

# TEXAS DEPARTMENT OF INSURANCE

Engineering Services / MC 103-3A 333 Guadalupe Street P.O. Box 149104 Austin, Texas 78714-9104  
Phone No. (512) 322-2212 Fax No. (512) 463-6693

---

## PRODUCT EVALUATION WIN-141

Effective July 1, 2008

*The following product has been evaluated for compliance with the wind loads specified in the **International Residential Code (IRC)** and the **International Building Code (IBC)**. This product shall be subject to reevaluation **July 2009**.*

*This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.*

*This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.*

### **Series 3500/3540 Vinyl Single Hung Windows, New Construction or Replacement Windows, Non-impact Resistant, manufactured by**

**MI Windows and Doors, Inc.**  
**P. O. Box 370**  
**650 West Market Street**  
**Gratz, PA 17030-0370**  
**Telephone: (717) 365-3300**

will be acceptable in designated catastrophe areas along the Texas Gulf Coast when installed in accordance with the manufacturer's installation instructions and this product evaluation.

### **PRODUCT DESCRIPTION**

The Series 3500/3540 windows are vinyl single hung windows. The vinyl single hung windows evaluated in this report are individual, non-impact resistant windows. The vinyl single hung windows may be installed as either new construction or replacement windows. This product evaluation report is for vinyl single hung windows based on the following tested constructions:

#### **General Description:**

System	Description	Label Rating
1	Series 3500/3540 Vinyl Single Hung Windows; Fin Frame; (OX)	H-R30 48 x 78
2	Series 3500/3540 Vinyl Single Hung Windows; Fin Frame; (OX)	H-R30 44 x 72
3	Series 3500/3540 Vinyl Single Hung Windows; Fin Frame; (OX)	H-R35 36 x 74
4	Series 3500/3540 Vinyl Single Hung Windows; Flange Frame; (OX)	H-R30 44 x 72
5	Series 3500/3540 Vinyl Single Hung Windows; Flange Frame; (OX)	H-R40 36 x 62
6	Series 3500/3540 Vinyl Single Hung Windows; Finless Frame; (OX)	H-R30 48 x 96
7	Series 3500/3540 Vinyl Single Hung Windows; Finless Frame; (OX)	H-R35 36 x 72

#### **Product Dimensions:**

System	Overall Size	Sash Size	Fixed Daylight Opening Size
1	48" x 78"	45 $\frac{1}{2}$ " x 38 $\frac{1}{16}$ "	43 $\frac{5}{8}$ " x 35 $\frac{3}{16}$ "
2	44" x 72"	41 $\frac{9}{16}$ " x 35 $\frac{1}{16}$ "	39 $\frac{9}{16}$ " x 32 $\frac{3}{16}$ "

**Product Dimensions (Continued):**

System	Overall Size	Sash Size	Fixed Daylight Opening Size
3	36" x 74"	33 <sup>9</sup> / <sub>16</sub> " x 36 <sup>1</sup> / <sub>16</sub> "	31 <sup>5</sup> / <sub>8</sub> " x 33 <sup>3</sup> / <sub>16</sub> "
4	44" x 72"	42" x 35 <sup>5</sup> / <sub>16</sub> "	40" x 32 <sup>1</sup> / <sub>8</sub> "
5	36" x 62"	34" x 30 <sup>3</sup> / <sub>8</sub> "	32 <sup>1</sup> / <sub>8</sub> " x 27 <sup>7</sup> / <sub>16</sub> "
6	47 <sup>5</sup> / <sub>8</sub> " x 95 <sup>1</sup> / <sub>2</sub> "	45 <sup>1</sup> / <sub>2</sub> " x 35 <sup>1</sup> / <sub>2</sub> "	43 <sup>5</sup> / <sub>8</sub> " x 56"
7	35 <sup>7</sup> / <sub>8</sub> " x 71 <sup>9</sup> / <sub>16</sub> "	33 <sup>13</sup> / <sub>16</sub> " x 35 <sup>1</sup> / <sub>8</sub> "	31 <sup>5</sup> / <sub>8</sub> " x 33"

**Glazing Description:**

System	Glass Construction <sup>1</sup>	Glazing Method <sup>2</sup>
1-4; 6-7	IG-1	GM-1
5	IG-2	GM-1

Note: <sup>1</sup> See the "Glass Construction Key" for the glazing construction.

