SECTION 08 53 13

IMPACT-RESISTANT VINYL WINDOWS

Display hidden notes to specifier. (Don't know how? [Click Here](http://www.arcat.com/sd/display_hidden_notes.shtml))

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\*\* NOTE TO SPECIFIER \*\* Atrium® SafeHarbor® Vinyl Windows & Doors.  
  
This section is based on the products of Atrium® SafeHarbor® Vinyl Windows & Doors, which is located at:  
300 Welcome Center Blvd. P. O. Box 1869  
Welcome, NC 27374-1869  
Tel: 866-658-5320  
Fax: 800-522-3981  
Email: [request info (FNazzaro@atriumwindows.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Atrium%26reg;+SafeHarbor%26reg;+Vinyl+Windows+%26+Doors&coid=45761&rep=&fax=800-522-3981&message=RE:%20Spec%20Question%20(08560ash):%20%20&mf=)  
Web: [www.safeharborwindows.com](http://www.safeharborwindows.com)   
 [ [Click Here](http://www.arcat.com/arcatcos/cos45/arc45761.html) ] for additional information.  
  
Whether you choose vinyl or aluminum, Safe Harbor Impact Resistant Windows & Door are engineered to give coastal homeowners peace of mind. Each window is designed to protect against hurricane force winds and flying debris that heavy winds create.  
It all starts with our technologically advance Impact Resistant Glass.  
Impact Resistant Glass Construction  
SafeHarbor products feature safety glass combined with a thermally efficient insulating glass system.  
The exterior lite consists of single pane glass. The interior lite is constructed of two glass panes laminated with an interlayer membrane that becomes transparent during the laminating process to form an impact resistant protective barrier that also provides outstanding thermal efficiency.  
SafeHarbor products are designed to look like traditional windows and doors, but they are constructed of impact-resistant safety glass embedded in heavy duty, reinforced frames.  
In addition to protecting you from Mother Nature's worst, SafeHarbor products offer:  
\* Greater defense from intruders because forced entry becomes exponentially more difficult, and more durable locks are installed to help maintain the integrity of the glass.  
\* Better protection from the effects of salt air because of their durable vinyl construction.  
\* Blocks 99.9% of the sun's UV rays to help reduce fading of your home's furnishings.  
\* Increased noise reduction as a result of greater structural integrity.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Tubular extruded poly vinyl chloride (PVC) impact rated horizontal sliding windows.
    2. Tubular extruded poly vinyl chloride (PVC) impact rated single-hung windows.
    3. Tubular extruded poly vinyl chloride (PVC) impact rated double-hung windows.
    4. Tubular extruded poly vinyl chloride (PVC) impact rated casement windows.
    5. Tubular extruded poly vinyl chloride (PVC) impact rated picture windows.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 07 60 00 - Flashing and Sheet Metal.
    2. Section 07 91 26 - Joint Fillers.
    3. Section 08 11 74 - Sliding Metal Grilles.
    4. Section 08 32 16 - Sliding Plastic-Framed Glass Doors.
    5. Section 08 51 13 - Aluminum Windows.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American Architectural Manufacturers Association (AAMA):
       1. AAMA/WDMA/CSA 101/I.S.2/A440 - Standard/Specification for Windows, Doors and Unit Skylights.
       2. AAMA 303 - Voluntary Specification for rigid Polyvinyl Chloride (PVC) Exterior Profiles.
       3. AAMA 506 - Voluntary Specification for Impact and Cycle Testing of Fenestration Products.
       4. AAMA 701 - Voluntary Specification for Pile Weatherstripping and Replaceable Fenestration Weatherseals.
       5. AAMA 902 - Voluntary Specification for Sash Balances.
       6. AAMA 2400 - Standard Practice for Installation of Windows with a Mounting Flange in Stud Frame Construction.
    2. Fenestration Manufacturers Association (FMA):
       1. FMA/AAMA 100 - Standard Practice for the Installation of Windows with Flanges or Mounting Fins in Wood Frame Construction.
    3. American National Standards Institute (ANSI):
       1. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings.
    4. American Society for Testing and Materials (ASTM):
       1. ASTM C 1036 - Standard Specification for Flat Glass.
       2. ASTM C 1172 - Standard Specification for Laminated Architectural Flat Glass.
       3. ASTM D 4216 - Standard Specification for Rigid Poly Vinyl Chloride (PVC) and Related PVC and Chlorinated Poly Vinyl Chloride (CPVC) Building Products Compounds.
       4. ASTM E 283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
       5. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
       6. ASTM E 547 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference.
       7. ASTM E 774 - Standard Specification for the Classification of the Durability of Sealed Insulating Glass Units.
       8. ASTM E 1300 - Standard Practice for Determining Load Resistance of Glass in Buildings.
       9. ASTM E 1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
       10. ASTM E 1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.
       11. ASTM E 2112 - Standard Practice for Installation of Exterior Windows, Doors and Skylights.
       12. ASTM E 2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.
       13. ASTM F 588 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact.
    5. National Fenestration Rating Council (NFRC):
       1. NFRC 100 - Procedure for Determining Fenestration Product U-Factors
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be used, including:
        1. Preparation instructions and recommendations.
        2. Storage and handling requirements and recommendations.
        3. Installation methods.
     3. Shop Drawings: Include window schedule, window elevations, sections and details, and multiple window assembly details.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of color samples: Minimum 1 inch by 4 inch (25 mm by 100 mm) samples of PVC with integral color representing manufacturer's full range of available colors and patterns.
    2. Verification Samples: For each finish specified two color samples: Minimum 1 inch by 4 inch (25 mm by 100 mm) samples of PVC with integral color, representing actual product, color, and patterns.
    3. Quality Assurance/Control Submittals:
       1. Qualifications: Proof of manufacturer's qualifications.
       2. U-Factor, solar heat gain coefficient and structural rating charts required for AAMA and NFRC labeling requirements.
       3. Manufacturers' Installation Instructions - with appropriate fastener type, size, penetration depth and install location details.
    4. Closeout Submittals: Submit following items:
       1. Temporary window labels marked to identify doors that labels were applied to.
       2. Care and maintenance instructions.
       3. Special Warranties.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications:
        1. Minimum five years experience in producing vinyl doors.
        2. Participant in good standing in nationally recognized certification and labeling program.
     2. Installer Qualifications: Experienced installer with familiarity with manufacturer's model and construction installation.
     3. Product Requirements:
        1. Comply with AAMA/WDMA/CSA 101/I.S.2/A440, except as otherwise noted herein.
        2. Certifications for Insulated Glass Doors: AAMA: Windows shall be Gold Label certified with label attached to frame per AAMA requirements.
        3. Windows shall be NFRC certified with temporary U-factor label applied to glass and an NFRC tab added to permanent AAMA or Keystone Certifications frame label.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
       1. Finish areas designated by Architect.
       2. Do not proceed with remaining work until workmanship and operation are approved by Architect.
       3. Rework mock-up installation as required to produce acceptable work.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Comply with manufacturer's recommendations for delivery, storage and handling.
     2. Upon delivery, materials shall be inspected for damage. Notice of deficiencies shall be communicated to manufacturer's representative for determination of usability prior to installation.
     3. Materials shall be stored under condition within manufacturer's absolute limits for environmental conditions.
  2. PROJECT CONDITIONS
     1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
  3. WARRANTY

