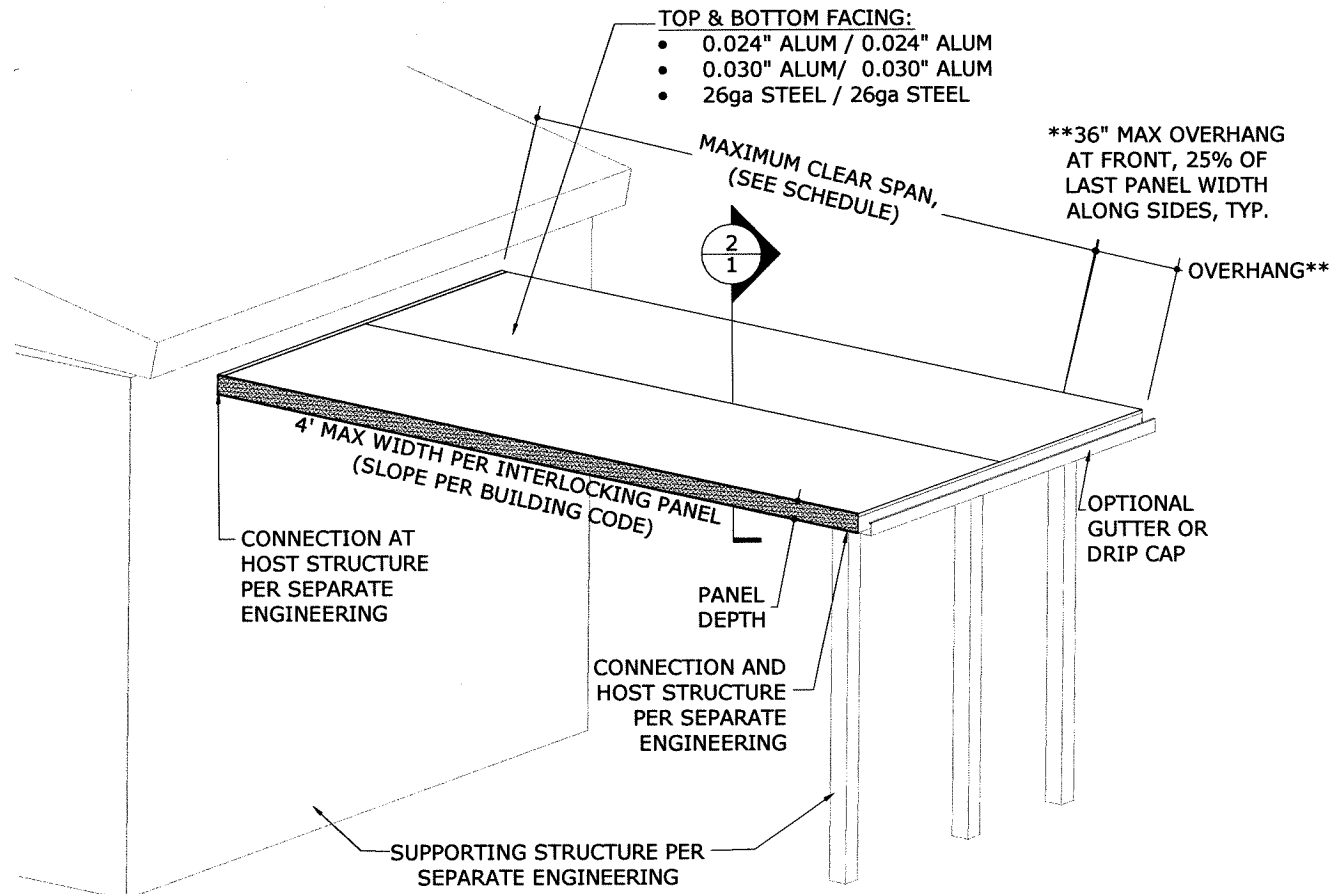
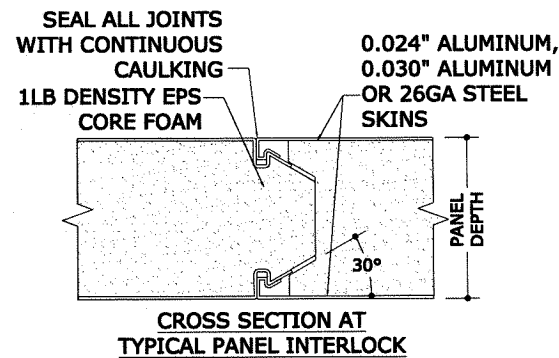