<sup>2</sup> See the "Glazing Method Key" for the glazing method description.

**Glass Construction Key:**

IG-1: The fixed lite and the operable sash contain a sealed insulating glass unit. The sealed insulating glass units are comprised of two single strength (<sup>3</sup>/<sub>32</sub>" ) annealed glass lites separated by an aluminum reinforced butyl spacer system.

IG-2: The fixed lite and the operable sash contain a sealed insulating glass unit. The sealed insulating glass units are comprised of two double strength (<sup>1</sup>/<sub>8</sub>" ) annealed glass lites separated by steel reinforced butyl spacer system.

**Glazing Method Key:**

GM-1: The insulating glass units are set from the interior against double-sided adhesive foam glazing tape. The insulating glass units are held in place with rigid vinyl snap-in glazing beads.

**Frame Construction:**

**Systems 1-3:** The frame members are manufactured from extruded vinyl (PVC). The frame corners are mitered and welded construction. The fixed meeting rail is secured to each frame side jamb with a plastic clip. The plastic clip is secured to each side jamb with three (3) screws and to each end of the fixed meeting rail with three (3) screws.

**Systems 4, 6, and 7:** The frame members are manufactured from extruded vinyl (PVC). The frame corners are mitered and welded construction. The fixed meeting rail utilizes end caps that are secured with two (2) screws through the end caps into the fixed meeting rail. The fixed meeting rail is secured to each frame side jamb with three (3) screws through the end caps into the side jambs. The sill utilizes a snap-in vinyl (PVC) insert.

**System 5:** The frame members are manufactured from extruded vinyl (PVC). The frame corners are mitered and welded construction. The fixed meeting rail utilizes end caps that are secured with two (2) screws through the end caps into the fixed meeting rail. The fixed meeting rail is secured to each frame side jamb with three (3) screws through the end caps into the side jambs.

**Sash Construction:** The sash members are manufactured from extruded vinyl (PVC). The sash corners are mitered and welded.

**Reinforcement:**

**Systems 1-3:** All sash members are reinforced with roll-formed I-shaped aluminum reinforcement. The fixed meeting rail utilizes custom shaped roll-formed aluminum reinforcement. The reinforcement extends the length of the members.

**Systems 4-7:** All sash members are reinforced with galvanized steel reinforcement. The fixed meeting rail utilizes galvanized steel reinforcement. The reinforcement extends the length of the members.

**Hardware:**

- Metal sweep lock (Systems 1-3); Two (2) required; Located 6 inches from the ends of the top rail.
- Metal sweep lock (Systems 4-7); Two (2) required; Located 7 inches from the ends of the meeting rail.
- Constant force balance (Systems 1-3, 5-7); Two (2) required; One located in each side jamb.
- Coil balance assembly (System 4); Two (2) required; One located in each side jamb.
- Metal pivot bars (Systems 1-4; 6-7); Two (2) required; Located in the ends of the bottom rail.
- Plastic tilt latches; Two (2) required; Located in the ends of the top rail.

**Product Identification:**

**System 1:** A certification program label (AAMA) will be affixed to the window. The certification program label includes the manufacturer's code name (MLT-9); product name: **Series 3500 SH**; performance characteristics; and approved inspection agency to indicate compliance with the requirements of AAMA/WDMA/CSA 101/I.S.2/A440-05.

**Systems 2 and 3:** A certification program label (AAMA) will be affixed to the window. The certification program label includes the manufacturer's code name (MLT-1); product name: **Series 3540 FIN SH**; performance characteristics; and approved inspection agency to indicate compliance with the requirements of AAMA/WDMA/CSA 101/I.S.2/A440-05.

