

For Operable Egress Type-Rectangular Only  
Hurricane Window and Door opening Protection and Security Screen

Section 107101 Hurricane Screens-Operable/Hinged

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1.0 GENERAL

1.1 DESCRIPTION

Provide permanently installed heavy-duty Aluminum Hinged Hurricane, Energy Saving and Security Screens. Screens and installation shall meet the State of Florida Building Codes, and shall meet Miami-Dade County Notice of Acceptance. Product screen model "hinged" as provided by Qualitas Manufacturing Inc. (QMI), 1661 Glenlake Ave. Itasca IL, 60143 or approved equal shall meet or exceed Large and Small Missile Impact for high velocity hurricane zones (HVHZ) as indicated in these specifications and drawings.

Hurricane, Energy Saving and Security Protection Screens shall provide continuous and easy window viewing as well as provide air ventilation and egress when required. Shutters or Screens that prohibit easy viewing and air ventilation shall not be accepted. Perforated or Expanded Metal Shutters/Screens, Solid Panel Shutters, Accordion, Electric or Pull down Shutters shall not be accepted under this specification section.

1.2 SCOPE

Supply and install new aluminum security screen units covered under this section. All screen units covered under this specification shall be side hinged, consisting of an aluminum main frame, aluminum sub-frame/sash, stainless steel wire cloth, concealed hinges and have a continuous locking system with a single lever emergency release. Screws, anchors, fasteners and springs shall be stainless steel or corrosion resistant galvanized steel. Piano hinges shall not be accepted. No plastic, steel or galvanized steel parts shall be accepted. Screens shall be permanently installed.

2.0 MATERIAL

2.1 MAINFRAME AND SUB-FRAME/SASH

Screen mainframe shall be hollow extruded aluminum alloy minimum 6063 T5 with a minimum 2" face, 1 1/4" thick and .060 -.090 wall thickness. The screen sub-frame/sash shall consist of solid extruded aluminum alloy 6063 T5 with a minimum wall thickness .062. Mainframe and Sub-Frame/Sash shall have a minimum tensile strength of 22,000 lbs. per square inch.

2.2 WIRE LOCK RETAINERS

Screen wire lock retainers shall be of solid extruded aluminum alloy of 6063 T5, .062 wall thickness and having a minimum tensile strength of 22,000 pounds per square inch.

2.3 MULLIONS

All screen mullions when required shall be of a hollow extruded aluminum alloy of 6063 T5 and a minimum wall thickness of .062 and a tensile strength of 22,000 pounds per square inch

#### 2.4 HINGES

All operable hinges shall be concealed type and constructed of a hollow aluminum extruded alloy 6063 T5, stainless steel pins, springs and copper bushings.

#### 2.5 HARDWARE

All fasteners, screws, and other miscellaneous fastening and hardware components shall be of aluminum, stainless steel or corrosion resistant steel providing maximum strength for security and weather protection. No plastic parts shall be accepted.

#### 3.0 CONSTRUCTION

ASSEMBLY: All screen units shall be assembled with corner gusset construction in a secure workmanlike manner to perform as herein specified to assure a complete constructed unit. All screen sub-frame and mainframe units shall fit together as one unit with a minimum spacing between the two frame sections of 1/8". The locking mechanism shall be viewed and operated from the interior and prohibit any unwanted opening from the exterior. All screens shall be constructed with one continuous piece of stainless steel wire.

#### 3.1 MAINFRAME

All corners of screen mainframe shall be miter cut, fitted together with a .125 thick, 2" aluminum architectural angles. Each mainframe corner will be secured with a minimum of four aluminum pop rivets. No exposed fasteners on the interior or exterior of mainframe are permitted.

#### 3.2 SUB-FRAME/SASH

Screen Sub-frame shall be miter cut, fitted together with two .250 thick and one .125 thick, 2" aluminum architectural angles. Weep holes are provided at the bottom of the sub-frame. Each sash corner shall have a minimum of four high pressure crimper peens.

#### 3.2 MULLIONS

Mullions shall be retrofitted as to fit tight against the mainframe unit.

#### 3.3 SCREEN WIRE

Screen wire material is high-tensile 304 stainless steel with mesh count to be 12 x 12 strands per inch at 0.028 diameter. Screen wire mesh shall be one continuous piece with 1" wide, 90 degree bends on all four sides.

#### 3.4 WIRE LOCK RETAINERS

Screen Wire shall be placed into mainframe receptor channels and wire lock retainer shall be miter cut, fitted, and placed over 1" wire angles on all four sides, fastened to screen mainframe with #12 x 3/4 stainless steel or corrosion resistant steel screws 4" on centers.

#### 4.0 HARDWARE

#### 4.1 FASTENERS

All fasteners, screws, and other miscellaneous fastening and hardware components shall be of aluminum, stainless steel or corrosion resistant galvanized steel providing maximum strength for security and weather protection. No plastic parts shall be accepted.