STRUCTALL BUILDING SYSTEMS

EPS FOAM CORE ROOF PANELS - METAL SKIN



1
1 N.T.S. ISOMETRIC



2
1 N.T.S. DETAIL

DESIGN NOTES:

POSITIVE AND NEGATIVE DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM HAVE BEEN CALCULATED IN ACCORDANCE WITH ASCE 7-10 AND THE FLORIDA BUILDING CODE USING ALLOWABLE STRESS DESIGN METHODOLOGY WITH THE CRITERIA OUTLINED HEREIN.

MAXIMUM ALLOWABLE DESIGN PRESSURES:

AS NOTED IN CLEAR SPAN TABLES

ENCLOSED STRUCTURE LOADS :

1. CALCULATIONS BASED ON ASCE 7-10, Vult= 130 MPH - 180 MPH, ENCLOSED STRUCTURE COMPONENTS & CLADDING, RISK CATEGORY=II, Kd=0.85, Kzt=1.0, Kz=TABLE 30.3-1, GCpi=+/-0.18, 15' MEAN ROOF HEIGHT.

SCREENED ENCLOSURE LOADS :

2. WIND LOADS ARE TAKEN AS THE MAXIMUM BETWEEN ASCE 7-10 ENCLOSED STRUCTURE COMPONENTS & CLADDING (AS DESCRIBED ABOVE) AND THE GOVERNING LOADS AS ILLUSTRATED IN FBC TABLE 2002.4 FOR VERTICAL LOADS ON SOLID ROOFS, UP TO 15' MEAN ROOF HEIGHT, Vult= 130 MPH - 180 MPH.

OPEN STRUCTURE LOADS :

3. CALCULATIONS BASED ASCE 7-10, ROOF OVER OPEN STRUCTURE COMPONENTS & CLADDING, OBSTRUCTED WIND FLOW, RISK CATEGORY=II, Kd=0.85, Kzt=1.0, Kz=0.85, 15' MEAN ROOF HEIGHT, Vult= 130 MPH - 180 MPH.

*LOAD COMBINATIONS UTILIZED IN THIS MASTER PLAN SHEET HAVE BEEN DERIVED FROM THE ALLOWABLE STRESS DESIGN LOAD COMBINATIONS ILLUSTRATED IN ASCE 7-10

**ALL WIND SPEEDS LISTED HERE ARE Vult WIND SPEEDS. Vasd WIND SPEEDS MAY BE CALCULATED WITH THE FOLLOWING CONVERSION: $V_{ult} = V_{asd} \times \sqrt{0.6}$

***CALCULATIONS CONSIDER 9.46° ROOF SLOPE. ROOF LIVE LOADS USED IN CALCULATIONS CONSIDER 20 PSF AS DEFINED IN FBC SECTION 1607.

GENERAL NOTES:

