ENGINEERING EXPRESS®

Technical Evaluation Report

DIVISION: 08 00 00 – OPENINGS

(Subject to Renew January 1, 2024 or next code cycle)

THIS DOCUMENT CONTAINS (4) PAGES. THIS DESIGN EVALUATION TO BE PREPARED & SUBMITTED ALONGSIDE A CORRESPONDING, SEALED, SITE-SPECIFIC DOCUMENT BY A DESIGN PROFESSIONAL. ENGINEER'S DIGITAL OR ORIGINAL HAND SEAL REQUIRED FOR USE. UNCERTIFIED COPIES NOT VALID FOR PERMIT.

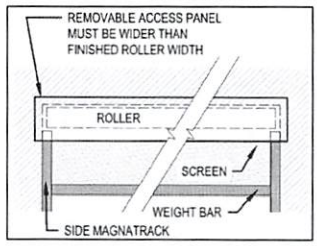
EVALUATION SUBJECT: MAGNATRACK ROLLING SCREEN WIND ABATEMENT SYSTEM

TER-22-52902

REPORT HOLDER:
Progressive Screens
7839 Fruitville Rd
Sarasota, FL 34240
(941) 360-0037 | PROGRESSIVESCREENS.COM

MAGNATRACK
US PATENT 9719292

Florida Building Code Seventh Edition (2020)
International Building Code (2015 & 2018)



NOTE: THE GRAPHICAL DEPICTIONS IN THIS REPORT ARE FOR ILLUSTRATIVE PURPOSES ONLY AND MAY DIFFER IN APPEARANCE.

FINISH: Powder-coated, optional wet coat.

STRUCTURAL PERFORMANCE:

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

Rated For Wind Speeds ***Not Exceeding* 75 MPH**
ASCE-7 / Exposure D / Installation Elevation Up To (60 ft)
System to be Fully Retracted When Sustained Wind Speeds Exceed 40 MPH to Avoid Damage To Screen Material. Rips or Tears in Screen Material Shall Void Certifications Provided Herein & May Void Manufacturer Warranty.

- Required design wind pressures shall be determined on a site-specific basis in accordance with ASCE 7 and applicable sections of the building code(s) being referenced in accordance with ASD methodology.
- Required design pressures shall be less than or equal to the allowable design pressure capacity values listed herein for any assembly as shown.
- Valid for installation inside and outside the High-Velocity Hurricane Zone (HVHZ). No Wind Resistance or Impact rating is offered by this product.
- Site-specific design analysis may produce alternate limitations provided maximum rated wind pressures stated herein are not exceeded.

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 Seventh Edition (2020)** per ASCE 7, FBC Building Ch. 16, FBC Building Sections 104.11 & 1622.2.1, & FBC Residential Sections AH103.1 & R301.2.1.1.1.1. This report is also in accordance with the **International Building Code (2012, 2015, & 2018).** 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 OR DIGITAL SEAL OF THE EVALUATING ENGINEER.

SUBSTANTIATING DATA:

• Product Evaluation Documents

Substantiating documentation has been submitted to provide this TER and is summarized in the sections below.

• 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:

- Max. allowable system wind pressure integrity

Calculation summary is included in this TER and appears herein. NOTE: No 33% increase in allowable stress has been used in the design of this product.

Calculations supported by Magnatrack FSA FL# 30798, signed & sealed by Hermes F Norero, P.E. & testing reports listed on Page 4 of this TER

HURRICANE WARNING REQUIREMENT:

Screen system is not designed to withstand named storm wind events and is not rated for impact resistance of any kind. Screen only design Therefore, screen shall be retracted during any named storm (75 mph sustained winds) to preserve system integrity.

LIMITATIONS & CONDITIONS OF USE:

Use of the product(s) listed herein 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 recessed or surface installation of Magnatrack Rolling Screen Wind / Sun / Insect abatement System using a 4" or 5.5" roller with appropriate fabric detailed herein, at (1) project address. Maximum installed dimensions are not to exceed 30 ft width x 12 ft height as detailed in the design schedules herein. Any structural changes outside of the design as described herein would void this certification.

SYSTEM MATERIALS:

U-channel made of aluminum 6063-T6, Magnatrack Side Track aluminum 6063-T5, Side Track Clip aluminum 6063-T5, Roller aluminum 6063-T6, #6x ½" TEK screw (Robertson/ square drive) 1018 Steel and js500 coating (or Equiv.) between side track and clip. Materials not noted to be 6063-T6 aluminum min.

