WHITE PAPER

PHANTOM® SCREENS

Phantom Screens: Is a Florida Product Approval Required?

September 2017

PHANTOM SCREENS: IS A FLORIDA PRODUCT APPROVAL REQUIRED?

Product Approvals for building components are the general rule in Florida. Building officials, architects, insurance companies, even homeowners ask for them all the time, frequently refusing permits, insurance discounts, and product installations. So what is the legal ruling on when and if product approvals are required for this product?

The Florida Building Code requires only certain products be tested and evaluated by an engineer, architect or approved test agency. Those evaluations or certified test documents can either be registered with the state of Florida through their statewide product approval system website or by use of a 'Local Product Approval'. There are only a few product types that require this type of approval per the Florida website:

- Panel walls
- Exterior doors
- Roofing products
- Skylights
- Windows
- Shutters
- Structural components

The New American Home 2017 - Orlando, FL

Outside of those products, a Statewide Florida Product Approval is optional and in many cases, isn't even applicable for approval at the state level.

Miami Dade NOA's (meaning Notices Of Acceptance), contrary to popular understanding, are in themselves NOT approved as a statewide product approval. NOA's also permit more evaluation categories than Florida's system, but still don't encompass every product type. NOA's are adopted either by registering them with the state system (if they even apply) or by the Local Product Approval process (see FS 553.8425). Other evaluations (such as engineer Technical Evaluation Reports or TER's) are permitted by code (see FBC 1604.4) through the authority provided to a registered professional engineer or architect by a 'rational analysis' or through the local approval process.

...It's just been a longstanding myth that an "NOA" is required for all products...

Adams Hall - Winter Park, FL

IS A PRODUCT APPROVAL REQUIRED FOR PHANTOM SCREENS?

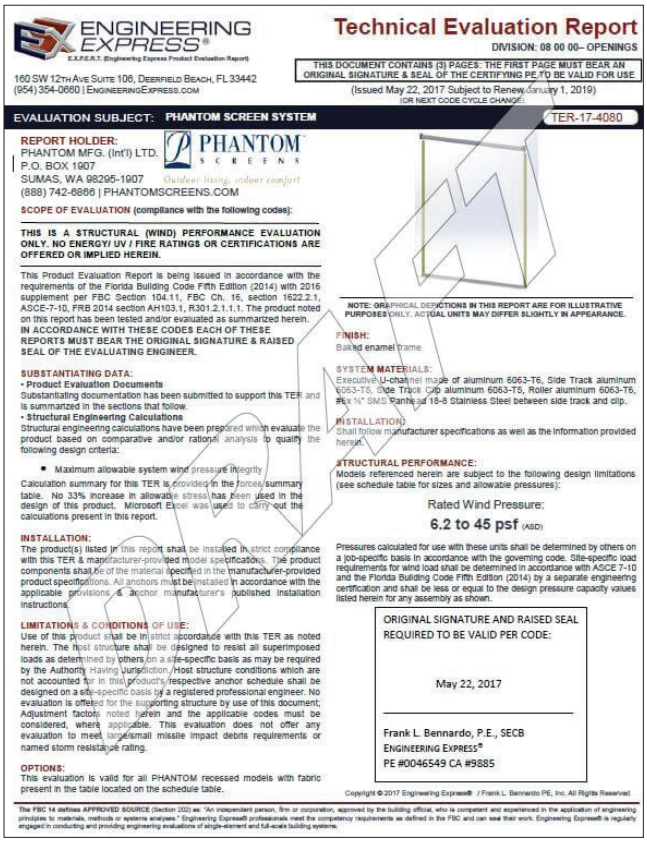
Here's the critical fact about Phantom Screens: They aren't even designed for or intended to protect glazed openings or the building envelope from flying debris, cyclical loads, or storms in any way. They are to be retracted when any threat of winds approach limiting conditions as evaluated by an engineer or manufacturer, and need only comply with requirements that they don't become 'flying debris' and cause potential injury during a storm. A Phantom screen is best described as a bug screen for an outdoor patio.

Whether a Phantom Screen is installed outside of a glazed area or not, that does alter the requirement for impact protection to be placed on a glazed surface. Per Florida Building Code Section 1609.1.2, a triggering windstorm event requires an impact protection system be placed over glazed openings when a building lies in the wind-borne debris region (unless the glazing is large missile impact rated). Since a Phantom Screen is not intended to serve as an impact protection device, it can be installed so long as the glazed openings behind it meet this code in some way. Therefore, a product approval is not required when a Phantom Screen is installed. Since it is an engineer's obligation to ensure products exposed to high wind do not become wind borne debris objects, the evaluation report serves as a safe rating of the product installed to the rated threshold to meet this obligation.
the outdoors.