- THIS SPECIFICATION HAS BEEN DESIGNED AND SHALL BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE SIXTH EDITION (2017) FOR USE WITHIN AND OUTSIDE THE HVHZ. COMPOSITE ROOF PANELS SHALL COMPLY WITH CHAPTER 7 SECTION 720, CHAPTER 8 SECTION 803, CLASS A INTERIOR FINISH, AND CHAPTER 26 SECTION 2603 OF THE FBC.
- CONTRACTOR SHALL INVESTIGATE AND CONFORM TO ALL LOCAL BUILDING CODE AMENDMENTS WHICH MAY APPLY. DESIGN CRITERIA BEYOND AS STATED HEREIN MAY REQUIRE ADDITIONAL SITE-SPECIFIC SEALED ENGINEERING.
- NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM.
- DESIGN PRESSURES AS NOTED HEREIN ARE BASED ON A MAXIMUM TESTED PRESSURE DIVIDED BY A 2.0 FACTOR OF SAFETY.
- THE ARCHITECT/ENGINEER OF RECORD FOR THE PROJECT SUPERSTRUCTURE WITH WHICH THIS DESIGN IS USED SHALL BE RESPONSIBLE FOR THE INTEGRITY OF ALL SUPPORTING SURFACES TO THIS DESIGN WHICH SHALL BE COORDINATED BY THE PERMITTING CONTRACTOR.
- SEPARATE 'SITE-SPECIFIC' SEALED ENGINEERING SHALL BE REQUIRED IN ORDER TO DEVIATE FROM LOADS, DEFLECTIONS, OR SPANS CONTAINED HEREIN. LINEAR INTERPOLATION OF THE ALLOWABLE SPAN TABLES LISTED HEREIN SHALL NOT BE PERMITTED. CONTACT THIS ENGINEER FOR ALTERNATE SPAN CALCULATIONS AS MAY BE REQUIRED.
- THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
- EPS PANEL PERFORMANCE CHARACTERISTICS FOR SELF IGNITION, FLAME SPREAD AND SMOKE DENSITY HAVE BEEN QUALIFIED THROUGH APPLICABLE ASTM TEST STANDARDS. SEE EVALUATION REPORT FOR MORE INFORMATION.
- THE CONTRACTOR SHALL CAREFULLY CONSIDER POSSIBLE IMPOSING LOADS ON ROOF, INCLUDING BUT NOT LIMITED TO ANY CONCENTRATED LOADS WHICH MAY JUSTIFY GREATER DESIGN CRITERIA. THIS ADDITIONAL ROOF LOAD CRITERIA SHALL BE PROPERLY ANALYZED BY A LICENSED ENGINEER OR REGISTERED ARCHITECT.
- EPS CORE COMPOSITE PANELS SHALL BE CONSTRUCTED USING TYPE 3105-H254 ALUMINUM FACINGS OR ASTM A653, CS, TYPE B HOT DIP GALVANIZED G90 COATED STEEL FACINGS. EXPANDED POLYSTYRENE FOAM SHALL HAVE TYPICAL DENSITY OF 1.0 PCF. THE EPS FOAM SHALL BE ADHERED TO THE ALUMINUM FACING WITH MORAD M640 SERIES ADHESIVE (BY ROHM AND HAAS COMPANY). FABRICATION SHALL BE IN ACCORDANCE WITH APPROVED FABRICATION METHODS BY MANUFACTURER FOR ALL PANELS.
- THE CONTRACTOR IS RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
- ENGINEER SEAL AFFIXED HERE TO VALIDATES STRUCTURAL DESIGN AS SHOWN ONLY. USE OF THIS SPECIFICATION BY CONTRACTOR, et. al. INDEMNIFIES & SAVES HARMLESS THIS ENGINEER FOR ALL COST & DAMAGES INCLUDING LEGAL FEES & APPELLATE FEES RESULTING FROM MATERIAL FABRICATION, SYSTEM ERECTION, & CONSTRUCTION PRACTICES BEYOND THAT WHICH IS CALLED FOR BY LOCAL, STATE, & FEDERAL CODES & FROM DEVIATIONS OF THIS PLAN.
- EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.
- ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE THIS CERTIFICATION.

TABLE VALUE DERIVATIONS:

PANEL PROPERTIES:

- PANEL STRUCTURAL PROPERTIES DERIVED FROM CERTIFIED TEST REPORTS Nos. TT-506027B, 506027C, 506027D, 509014A, 509014B BY TERRAPIN TESTING, ESP012351P-1, ESP012351P-2, ESP012351P-3, ESP012351P-3A, ESP012351P-4, ESP012351P-5, ESP012351P-6, EXP012351P-6A, ESP012351P-7, ESP012351P-8, ESP012351P-9, ESP012351P-9A BY ELEMENT MATERIALS TECHNOLOGY.
- PANEL DEAD LOADS HAVE BEEN FACTORED INTO CALCULATIONS FOR LIVE LOADS OR UPLIFT AS WELL AS CALCULATIONS FOR PANEL PROPERTIES.