VISIT ECALC.IO/52902

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ATTENTION
Scanned copies not to be used to obtain permit

July 19, 2022

Frank Bennardo, P.E., SECB
ENGINEERING EXPRESS®
FL PE #0046549 FLCA #9885

☐ If Checked, Certifying Engineer and PE # Appear Above

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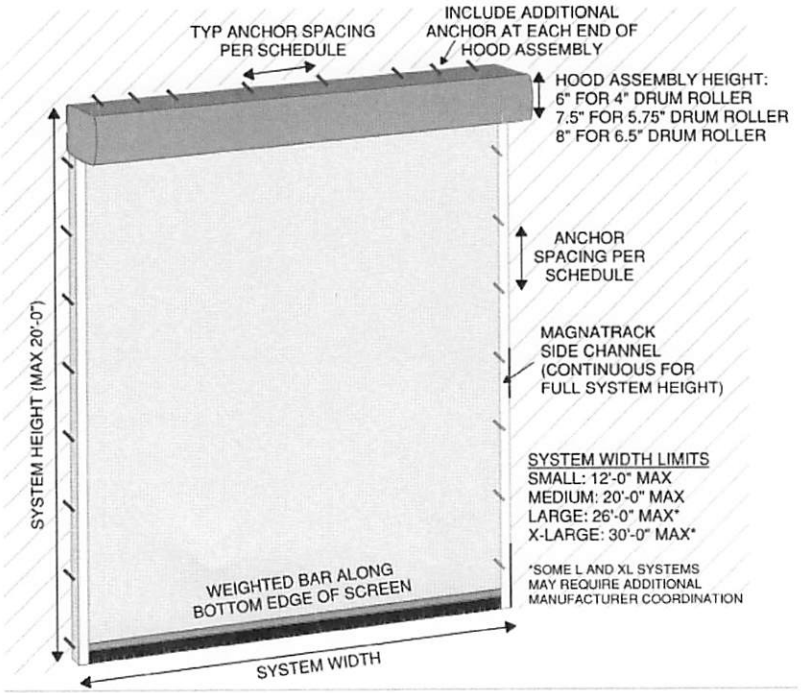
The FBC 7th Edition (2020) define APPROVED SOURCE (Section 202) as: "An independent person, firm or corporation, approved by the building official, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses." Engineering Express® professionals 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 tests.

PRODUCT INSTALLATION

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(s) specified in the manufacturer-provided product specifications. All anchors must be installed in accordance with the applicable provisions & anchor manufacturer's published installation instructions.



Allowable Screen Fabrics:

Bug Screen:	SuperScreen 17/14 Fiberglass Mesh. Porosity ~50% To 80%
	SuperScreen 20/20 No-See-Um Mesh Screen. Porosity ~70% To 80%
Sun Shade:	Textiline Nano 95 Sun Screen. Porosity ~95%
	Textiline Nano 97 Sun Screen. Porosity ~97%
Solid:	Solid Screen Material Utilized May Vary. Porosity = 100% (Fully Solid)

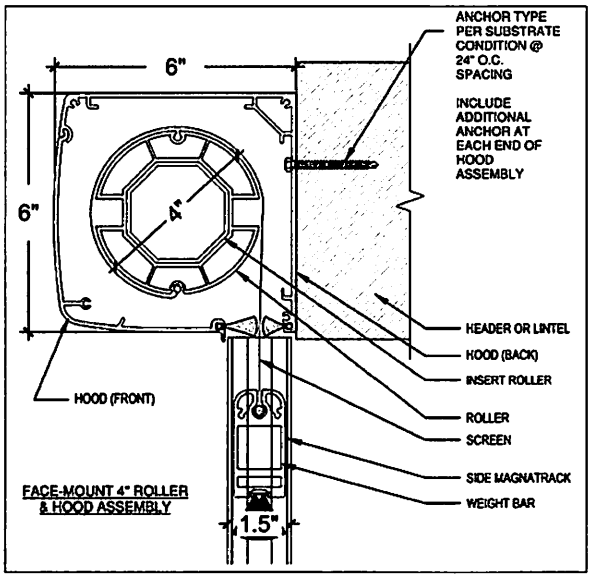
Magnatrack Side Track Anchor Spacing Requirement Schedule