Generation X Concept Home 2012 - Orange County, FL

Why We Use a Technical Report

Absent of testing, an engineering 'rational analysis' can be performed on any product not meeting the requirements for protection of the building envelope to demonstrate the products compliance. Without testing, that evaluation must consider all failure modes and their respective required factors of safety when determining a rated safe load limit. The rating on the Phantom Screen Technical Evaluation Report is the safe load wind pressure limit which the screen shall be retracted so as to not risk the product risking injury to neighboring areas. It should be noted that the product could be rendered non-operational after the high wind event it is exposed to so long as it remains intact at the rated pressure. Regardless, the screen shall be retracted (in the open position) or removed so as to not risk any damage to the attaching structure or neighboring areas during any high wind event.



ENGINEERING EXPRESS®
E.X.P.E.R.T. (Engineering Express Product Evaluation Report)
160 SW 12TH AVE SUITE 106, DEERFIELD BEACH, FL 33442
(954) 354-0660 | ENGINEERINGEXPRESS.COM

Technical Evaluation Report
DIVISION: 08 00 00– OPENINGS
THIS DOCUMENT CONTAINS (3) PAGES: THE FIRST PAGE MUST BEAR AN ORIGINAL SIGNATURE & SEAL OF THE CERTIFYING PE,TO BE VALID FOR USE.
(Issued May 22, 2017 Subject to Renew January 1, 2019)
(OR NEXT CODE CYCLE CHANGE)

EVALUATION SUBJECT: PHANTOM SCREEN SYSTEM
TER-17-4080

REPORT HOLDER:
PHANTOM MFG. (Int'l) LTD.
P.O. BOX 1907
SUMAS, WA 98295-1907
(888) 742-6866 | PHANTOMSCREENS.COM

SCOPE OF EVALUATION (compliance with the following codes):

THIS IS A STRUCTURAL (WIND) PERFORMANCE EVALUATION ONLY. NO ENERGY/ UV / FIRE RATINGS OR CERTIFICATIONS ARE OFFERED OR IMPLIED HEREIN.

This Product Evaluation Report is being issued in accordance with the requirements of the Florida Building Code Fifth Edition (2014) with 2016 supplement per FBC Section 104.11, FBC Ch. 16, section 1622.2.1, ASCE-7-10, FRB 2014 section AH103.1, R301.2.1.1.1. The product noted on this report has been tested and/or evaluated as summarized herein. IN ACCORDANCE WITH THESE CODES EACH OF THESE REPORTS MUST BEAR THE ORIGINAL SIGNATURE & RAISED SEAL OF THE EVALUATING ENGINEER.

SUBSTANTIATING DATA:
- Product Evaluation Documents
Substantiating documentation has been submitted to support this TER and is summarized in the sections that follow.
- Structural Engineering Calculations
Structural engineering calculations have been prepared which evaluate the product based on comparative and/or rational analysis to qualify the following design criteria:

- Maximum allowable system wind pressure integrity

Calculation summary for this TER is provided in the forces summary table. No 33% increase in allowable stress has been used in the design of this product. Microsoft Excel was used to carry out the calculations present in this report.

INSTALLATION:
The product(s) listed in this report shall be installed in strict compliance with this TER & manufacturer-provided model specifications. The product components shall be of the material specified in the manufacturer-provided product specifications. All anchors must be installed in accordance with the applicable provisions & anchor manufacturer's published installation instructions.

LIMITATIONS & CONDITIONS OF USE:
Use of this product shall be in strict accordance with this TER as noted herein. The host structure shall be designed to resist all superimposed loads as determined by others on a site-specific basis as may be required by the Authority Having Jurisdiction. Host structure conditions which are not accounted for in this product's respective anchor schedule shall be designed on a site-specific basis by a registered professional engineer. No evaluation is offered for the supporting structure by use of this document; Adjustment factors noted herein and the applicable codes must be considered, where applicable. This evaluation does not offer any evaluation to meet large/small missile impact debris requirements or named storm resistance rating.

OPTIONS:
This evaluation is valid for all PHANTOM recessed models with fabric present in the table located on the schedule table.

NOTE: GRAPHICAL DEPICTIONS IN THIS REPORT ARE FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL UNITS MAY DIFFER SLIGHTLY IN APPEARANCE.

FINISH:
Baked enamel frame.