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PRODUCT APPROVAL #FL 15491.1

| REMARKS | DRWN | CHKD | DATE |
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| INIT ISSUE (12-STRUC-01) | CSL | KL | 04/05/12 |
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MAXIMUM ALLOWABLE CLEAR SPAN TABLE
ROOF OVER OPEN STRUCTURE:

| Wind Speed (MPH) | Exposure | Ultimate Live Load &/or Uplift | Allowable Live Load &/or Uplift | Deflection Limit (L/...) | 3" Panels | | | 4" Panels | | | 6" Panels | | |
|------------------|----------|--------------------------------|---------------------------------|--------------------------|------------------|------------------|-----------------|------------------|------------------|-----------------|------------------|------------------|-----------------|
| | | | | | 0.024" Alum Skin | 0.030" Alum Skin | 26ga Steel Skin | 0.024" Alum Skin | 0.030" Alum Skin | 26ga Steel Skin | 0.024" Alum Skin | 0.030" Alum Skin | 26ga Steel Skin |
| | | | | | 1-LB EPS | 1-LB EPS | 1-LB EPS | 1-LB EPS | 1-LB EPS | 1-LB EPS | 1-LB EPS | 1-LB EPS | 1-LB EPS |
| 130 | B | +/- 47 psf | +/- 28 psf | 120 | 10'-5" | 11'-9" | 12'-1" | 12'-11" | 12'-1" | 13'-3" | 14'-9" | 14'-11" | |
| 130 | B | +/- 47 psf | +/- 28 psf | 180 | 9'-2" | 11'-9" | 10'-10" | 12'-3" | 12'-1" | 13'-3" | 14'-9" | 14'-11" | |
| 130 | B | +/- 47 psf | +/- 28 psf | 240 | 8'-4" | 11'-2" | 9'-11" | 11'-2" | 11'-11" | 12'-3" | 13'-9" | 14'-9" | |
| 130 | C | +/- 49 psf | +/- 29 psf | 120 | 10'-4" | 11'-8" | 12'-0" | 12'-10" | 12'-1" | 13'-2" | 14'-9" | 14'-11" | |
| 130 | C | +/- 49 psf | +/- 29 psf | 180 | 9'-2" | 11'-8" | 10'-10" | 12'-3" | 12'-1" | 13'-2" | 14'-9" | 14'-11" | |
| 130 | C | +/- 49 psf | +/- 29 psf | 240 | 8'-4" | 11'-1" | 9'-10" | 11'-1" | 11'-11" | 12'-3" | 13'-9" | 14'-8" | |
| 130 | D | +/- 59 psf | +/- 35 psf | 120 | 9'-5" | 10'-7" | 10'-11" | 11'-8" | 10'-11" | 11'-11" | 13'-4" | 13'-6" | |
| 130 | D | +/- 59 psf | +/- 35 psf | 180 | 8'-7" | 10'-7" | 10'-2" | 11'-5" | 10'-11" | 11'-11" | 13'-4" | 13'-6" | |
| 130 | D | +/- 59 psf | +/- 35 psf | 240 | 7'-10" | 10'-5" | 9'-3" | 10'-5" | 10'-11" | 11'-5" | 12'-11" | 13'-6" | |
| 140 | B | +/- 49 psf | +/- 29 psf | 120 | 10'-4" | 11'-9" | 12'-0" | 12'-11" | 12'-1" | 13'-2" | 14'-9" | 14'-11" | |
| 140 | B | +/- 49 psf | +/- 29 psf | 180 | 9'-2" | 11'-9" | 10'-10" | 12'-3" | 12'-1" | 13'-2" | 14'-9" | 14'-11" | |
