



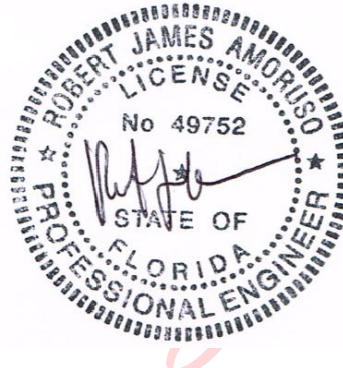
Product Evaluation Report

Date:	June 27, 2023
Report #:	2647-PER
Report Revision No.:	2
Project #:	423-0107
Product Mfg.:	CENTRIA 1550 Coraopolis Heights Road, Suite 500 Moon Township, PA 15108
Product Description:	Formawall Dimension Series 2" Panels, 36" Module with 16" OC Support Spacing Formawall Dimension Series 2-1/2" Panels, 36" Module with 16" OC Support Spacing Formawall Dimension Series 3"T Panels, 36" Module with 16" OC Support Spacing
Product Category:	Structural Components
Product Sub-Category:	Structural Wall
Compliance Method:	Product Approval Rule 61G20-3.005(1)(d) – Product Evaluation Report by a Licensed Professional Engineer
Prepared By:	Robert J. Amoruso, P.E. Florida P.E. No. 49752 PTC Product Design Group, LLC, PO Box 520775, Longwood, FL 32752-0775 Florida C of A No. 25935

CERTIFICATE OF INDEPENDENCE

PTC Product Design Group, LLC and Robert J. Amoruso, P.E. do not have, nor will acquire, any financial interest in the company manufacturing or distributing product(s) covered by this Product Evaluation Report.

PTC Product Design Group, LLC and Robert J. Amoruso, P.E. do not have, nor will acquire any financial interest in any other entity involved in the approval process or testing of the product(s) covered by this Product Evaluation Report.



Digitally signed
by Robert J
Amoruso
Date:
2023.08.14
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Evaluated by:
Robert J. Amoruso, P.E.
FL PE License No. 49752



SCOPE

Evaluate Centria's Formawall Dimension Series 2", 2-1/2" and 3"T Panels with supports 16" OC for conformance to the 8th Edition (2023) Florida Building Code including the High Velocity Hurricane Zone (HVHZ).

DESCRIPTION OF PRODUCT – INSTALLATION REQUIREMENTS

See Reference 1 for a description of the product, its installation and other pertinent data related to its approved use.

CODE CONFORMANCE

The 8th Edition (2023) Florida Building Code (FBC) requirements specific to this product that have been met by testing (Reference 2) and engineering evaluation (Reference 3) and depicted on the manufacturer's installation drawings (Reference 1) are the following.

- 1403.3 Exterior Walls – Structural
- 1404.5 Exterior Walls – Metal
- Table 1405.2 Minimum Thickness of Weather Coverings
 - Steel must meet or exceed 0.0149" in thickness.
- 1405.17 Exterior Walls - Fasteners
- Table 1604.3 Deflection Limits
 - Exterior Walls/Flexible Finishes, deflection for wind loading limited to L/120.
- 1609 Wind Loads
- 2210.1 Cold-Formed Steel, General

Testing is based on TAS 201, TAS 202 and TAS 203 per the recommendations of Reference 5.b (basic structural testing) and HVHZ requirements of the 8th Edition (2023) FBC. Testing determines the Negative and Positive Wind Pressure Loading in PSF. The safety factor used to determine the allowable design pressure loading is 1.5. Air infiltration and water penetration were assessed in accordance with TAS 202 at the design pressures noted below. Large Missile Impact was assessed in accordance with TAS 201 & TAS 203 at the design pressures noted below.

Fastener Design Safety factors are as prescribed in AISI S100-12. Fastener allowable is based on a safety factor of 3. Uniform Static Air Pressure deflection limitation based on L/240 is met which exceeds L/120 required by the building code.



LIMITATIONS AND CONDITIONS OF USE

This product evaluation report contains or refers to specifications, technical details and installation details and/or methods that pertain to the proper use and/or installation of the product specified herein. Specific limitations and conditions of its use including but not limited to the following are contained in Reference 1 and are the subject of Product Approval in accordance with the State of Florida Product Approval Rule 61G20-3.

- Design Pressure Rating (psf)
- Installation substrate requirements.
- Installation anchor requirements.
- Installation restrictions.
- Product description.
- Product components.

QUALITY ASSURANCE

This product is manufactured under a quality assurance program audited by an approved Quality Assurance Entity/Certification Agency Farabaugh Engineering and Testing, Inc as required in Rule 61G20-3.005(3). See FBC Organization No. QUA7733 for approval under Rule 61G20-3.