#### 4.2 LOCKING MECHANISM

Each screen unit shall have only one emergency exit locking system per screen for easy exiting. Locking System shall consist of a solid extruded 6063 T5 aluminum panic release lever. Screen shall open by simply pushing with a finger, hand, arm, elbow, foot or any human extremity permitting adults, children, elderly and handicap easy exiting. Screen Locking System shall return to its locking mode simply by pulling the screen mainframe inward from the interior or pushing it inward from the exterior. Screen Locking System shall be concealed and tamper-proof when in the locked position from exterior manipulation and pressure.

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#### 4.3 HINGES

There shall be a minimum of two (2) concealed hinges per screen unit, three or more if size span is over 40".

#### 4.4 VIBRATION

Each screen unit shall prevent mainframe rattle due to contact with sub-frame/sash.

#### 5.0 FINISH

##### 5.1 CLEANING / PAINTING

The exposed surfaces of all aluminum members, screen material, and screws shall be clean and free from serious surface blemishes. Screen wire to be corrosion pre-treated and powder coated with standard Kynar Powder Coat, electrostatic applied, and baked on, black only. Frame and sash profiles to be standard Kynar Powder Coated, electrostatic applied, and baked on. Standard colors are White and Bronze, with custom colors available upon customer request. Finish shall be selected by owner, architect or authorized agent. Samples of the standard or custom finishes shall be provided upon request. Warranty on the paint finish shall be guaranteed for a minimum of 10 years.

#### 6.0 INSTALLATION

##### 6.1 INSTALLATION

The specified width of the screen main frame shall be the measured width from inside to inside of the window jamb plus 6" to ensure 2-1/2" minimum edge distance for fasteners. The specified height of the screen main frame shall be the measured height from finished window head to window sill plus 6" to ensure 2-1/2" minimum edge distance for fasteners. Where face mounting of screen frame is not applicable, inside mounting of the screen frame with a tubing system shall apply. All face and inside mounting systems shall be installed per approval documents from the State of Florida and installed by a licensed and certified contractor by the State of Florida.

- A. Concrete Typhoon Installation: per Miami-Dade County Hurricane Category 5 requirements in concrete frame to be 1/4" dia. Elco Tapcon anchors of sufficient length to achieve a minimum of 1-1/4" embedment into concrete or masonry. Spacing of 1/4" dia. Elco Tapcon anchors 6" from corners and 9" on center maximum thereafter or per approval documents.
- B. Timber Frame Typhoon Installation: per Miami-Dade County Hurricane Category 5 requirements in wood framing to be 1/4" lag wood screw anchors of sufficient length to achieve a minimum embedment of 1-5/16" into wood framing. Spacing screws 6" from corners and 9" on center maximum thereafter or per approval documents.
- C. Security installation: recommended spacing 6" from corners and fastener spacing sufficient to firmly attach screen frame to substrate. Fasteners should be appropriate and sufficient for substrate. Fasteners must be attached to structure. Attachment to window or door frames is unacceptable.

##### 6.2 CLEAN UP

The contractor shall be responsible for clean up and removal of any debris caused by the screen installation.

##### 6.3 DAMAGES

The contractor shall be responsible for any property or tenant damages due to negligence during the screen installation.

#### 7.0 MEASUREMENTS & SITE VISIT

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#### 7.1 FIELD MEASUREMENTS

Awarded contractor shall be responsible for site visit, exact field measurements and quantities prior to and after submittal of their bid

#### 8.0 QUALITY ASSURANCE

##### 8.1 GUARANTEE

All installation shall be guaranteed for a period of one (1) year. All screen hardware and shall be guaranteed for a period of one (1) year from the date of installation.

##### 8.2 CERTIFICATIONS/REPORTS

All screen units under this specification shall have been tested by an independent testing laboratory, meet or exceed the minimum requirements per Miami-Dade County Notice of Acceptance Number 05-0520.01 Report and a minimum Approved Screen Test Size of 61.50" x 144.50". Screen Units shall have Miami-Dade County Product Control Approved Label. As a minimum, stainless steel wire cloth 12 x 12 x .028 diameter shall be used.

##### 8.3 PRODUCT APPROVALS

Prior product approval is required to be eligible for bidding. At a minimum of 10 days prior to the bid date, a full sized sample with literature, valid Independent Laboratory Test Reports, valid Miami-Dade Notice of Acceptance Number, Miami-Dade County Product Control Approval Label, Anchoring Reports stamped and approved by State of Florida Licensed Engineer and shop drawings at 1/8" scale must be submitted to the Architect, Owner or Authorized Agent for review and acceptance as well as other documents, certifications and requirements in this specification.

#### 9.0 DEFINITION STATEMENT

The requirements in this specification are intended to provide the very best product based on manufacturer's model types, experience, testing reports, certifications and salt air performance.

END OF SECTION