| 140 | B | +/- 49 psf | +/- 29 psf | 240 | 8'-4" | 11'-2" | 9'-10" | 11'-1" | 11'-11" | 12'-3" | 13'-9" | 14'-8" | |
| 140 | C | +/- 59 psf | +/- 35 psf | 120 | 9'-5" | 10'-7" | 10'-11" | 11'-8" | 10'-11" | 11'-12" | 13'-4" | 13'-6" | |
| 140 | C | +/- 59 psf | +/- 35 psf | 180 | 8'-7" | 10'-7" | 10'-2" | 11'-6" | 10'-11" | 11'-12" | 13'-4" | 13'-6" | |
| 140 | C | +/- 59 psf | +/- 35 psf | 240 | 7'-10" | 10'-5" | 9'-3" | 10'-5" | 10'-11" | 11'-6" | 12'-11" | 13'-6" | |
| 140 | D | +/- 71 psf | +/- 42 psf | 120 | 8'-6" | 9'-8" | 9'-11" | 10'-7" | 9'-11" | 10'-10" | 12'-1" | 12'-3" | |
| 140 | D | +/- 71 psf | +/- 42 psf | 180 | 8'-1" | 9'-8" | 9'-6" | 10'-7" | 9'-11" | 10'-10" | 12'-1" | 12'-3" | |
| 140 | D | +/- 71 psf | +/- 42 psf | 240 | 7'-4" | 9'-8" | 8'-8" | 9'-9" | 9'-11" | 10'-9" | 12'-1" | 12'-3" | |
| 155 | B | +/- 34 psf | +/- 34 psf | 120 | 9'-7" | 10'-10" | 11'-1" | 11'-11" | 11'-1" | 12'-2" | 13'-7" | 13'-9" | |
| 155 | B | +/- 57 psf | +/- 34 psf | 180 | 8'-8" | 10'-10" | 10'-3" | 11'-7" | 11'-1" | 12'-2" | 13'-7" | 13'-9" | |
| 155 | B | +/- 57 psf | +/- 34 psf | 240 | 7'-11" | 10'-6" | 9'-4" | 10'-6" | 11'-1" | 11'-7" | 13'-0" | 13'-9" | |
| 155 | C | +/- 69 psf | +/- 41 psf | 120 | 8'-8" | 9'-9" | 10'-1" | 10'-9" | 10'-1" | 11'-0" | 12'-4" | 12'-5" | |
| 155 | C | +/- 69 psf | +/- 41 psf | 180 | 8'-2" | 9'-9" | 9'-8" | 10'-9" | 10'-1" | 11'-0" | 12'-4" | 12'-5" | |
| 155 | C | +/- 69 psf | +/- 41 psf | 240 | 7'-5" | 9'-9" | 8'-9" | 9'-10" | 10'-1" | 10'-10" | 12'-2" | 12'-5" | |
| 155 | D | +/- 82 psf | +/- 49 psf | 120 | | | 9'-1" | 9'-9" | 9'-2" | 10'-0" | 11'-2" | 11'-3" | |
| 155 | D | +/- 82 psf | +/- 49 psf | 180 | | | 9'-0" | 9'-9" | 9'-2" | 10'-0" | 11'-2" | 11'-3" | |
| 155 | D | +/- 82 psf | +/- 49 psf | 240 | | | 8'-2" | 9'-3" | 9'-2" | 10'-0" | 11'-2" | 11'-3" | |
| 165 | B | +/- 64 psf | +/- 38 psf | 120 | 8'-12" | 10'-2" | 10'-5" | 11'-2" | 10'-5" | 11'-5" | 12'-9" | 12'-11" | |
| 165 | B | +/- 64 psf | +/- 38 psf | 180 | 8'-4" | 10'-2" | 9'-10" | 11'-1" | 10'-5" | 11'-5" | 12'-9" | 12'-11" | |
| 165 | B | +/- 64 psf | +/- 38 psf | 240 | 7'-7" | 10'-1" | 8'-11" | 10'-1" | 10'-5" | 11'-1" | 12'-6" | 12'-11" | |
| 165 | C | +/- 77 psf | +/- 46 psf | 120 | 8'-2" | 9'-2" | 9'-5" | 10'-1" | 9'-6" | 10'-4" | 11'-7" | 11'-8" | |