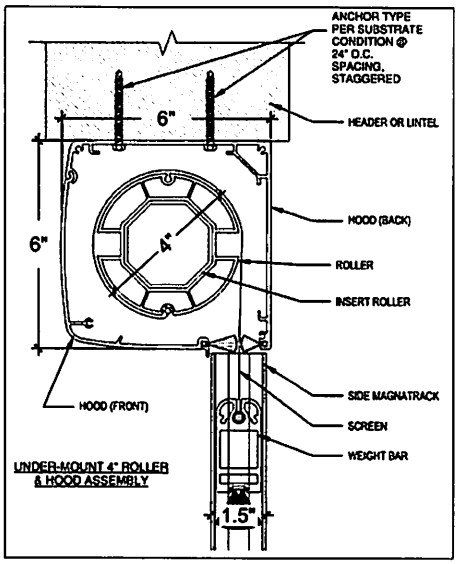
Maximum Allowable Wind Speed = **75 MPH** (Sustained Winds); Design Loading not to Exceed **±10 PSF (ASCE 7, ASD)**
Screens are to be fully retracted during wind events exceeding the design criteria above.
For Build-Out Conditions, Refer appropriate Flush or Recessed Spacing for host connection.

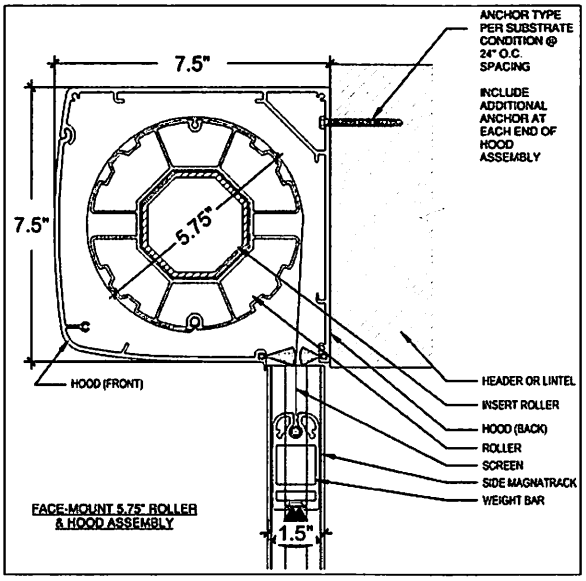
Screen Fabric Style	System Size	Roller Size	To Concrete Use Anchor A O.C. Spacing Per Mount Orientation		To Wood Use Anchor B or C O.C. Spacing Per Mount Orientation		To Filled CMU Use Anchor D O.C. Spacing Per Mount Orientation	
			Face	Under	Face	Under	Face	Under
Bug Screen	S	4" Drum	24"	24"	24"	24"	24"	24"
	M		24"	24"	18"	15"	24"	24"
	L	5.75" Drum	24"	24"	12"	12"	18"	18"
	XL		24"	24"	12"	12"	18"	18"
Sun Shade	S	4" Drum	24"	24"	24"	21"	24"	24"
	M		24"	24"	15"	15"	21"	21"
	L	5.75"	24"	24"	12"	12"	18"	18"
	XL	6.5"	24"	24"	12"	9"	15"	15"
Solid Vinyl Screen	S	4" Drum	24"	24"	24"	21"	24"	24"
	M		24"	24"	15"	15"	21"	21"
	L	5.75"	24"	24"	12"	12"	18"	18"
	XL	6.5"	24"	24"	12"	9"	15"	15"

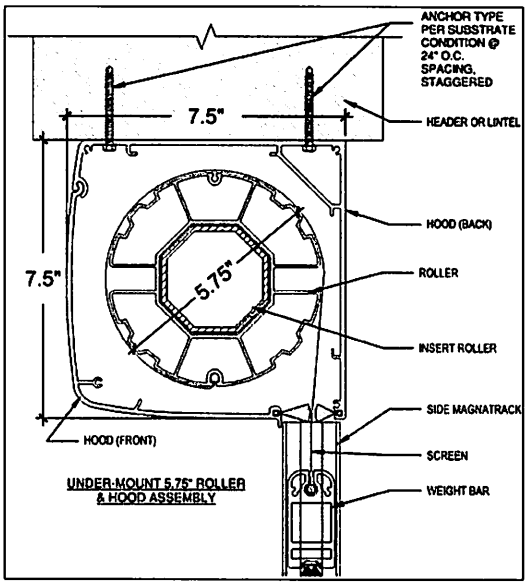
IN ALL CONDITIONS IT IS THE RESPONSIBILITY OF THE PERMIT HOLDER TO ENSURE THE HOST STRUCTURE IS CAPABLE OF WITHSTANDING THE RATED GRAVITY, LATERAL, AND UPLIFT FORCES BY SITE-SPECIFIC DESIGN. NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, IS OFFERED BY ENGINEERING EXPRESS AS TO THE INTEGRITY OF THE HOST STRUCTURE TO CARRY DESIGN FORCE LOADS INCURRED BY THIS UNIT.