**System 4:** A certification program label (AAMA) will be affixed to the window. The certification program label includes the manufacturer's code name (MLT-1); product name: **Series 3540 FLANGE SH**; performance characteristics; and approved inspection agency to indicate compliance with the requirements of ANSI/AAMA/NWWDA 101/I.S.2-97.

**System 5:** A certification program label (AAMA) will be affixed to the window. The certification program label includes the manufacturer's code name (MLT-1); product name: **Series 3540 FLANGE SH**; performance characteristics; and approved inspection agency to indicate compliance with the requirements of AAMA/WDMA/CSA 101/I.S.2/A440-05.

**System 6:** A certification program label (AAMA) will be affixed to the window. The certification program label includes the manufacturer's code name (MLT-9); product name: **Series 3240/3540 FINLESS SH**; performance characteristics; and approved inspection agency to indicate compliance with the requirements of ANSI/AAMA/NWWDA 101/I.S.2-97.

**System 7:** A certification program label (AAMA) will be affixed to the window. The certification program label includes the manufacturer's code name (MLT-9); product name: **Series 3540 SH**; performance characteristics; and approved inspection agency to indicate compliance with the requirements of ANSI/AAMA/NWWDA 101/I.S.2-97.

---

## LIMITATIONS

### Design pressures:

System	Maximum Width (in.)	Maximum Height (in.)	Design Pressures (psf)
1	48	78	± 30
2	44	72	± 30
3	36	74	± 35
4	44	72	± 30
5	36	62	± 40
6	47 $\frac{5}{8}$	95 $\frac{1}{2}$	± 30
7	35 $\frac{7}{8}$	71 $\frac{1}{16}$	± 35

**Impact Resistance:** These window assemblies do not satisfy the Texas Department of Insurance's criteria for protection from windborne debris. These window assemblies will need to be protected with an impact protective system when installed in areas where windborne debris is required.

**Acceptance of Smaller Assemblies:** Window assemblies with dimensions equal to or smaller than those specified above are acceptable within the limitations specified in this report.

## INSTALLATION INSTRUCTIONS

**General:** The window assembly shall be installed in accordance with the manufacturer's installation instructions. Detailed installation instructions and drawings are available from the manufacturer.

### Installation:

**Fin Installation to Wood (Systems 1-3):** The wall framing shall be minimum Spruce-Pine-Fir lumber. The window is secured to the wall framing members using the window frame fin with either minimum No. 8 screws or minimum 11 gauge roofing nails. The fasteners shall be located approximately 3 inches from each corner and approximately 8 inches on center along the perimeter of the window. The fasteners shall be long enough to penetrate a minimum of 1  $\frac{1}{2}$ " into the wall framing. The window shall be set in a bed of silicone.

**Frame Installation to Wood (Systems 1-7):** The wall framing shall be minimum Spruce-Pine-Fir lumber. The window is secured to the wall framing members using the window frame head and side jambs with minimum No. 8 screws. Along the head, the fasteners shall be located approximately 13 inches from each corner. Along each side jamb, the fasteners shall be located approximately 6 inches from each corner and approximately 22 inches on center. The fasteners shall be long enough to penetrate a minimum of 1  $\frac{5}{8}$ " into the wall framing. The window shall be set in a bed of silicone.

**Frame Installation to Concrete or CMU (Systems 1-7):** The wall framing shall be precast concrete, cast in place concrete, or concrete masonry units (CMU) construction. Hollow CMU is acceptable. The window is secured to the wall framing members using the window frame head and side jambs with minimum  $\frac{3}{16}$ " diameter Tapcon anchors. Along the head, the fasteners shall be located approximately 13 inches from each corner. Along each side jamb, the fasteners shall be located approximately 6 inches from each corner and approximately 22 inches on center. The fasteners shall be long enough to penetrate a minimum of 1  $\frac{1}{4}$ " into the wall framing and shall be located a minimum of 2  $\frac{3}{8}$ " inches from the edge of the opening. The window shall be set in a bed of silicone.

**Note:** The manufacturer's installation instructions shall be available on the job site during installation. All fasteners shall be corrosion resistant as specified in the International Residential Code (IRC), the International Building Code (IBC), and the Texas Revisions.