| 165 | C | +/- 77 psf | +/- 46 psf | 180 | 7'-10" | 9'-2" | 9'-3" | 10'-1" | 9'-6" | 10'-4" | 11'-7" | 11'-8" | |
| 165 | C | +/- 77 psf | +/- 46 psf | 240 | 7'-1" | 9'-2" | 8'-5" | 9'-6" | 9'-6" | 10'-4" | 11'-7" | 11'-8" | |
| 165 | D | +/- 94 psf | +/- 56 psf | 120 | | | 8'-7" | 9'-2" | 8'-7" | 9'-5" | 10'-6" | 10'-7" | |
| 165 | D | +/- 94 psf | +/- 56 psf | 180 | | | 8'-7" | 9'-2" | 8'-7" | 9'-5" | 10'-6" | 10'-7" | |
| 165 | D | +/- 94 psf | +/- 56 psf | 240 | | | 7'-10" | 8'-10" | 8'-7" | 9'-5" | 10'-6" | 10'-7" | |
| 170 | B | +/- 67 psf | +/- 40 psf | 120 | 8'-8" | 9'-10" | 10'-1" | 10'-10" | 10'-1" | 11'-1" | 12'-4" | 12'-6" | |
| 170 | B | +/- 67 psf | +/- 40 psf | 180 | 8'-2" | 9'-10" | 9'-8" | 10'-10" | 10'-1" | 11'-1" | 12'-4" | 12'-6" | |
| 170 | B | +/- 67 psf | +/- 40 psf | 240 | 7'-5" | 9'-10" | 8'-9" | 9'-11" | 10'-1" | 10'-11" | 12'-3" | 12'-6" | |
| 170 | C | +/- 82 psf | +/- 49 psf | 80 | | | 9'-2" | 9'-10" | 9'-2" | 10'-0" | 11'-3" | 11'-4" | |
| 170 | C | +/- 82 psf | +/- 49 psf | 120 | | | 9'-2" | 9'-10" | 9'-2" | 10'-0" | 11'-3" | 11'-4" | |
| 170 | C | +/- 82 psf | +/- 49 psf | 180 | | | 9'-1" | 9'-10" | 9'-2" | 10'-0" | 11'-3" | 11'-4" | |
| 170 + | C | +/- 82 psf | +/- 49 psf | 240 | | | 8'-3" | 9'-3" | 9'-2" | 10'-0" | 11'-3" | 11'-4" | |
| 170 | D | +/- 101 psf | +/- 60 psf | 80 | | | 8'-4" | 8'-11" | 8'-4" | 9'-1" | 10'-2" | 10'-3" | |
| 170 + | D | +/- 101 psf | +/- 60 psf | 120 | | | 8'-4" | 8'-11" | 8'-4" | 9'-1" | 10'-2" | 10'-3" | |
| 170 | D | +/- 101 psf | +/- 60 psf | 180 | | | 8'-4" | 8'-11" | 8'-4" | 9'-1" | 10'-2" | 10'-3" | |
| 170 + | D | +/- 101 psf | +/- 60 psf | 240 | | | 7'-8" | 8'-8" | 8'-4" | 9'-1" | 10'-2" | 10'-3" | |
| 175 | C | +/- 87 psf | +/- 52 psf | 80 | | | 8'-11" | 9'-6" | 8'-11" | 9'-9" | 10'-11" | 11'-0" | |
| 175 + | C | +/- 87 psf | +/- 52 psf | 180 | | | 8'-10" | 9'-6" | 8'-11" | 9'-9" | 10'-11" | 11'-0" | |
| 175 | D | +/- 106 psf | +/- 63 psf | 80 | | | 8'-1" | 8'-8" | 8'-1" | 8'-10" | 9'-11" | 9'-12" | |
| 175 + | D | +/- 106 psf | +/- 63 psf | 180 | | | 8'-1" | 8'-8" | 8'-1" | 8'-10" | 9'-11" | 9'-12" | |
| 180 + | C | +/- 92 psf | +/- 55 psf | 120 | | | 8'-8" | 9'-3" | 8'-8" | 9'-6" | 10'-7" | 10'-9" | |
| 180 + | C | +/- 92 psf | +/- 55 psf | 180 | | | 8'-8" | 9'-3" | 8'-8" | 9'-6" | 10'-7" | 10'-9" | |
| 180 + | C | +/- 92 psf | +/- 55 psf | 240 | | | 7'-11" | 8'-11" | 8'-8" | 9'-6" | 10'-7" | 10'-9" | |