\*\* NOTE TO SPECIFIER \*\* Select "residential' warranty below for owner occupied single family residential and owner occupied condominium projects. Select "commercial" warranty for non-owner occupied condominiums, commercial, and apartment projects.

* + 1. Residential Special Warranty:
       1. Warranty unit components against defects in materials and workmanship to original owner for life (refer to manufacturer's written warranty for details).
       2. Warranty insulated glass units against failure to original owner for 25 years (refer to manufacturer's written warranty for details).
       3. Warranty to include the cost of parts for the life of the warranty and the cost of labor for one year from the date of purchase (refer to manufacturer's written warranty for details).

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Commercial Special Warranty:
       1. Warranty unit components against defects in materials and workmanship for ten years (refer to manufacturer's written warranty for details).
       2. Warranty insulated glass units against failure for ten years (refer to manufacturer's written warranty for details).
       3. Warranty to include the cost of parts for the life of the warranty and excludes labor (refer to manufacturer's written warranty for details).

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Atrium® SafeHarbor® Vinyl Windows & Doors, which is located at: 300 Welcome Center Blvd. P. O. Box 1869; Welcome, NC 27374-1869; Tel: 866-658-5320; Fax: 800-522-3981; Email: [request info (FNazzaro@atriumwindows.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Atrium%26reg;+SafeHarbor%26reg;+Vinyl+Windows+%26+Doors&coid=45761&rep=&fax=800-522-3981&message=RE:%20Spec%20Question%20(08560ash):%20%20&mf=); Web: [www.safeharborwindows.com](http://www.safeharborwindows.com)

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
  1. MATERIALS
     1. Vinyl: Integral color PVC compound containing impact-resistant solid plasticizer, titanium dioxide UV inhibitor, and surface and color stabilizers.
        1. Comply with AAMA 303, ASTM D 4216 and ANSI/AAMA/NWDA 101/I.S.2/A440.
  2. PERFORMANCE REQUIREMENTS
     1. Thermal Performance: Comply with NFRC 100.
     2. Air Leakage Resistance, Water Penetration Resistance, Structural Loading: Comply with AAMA/WDMA/CSA 101/I.S.2/A440.
     3. Forced Entry Resistance: Comply with ASTM F 588.
     4. Type "D" Large Missile Impact Resistance, Air Pressure Cycling: Comply with AAMA 506 (ASTM E 1886 & ASTM E 1996).