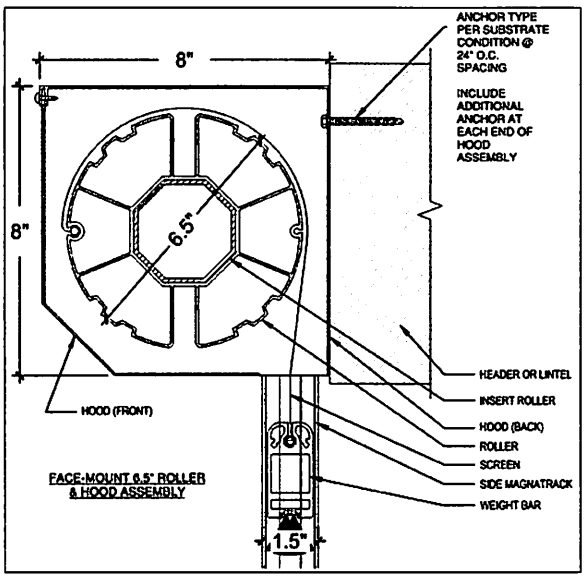
ROLLER & HOOD MOUNTING ORIENTATIONS & ASSEMBLIES

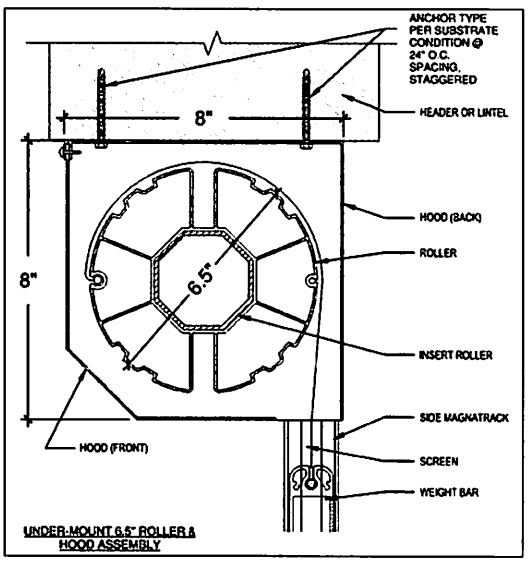




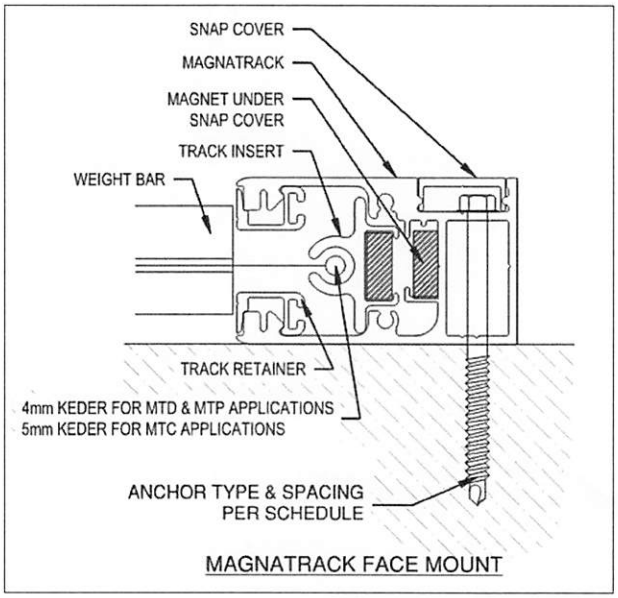




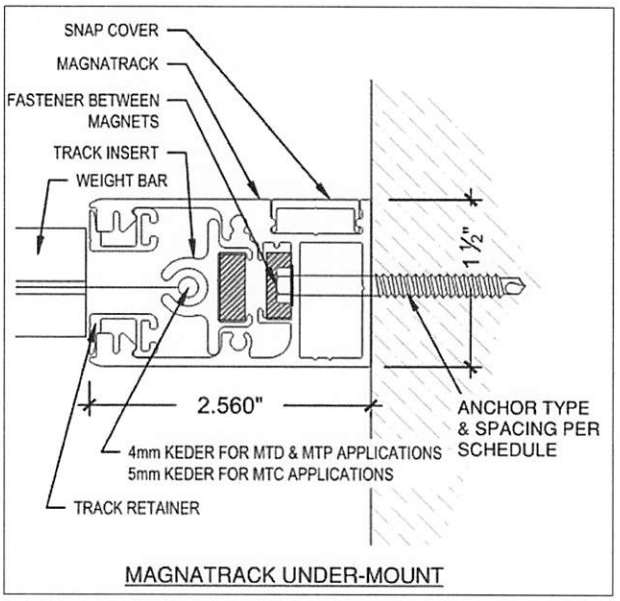




MAGNATRACK MOUNTING ORIENTATIONS & ASSEMBLIES

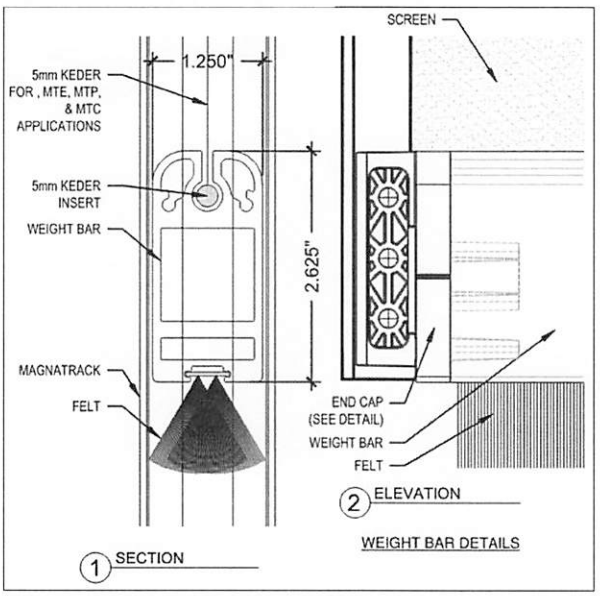


MAGNATRACK FACE MOUNT



MAGNATRACK UNDER-MOUNT

WEIGHT BAR ASSEMBLY



WEIGHT BAR DETAILS

PRODUCT TESTING INFORMATION

Per testing information provided by the client

1. Product Testing Performed by Blackwater Testing Inc (FBC Organization #TST10394)
Report # BT-PGS-19-001 Date: 10/16/2019
Signed & Sealed by Constantin Bortes, P.E. FL# 77915
Report # BT-PGS-20-001 Date: 12/02/2020
Signed & Sealed by Michael Caldwell, P.E. FL# 49979

Additional testing information for this product per test reports referenced on FSA FL# 30798

Proj. #	Remarks	By	Checked	Date
22-52902	Initial Issue	CCB	FLB	6/29/22

Anchor to Host Structure Details
(Anchor Spacing As Listed In Schedule)

A. – 1/4" ITW Redhead Tapcon embedded 1 3/4" into 3,000 psi. 2 1/2" from edges minimum.

B. – 1/4" ITW Redhead Tapcon embedded 2 1/4" into SG= 0.55 wood. 2" from edge minimum.

C. - #16 or 1/4" Wood screw Gr 2. Min, 2.4" min penetration into main member (SG= 0.55) edge distance 1.5" min

D. – 1/4" Redhead Trubolt Wedge Anchor embedded 2" into Grout filled masonry (f'm= 1500 psi) minimum. With edge distance of 3.75" minimum.

System Notes:

1. Design considers minimum wind & loading conditions (75 MPH / 10 PSF) & fabric porosity as required. System to be fully retracted during named wind events & conditions exceeding those listed herein
2. Design pressures are STATIC UNIFORM LOAD only. Cyclical forces have not been considered in this evaluation.
3. In no case has the product been tested or approved for any missile level (B, C, D, or E) per ASTM 1886/1996
4. The product(s) listed in this report shall be installed in strict compliance with this TER & manufacturer-provided model specifications.
5. Use reinforced clip with additional manufacturer specified screw to increase capacity as an option, if required. Equivalent anchors are permitted as long as they have proven capacity.
6. Fabric seam and zipper welds are outside the scope of this engineering.

HURRICANE WARNING REQUIREMENT:

Screen system is not designed to withstand named storm wind events, and is not rated for impact resistance of any kind. Therefore, screen shall be retracted during any named storm (75 mph sustained winds) to preserve system integrity.