TABLE NOTES:
 1. THIS TABLE LISTS BOTH ULTIMATE AND ALLOWABLE PRESSURE VALUES (ULTIMATE PRESSURE = 1.67 * ALLOWABLE PRESSURE). ULTIMATE PRESSURES SHALL BE USED ONLY WHEN ULTIMATE PRESSURES ARE GIVEN FOR A SITE SPECIFIC INSTALLATION.

CLEAR SPAN TABLE USE INSTRUCTIONS:

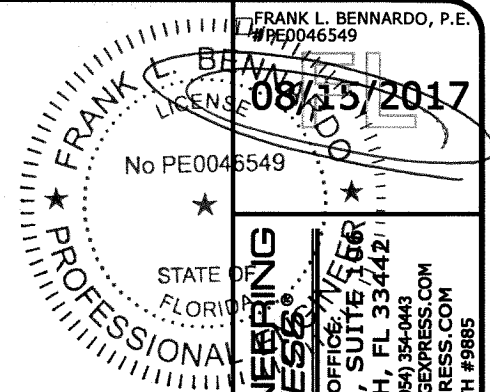
- DETERMINE TYPE OF ENCLOSURE TO BE COVERED (ENCLOSED, SCREENED WALLS, OR OPEN STRUCTURE).
- DETERMINE THE SITE SPECIFIC REQUIRED ULTIMATE DESIGN WIND SPEED (MPH), IN ACCORDANCE WITH THE FLORIDA BUILDING CODE.
- FIND ALLOWABLE COMPOSITE PANEL CLEAR SPAN IN TABLES FOR APPROPRIATE PANEL DEPTH, FACING THICKNESS, AND EPS CORE DENSITY SELECTED.
- /// INDICATES VALUES NOT VALID FOR USE.

DEFLECTION NOTES:

- DETERMINE REQUIRED DEFLECTION LIMITATION PER THE MINIMUM REQUIREMENTS ILLUSTRATED IN THE FLORIDA BUILDING CODE.
- (+) INDICATES ROWS FOR USE WITHIN THE HVHZ ONLY. DEFLECTION LIMITS CONSIDERED FOR USE IN THE HVHZ ARE:
 - L/80 FOR SPANS ≤ 12'-0"
 - L/180 FOR SPANS > 12'-0"

OTHER CONSIDERATIONS:

- FRONT OVERHANG MAY BE UP TO 3'-0" WITH VALUES LISTED HEREIN. MAXIMUM UNSUPPORTED SIDE OVERHANG IS 25% OF LAST PANEL WIDTH (i.e. 12" MAX FOR 48" PANEL WIDTH).



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 ALUMINUM & STEEL METAL SKIN
 PRODUCT APPROVAL #FL 15491.1

| REMARKS | DRWN | CHKD | DATE |
|--------------------------|------|------|----------|
| UNIT ISSUE (12-STRUC-01) | CSL | KL | 04/05/12 |
| REV FOR 0.030" SKINS | CSL | TSB | 07/08/13 |
| REV FOR WIND SPEEDS | CSL | TSB | 12/05/13 |
| FBC 5TH EDITION (2014) | CSL | FLB | 04/21/15 |
| REV (2017 FBC) | RWN | FLB | 8-11-17 |

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