SYSTEM MATERIALS:
Executive U-channel made of aluminum 6063-T6, Side Track aluminum 6063-T5, Side Track Clip aluminum 6063-T5, Roller aluminum 6063-T6, #8 x ½" SMS Panhead 18-8 Stainless Steel between side track and clip.

INSTALLATION:
Shall follow manufacturer specifications as well as the information provided herein.

STRUCTURAL PERFORMANCE:
Models referenced herein are subject to the following design limitations (see schedule table for sizes and allowable pressures):

Rated Wind Pressure:
6.2 to 45 psf (ASD)

Pressures calculated for use with these units shall be determined by others on a job-specific basis in accordance with the governing code. Site-specific load requirements for wind load shall be determined in accordance with ASCE 7-10 and the Florida Building Code Fifth Edition (2014) by a separate engineering certification and shall be less or equal to the design pressure capacity values listed herein for any assembly as shown.

ORIGINAL SIGNATURE AND RAISED SEAL REQUIRED TO BE VALID PER CODE:

May 22, 2017

Frank L. Bennardo, P.E., SECB
ENGINEERING EXPRESS®
PE #0046549 CA #9885

The FBC 14 defines APPROVED SOURCE (Section 202) as: "An independent person, firm or corporation, approved by the building official, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses." Engineering Express® professionals meet the competency requirements as defined in the FBC and can seal their work. Engineering Express® is regularly engaged in conducting and providing engineering evaluations of single-element and full-scale building systems.

Phantom Screens Techincal Evaluation Report TER-17-4080
Structural (Wind) Performance Evaluation

Last Note – Wind Speed or Wind Pressure?

Many who don't understand how wind works will state a product is rated to a specific wind velocity which is false advertising and not true. "Rated to 180 MPH wind" is sometimes used for example, a false and misleading statement that comes with many unspoken disclaimers. The formula that converts wind velocity to wind pressure has many variables. Each variable affects the resulting pressure for a given wind velocity. A 100mph wind velocity for example can produce pressures as low as in the mid-teens (psf) to upwards of 50 psf, even 60 psf and more[1]. These variables include such features as building height, location of the area on the building, terrain around the building, whether the building is on or near a hill, slope of the roof, size of the area in consideration, and more. There's even two types of wind speeds and pressures which complicates things further, Allowable stress design and Load Factored Design (click here for more) as well as different wind codes that govern (Some use ASCE 7-05, most use ASCE 7-10, ASCE 7-16 just arrived with yet different conversion factors for some building surfaces for the same wind velocity). Engineers deal with a common denominator when designing structures (wind pressure) which sets a uniform standard anywhere (yes even on the moon) for a force which a product can resist. Engineering Express provides a free online tool to convert wind velocity to wind pressure. Click Here to access it (utilizing ASCE 7-10).

Additional information on many topics above can be found on the Florida Website by clicking here.

[1] Exposure D, 300 ft MRH, Zones 5 and 3 respectively, 10sqft tributary area, enclosed structure, flat terrain, Kd=0.85, Forces upwards of 70psf + possible for hilly terrain, partially enclosed, Kd=1.0

ABOUT ENGINEERING EXPRESS

Engineering Express is a unique structural firm specializing in building envelope consultation, product evaluations, specialty specialty designs, and forensic and disaster assessment. We work with contractors, architects, developers, owners, product manufacturers, and program managers across America.

They provide these services with the highest quality standards utilizing the latest technology and an expert staff that adds value to your team.

Their expansive corporate office in Deerfield Beach, FL provides a technical environment in an inviting setting to foster productive out-of-the-box creativity.

Engineering Express has performed over 200 expert witness cases to damaged buildings affected by storms in Florida and Texas since 2005 and over 500 building product evaluations to date and continues to design specialty structures for buildings both commercial and residential across the country.

ABOUT PHANTOM SCREENS

Phantom Screens® is North America's leading provider of retractable screens. Phantom's screens offer insect protection, solar shading and enhanced privacy for doorways, windows, and large openings such as outdoor living spaces, and lift & slide door systems. Phantom retractable screens are designed to pull or lower into place when required and retract out of sight when not in use.

Since its beginning in 1992, the Phantom brand has been synonymous with quality, innovative product development, and superior customer service. According to independent market research, 97% of Phantom customers rate their overall Phantom experience from good to outstanding.

Phantom Screens is a Registered Provider with the American Institute of Architects Continuing Education System (AIA/CES), AIBD, and a member of the NAHB's Leading Supplier Council.