\*\* NOTE TO SPECIFIER \*\* Select following window types and related nail fin/mounting style based on project requirements. Delete window types not used.

* 1. WINDOWS
     1. Frame Type: Nail Fin Only (No J-Channel).
     2. Frame Type: Front Flange Only.
     3. Frame Type: J-Channel (Nail Fin & Front Flange).
     4. Frame Type: Block Frame (No Nail Fin & No Front Flange). Nail fin removed for replacement applications.
     5. Window Type: Single-Hung:
        1. Product: Model 35/235 Series as manufactured by Atrium SafeHarbor Vinyl Windows & Doors.
        2. Florida Building Code (FBC) Approval: FL 11834.
        3. Frame: Minimum 3.25 inches (76 mm) deep, multi-chambered rigid vinyl (PVC) profile.
        4. Sash: The bottom shall operate vertically and tilt in. Aluminum reinforced meeting rail, lock rail, lift rail and stiles. Multi-chambered rigid vinyl (PVC) profile.
        5. Uniform Structural Load Pressure per ASTM E 330: 82.71 psf minimum.
        6. Water Penetration Resistance per ASTM E 547: 8.35psf minimum.
        7. Air Leakage Resistance per ASTM E 283: 0.08 cfm/sf maximum.
        8. Forced Entry Resistance per ASTM F 588: Grade \_A\_. \_\_10\_\_\_.
        9. Design Pressure:
           1. Single Unit +/-55 (H-R55) up to 53 inches x 77 inches (1346 mm x 1956 mm).
           2. Twin Unit.
           3. Twin Unit with Transom.
        10. Performance Grade: Residential.
        11. Impact and Cycling per AAMA 506: DP 55. (Maximum size: 53 inches x 77 inches (1346 mm x 1956 mm).
        12. Hardware:
            1. Concealed, heavy-duty block and tackle balancer (2 per operating sash) and complying with AAMA 902.
            2. Integral rigid vinyl (PVC) sash lift (1 per operating sash).
            3. Dual cam-style locking mechanism with corresponding keeper (minimum 1 per operating sash).
        13. Weatherstripping: Fin seal high-density polypropylene pile with Mylar fin, minimum 0.187 inch wide by 0.240 inch (5 mm by 6 mm) high and complying with AAMA 701.
     6. Window Type: Double-Hung:
        1. Product: Model 65/265 Series as manufactured by Atrium SafeHarbor Vinyl Windows & Doors.
        2. Florida Building Code (FBC) Approval: FL 11826
        3. Frame: Minimum 3.25 inches (76 mm) deep, multi-chambered rigid vinyl (PVC) profile.
        4. Concealed drainage system shall keep dust out and water drainage clear.
        5. Sash: Both sash shall operate vertically and tilt in. Aluminum reinforced bottom rail. Double, reinforced interlocks with "rebar". Multi-chambered rigid vinyl (PVC) profile.
        6. Dual Push-Button Night Latches: Positions sashes for optimal ventilation.
        7. Uniform Structural Load Pressure per ASTM E 330: 90.23 psf minimum.
        8. Water Penetration Resistance per ASTM E 547:9.19 psf minimum.
        9. Air Leakage Resistance per ASTM E 283: 0.08 cfm/sf maximum.
        10. Forced Entry Resistance per ASTM F 588: Grade \_A\_. \_\_10\_\_\_.
        11. Design Pressure:
            1. Single Unit +/-55 (H-R50) up to 36 inches x 74 inches (914 mm x 1880 mm).
            2. Twin Unit.
            3. Triple Unit.
        12. Performance Grade: Residential.
        13. Impact and Cycling per AAMA 506: DP 50. (Maximum size: 36 inches x 74 inches (914 mm x 1880 mm).
        14. Hardware:
            1. 3/4 inch (19 mm) Constant Force Coil Balance System.
            2. Integral rigid vinyl (PVC) sash lift (1 per operating sash).
            3. Dual cam-style locking mechanism with corresponding keeper (minimum 1 per operating sash).
        15. Weatherstripping: Fin seal high-density polypropylene pile with Mylar fin, minimum 0.187 inch wide by 0.240 inch (5 mm by 6 mm) high and complying with AAMA 701.
     7. Window Type: Horizontal Slider:
        1. Product: Model 35/235 Series as manufactured by Atrium SafeHarbor Vinyl Windows & Doors.
        2. Florida Building Code (FBC) Approval: FL 11828.
        3. Frame: Minimum 3.25 inches (83 mm) deep, multi-chambered rigid vinyl (PVC) profile.
        4. Sash: Multi-chambered rigid vinyl (PVC) profile. Aluminum reinforced meeting rail, lock rail, lift rail and stiles.
