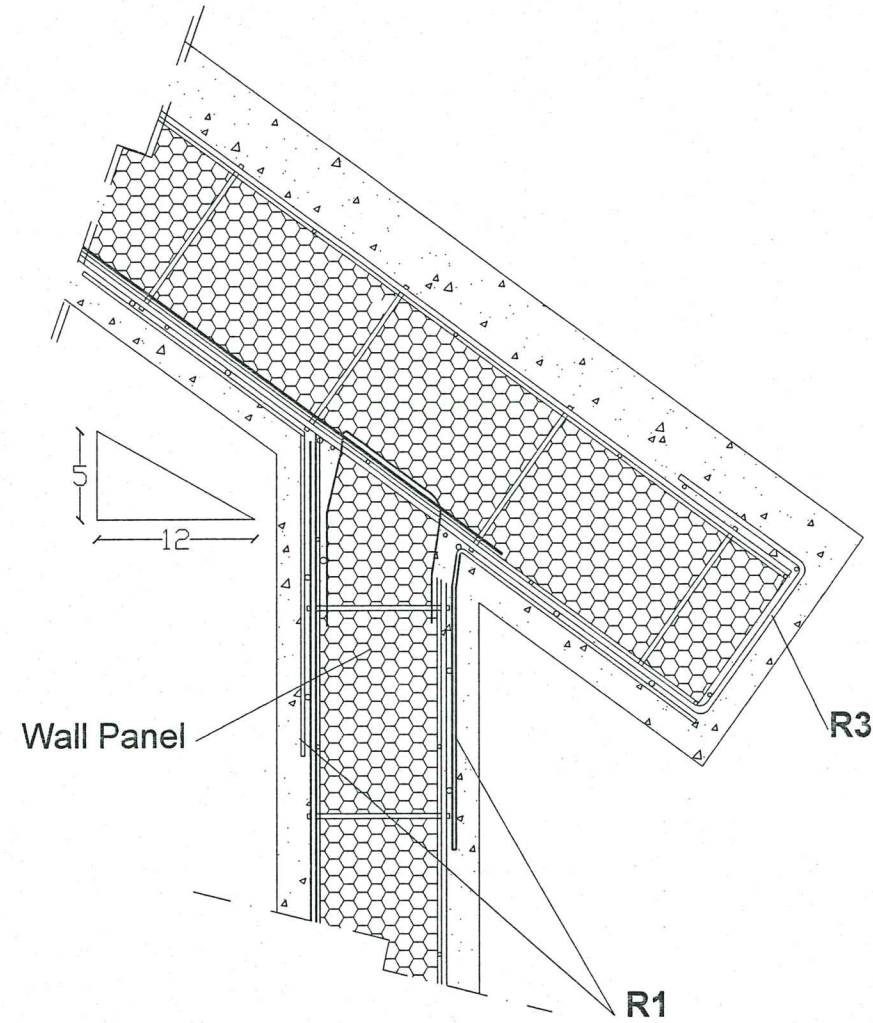
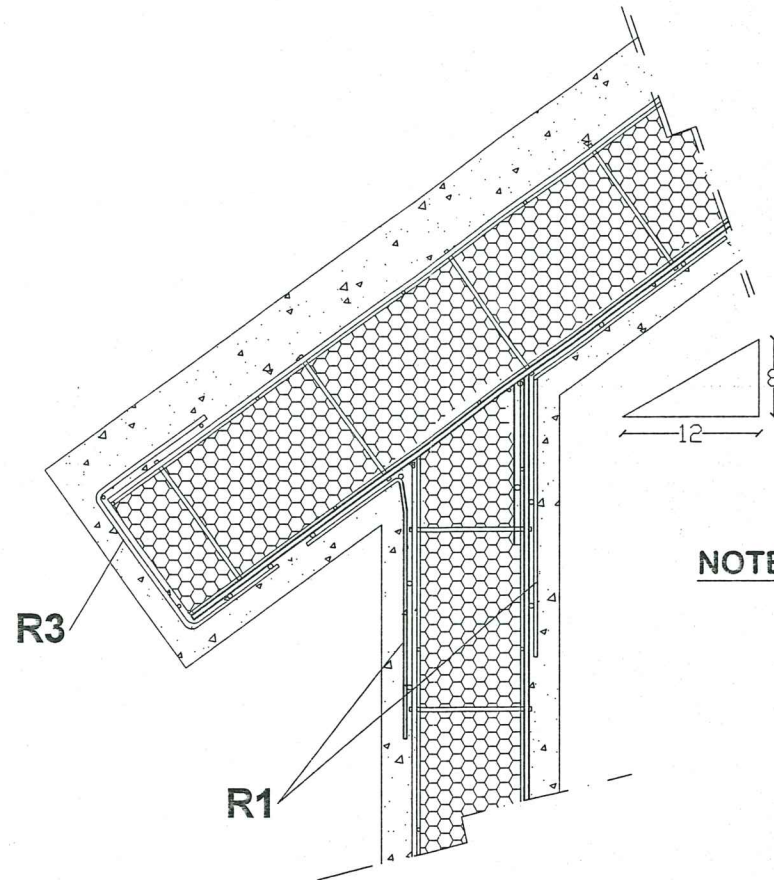