REFERENCES & SUPPORTING DOCUMENTS

- 1) Manufacturer's Installation Instructions:
 - a) INSTALL_FWDS_36in Panel_16 in Support O.C. Installation Details, Signed and Sealed by Robert J. Amoruso, P.E., dated 2/7/20.
 - i) Formawall Dimension Series 2" (36" Maximum Panel Module with Supports 16" OC)
 - ii) Formawall Dimension Series /Formawall Dimension Graphix Series 2-1/2" (36" Maximum Panel Module with Supports 16" OC)
 - iii) Formawall Dimension Series /Formawall Dimension Graphix Series 3"T Panels (36" Maximum Panel Module with Supports 16" OC)
- 2) Testing
 - a) TAS 201, TAS 202 and TAS 203
 - i) Farabaugh Engineering and Testing Inc. Test Report No. T118-20, Dated 2/4/20, Signed and Sealed by Daniel G. Farabaugh, P.E. for Formawall Dimension Series 2", 36" Maximum Panel Module with 16" OC Support Spacing.
 - (1) 2" Panel DP = +/-70 psf for one fastener per clip
 - (2) 2" Panel DP = +/-100 psf for two fasteners per clip
 - (3) 2-1/2" enveloped by 2"T Panel testing
 - (4) 3"T enveloped by 2"T Panel testing
 - b) ASTM A370-10 Tensile Testing
 - i) Farabaugh Engineering and Testing Inc. Test Report No. T118-20, Dated 2/4/20, Signed and Sealed by Daniel G. Farabaugh, P.E. for 2" thick foam panel with 22 ga. fascia and 26 ga. liner.
 - (1) Yield Strength = 55,081 psf Fascia and 50,583 psf Liner
 - (2) Tensile Strength = 64,330 psf Fascia and 66,333 psf Liner
 - c) ASTM E84-16 Flame Spread and Smoke Developed Index testing of foam core material HHFF 40519 (Huntsman Foam Core WR40519) in various thicknesses to envelope Formawall product.

- i) Intertek Report No. F9712.07-121-24, dated 8/17/16, 2" foam
 - (1) SDI = 250 < 450 required by building code.
 - (2) FSI = 15 < 75 required by building code.
 - ii) Intertek Report No. F9712.08-121-24, dated 8/17/16, 2" foam
 - (1) SDI = 250 < 450 required by building code.
 - (2) FSI = 20 < 75 required by building code.
 - iii) Intertek Report No. F9712.09-121-24, dated 8/17/16, 2" foam
 - (1) SDI = 300 < 450 required by building code.
 - (2) FSI = 20 < 75 required by building code.
 - iv) Intertek Report No. F9712.01-121-24, dated 8/3/16, 3" foam
 - (1) SDI = 250 < 450 required by building code.
 - (2) FSI = 20 < 75 required by building code.
 - v) Intertek Report No. F9712.02-121-24, dated 8/3/16, 3" foam
 - (1) SDI = 250 < 450 required by building code.
 - (2) FSI = 15 < 75 required by building code.
 - vi) Intertek Report No. F9712.03-121-24, dated 8/3/16, 3" foam
 - (1) SDI = 200 < 450 required by building code.
 - (2) FSI = 20 < 75 required by building code.
 - b) ASTM D1929-16 Self-Ignition and Flash-Ignition Temperature testing of Huntsman Foam Core WR40519 material
 - i) Intertek Report No. F9652.03-106-31, dated 08/23/17
 - (1) SIT = 950°F (510°C) > 650°F (343°C) required by building code.
 - (2) FIT = 860°F (430°C); not a code requirement.
- 3) Reports and Calculations
- i) PTC Calculation No. 2647, Anchorage Analysis - Formawall Dimension Series 2", 2-1/2" and 3" T Panels, Signed and Sealed by Robert J. Amoruso, P.E.
 - (1) AISI S100-12 used in engineering evaluation.
- 4) 8th Edition (2023) Florida Building Code (FBC), Building Volume
- i) 1403.3 Exterior Walls – Structural
 - ii) 1404.5 Exterior Walls – Metal
 - iii) Table 1405.2 Minimum Thickness of Weather Coverings
 - (1) Steel must meet or exceed 0.0149" in thickness.
 - iv) 1405.17 Exterior Walls - Fasteners
 - v) Table 1604.3 Deflection Limits
 - (1) Exterior Walls/Flexible Finishes, deflection for wind loading limited to L/120.
 - vi) 1609 Wind Loads
 - vii) 2210.1 Cold-Formed Steel, General
- 5) Standards used in evaluation.
- a) AISI S100-12, North American Specification for the Design of Cold-formed Steel Structural Members
 - b) Metal Construction Association, Guidelines for Wall Panel, Preformed Metal Wall Specification Guidelines, 3rd Edition.