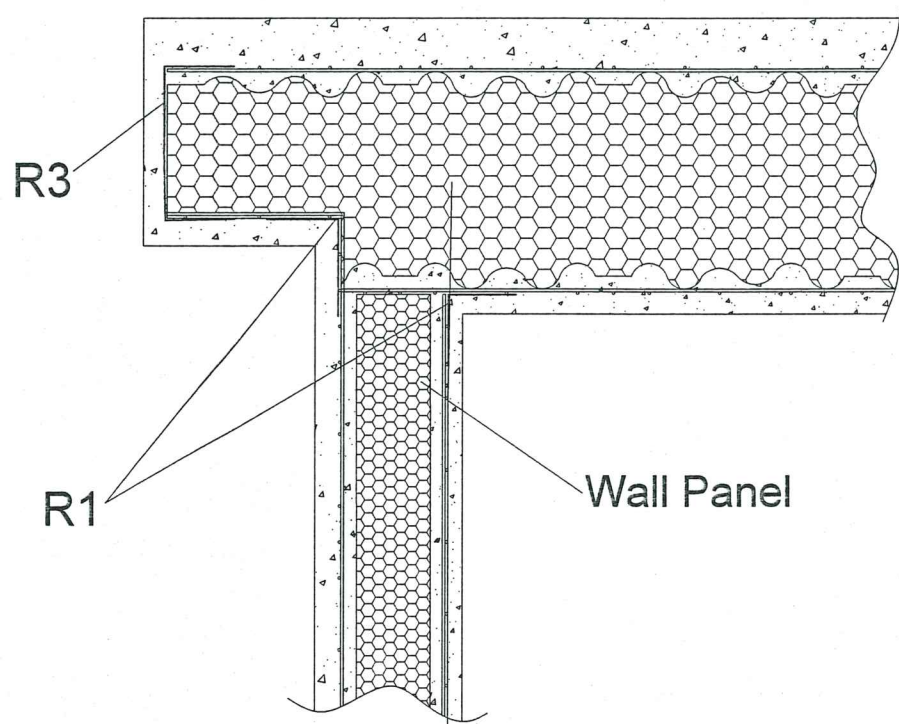
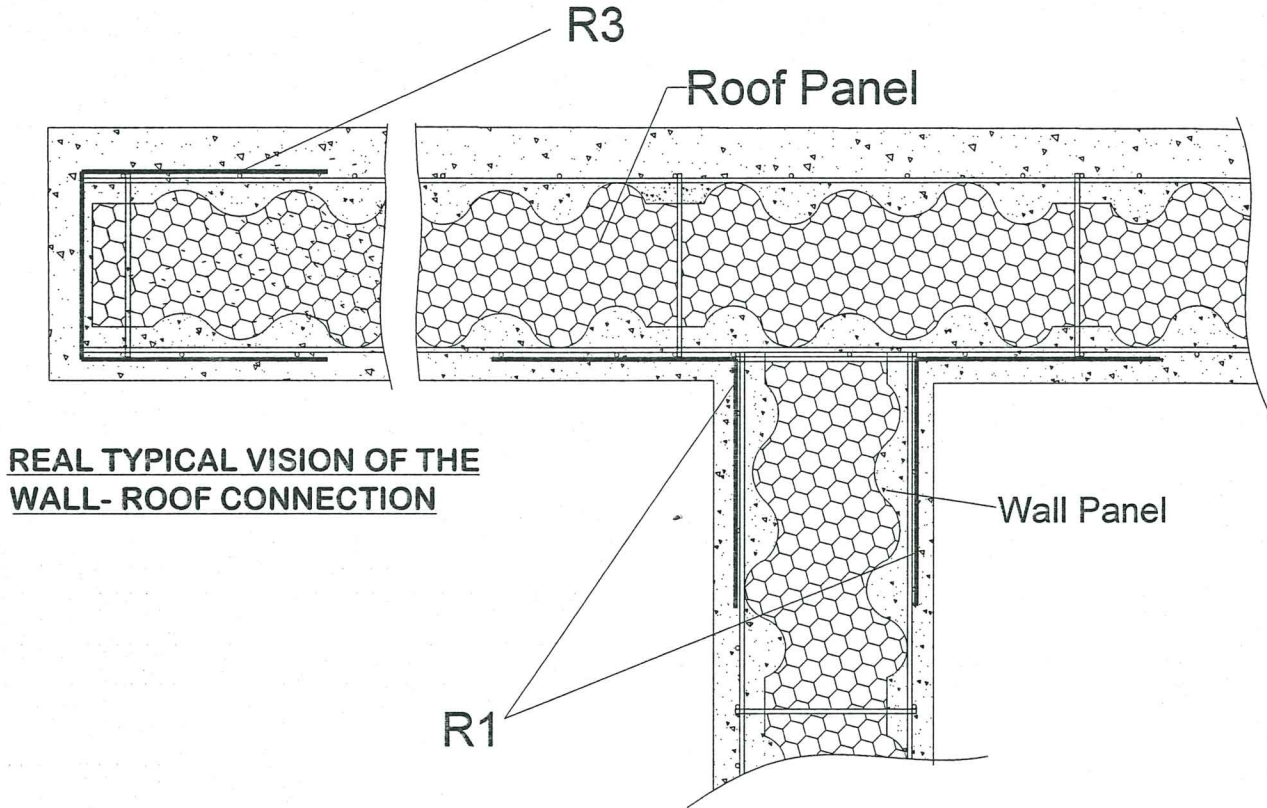


PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No. 21-0419.09  
Expiration Date 08/09/2023  
By *Hely A. M...*  
Miami Data Product Control

Drawn MM  
Structural Green  
New generation  
of Sustainable  
Buildings  
Sheet no. 4 of 5  
**SG.R-4**



STRUCTURAL GREEN COMPOSITE SLAB ROOF PANEL SYSTEM WITH EPS CORE



PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No. 21-0419.09  
Expiration Date 08/09/2023  
By *Heb A. M...*  
Miami Date Product Control

NOTE: THE OVERHANG PANELS SHALL BE CHECKED TO RESIST THE OVERHANG PRESSURE (MAXIMUM DESIGN OF -164.40 PSF) FOR EACH JOB BY THE CORRESPONDING BUILDING DEPARTMENT

TYPICAL SECTIONS

TYPICAL WALL-ROOF CROSS SECTION FOR ALL SPECIMENS



STRUCTURAL GREEN  
271 W 59 St. Hialeah, FL. 33012  
Ph: (305)972-2371  
structuralgreen1@gmail.com

REVISIONS	BY
04-12-21	J5

COMPOSITE STEEL-CONCRETE SLAB ROOF PANEL WITH EPS CORE

SUSTAINABLE BUILDINGS

MONOLITHIC CONSTRUCTION SYSTEM

(HIGHT VELOCITY HURRICANE ZONE)

CONSULTANT

JUAN J. SANTANDREU

FL LICENSE #6720

Date 04-12-21

Scale NOTE

Drawn MM

Structural Green  
New generation  
of Sustainable  
Buildings

Sheet no. 5 of 5

SG.R-5