        5. Uniform Structural Load Pressure per ASTM E 330:82.71 psf minimum.
        6. Water Penetration Resistance per ASTM E 547: 8.35 psf minimum.
        7. Air Leakage Resistance per ASTM E 283: 0.11cfm/sf maximum.
        8. Forced Entry Resistance per ASTM F 588: Grade \_A\_. \_\_10\_\_\_.
        9. Design Pressure: +/-50 (HS-LC55) up to 73 inches by 63 inches (1854 mm by 1600 mm).
        10. Performance Grade: Residential.
        11. Impact and Cycling per AAMA 506: DP 55.
        12. Hardware:
            1. Dual wheel assemblies comprised of brass wheel and stainless steel axle in a rigid plastic housing (2 sets per operating sash).
            2. Extruded rigid vinyl (PVC) snap-in monorail roller track.
            3. Integral rigid vinyl (PVC) sash pull (1 per operating sash).
            4. Cam-style locking mechanism with corresponding keeper (minimum 1 per operating sash).
        13. Weatherstripping: Fin seal high-density polypropylene pile with Mylar fin, minimum 0.200 inch wide by 0.240 inch high (5 mm by 6 mm) and complying with AAMA 701.
     8. Window Type: Horizontal Slider:
        1. Product: Model 65/265 Series as manufactured by Atrium SafeHarbor Vinyl Windows & Doors.
        2. Florida Building Code (FBC) Approval: FL 11828.
        3. Frame: Minimum 3.25 inches (83 mm) deep, multi-chambered rigid vinyl (PVC) profile.
        4. Sash: Minimum 1.625 inches (41 mm) deep, multi-chambered rigid vinyl (PVC) profile. Aluminum reinforced meeting rail, lock rail, lift rail and stiles. Multi-chambered rigid vinyl (PVC) profile.
        5. Uniform Structural Load Pressure per ASTM E 330: 75.19psf minimum.
        6. Water Penetration Resistance per ASTM E 547:9.19 psf minimum.
        7. Air Leakage Resistance per ASTM E 283: 0.07 cfm/sf maximum.
        8. Forced Entry Resistance per ASTM F 588: Grade A.10.
        9. Design Pressure: +/-50 (HS-R50) up to 72 inches by 48 inches (1829 mm by 1219 mm).
        10. Performance Grade: Residential.
        11. Impact and Cycling per AAMA 506: DP 50.
        12. Hardware:
            1. Dual wheel assemblies comprised of plastic wheels and stainless steel axle in a rigid plastic housing (2 sets per operating sash).
            2. Extruded rigid vinyl (PVC) snap-in monorail roller track.
            3. Integral rigid vinyl (PVC) sash pull (1 per operating sash).
            4. Cam-style locking mechanism with corresponding keeper (minimum 1 per operating sash).
        13. Weatherstripping: Fin seal high-density polypropylene pile with Mylar fin, minimum 0.200 inch wide by 0.240 inch high (5 mm by 6 mm) and complying with AAMA 701.
     9. Window Type: Casement:
        1. Product: Model 70/270 Series as manufactured by Atrium SafeHarbor Vinyl Windows & Doors.
        2. Frame: Minimum 3.25 inches (82 mm) deep formed from multi-chambered rigid vinyl (PVC) profile with a 1.125 inches (29 mm) wide mounting flange located 1.00 inch (25 mm) from exterior face of frame.
        3. Sash: Minimum 2.327 inches (59 mm) deep formed from multi-chambered rigid vinyl (PVC) profile.
        4. Uniform Structural Load Pressure per ASTM E 330: 82.76 psf minimum.
        5. Water Penetration Resistance per ASTM E 547: 10.65 psf minimum.
        6. Air Leakage Resistance per ASTM E 283 (1.57 psf): 0.01 cfm/sf maximum.
        7. Design Pressure: +/-55.4 (C-C55) up to 36 inches by 72 inches (910 mm by 1820 mm).
        8. Performance Grade: Residential.
        9. Impact and Cycling per AAMA 506: DP 55.
        10. Forced Entry Resistance per ASTM F 588: Grade 10. No entry.
        11. Hardware:
            1. Dual steel arm rotary operator with fold-down handle.
            2. Single lever, multi-point, locking mechanism with corresponding keepers.
            3. Two bar adjustable hinges.
        12. Weatherstripping: Minimum 1 row 0.30 inch (7.6 mm) single leaf vinyl around full perimeter of exterior vent leg and minimum 1 row 0.25 inch (6 mm) foam filled vinyl bulb around full perimeter of intermediate vent leg and complying with AAMA 701.
     10. Window Type: Picture:
         1. Product: Model 35/235 Series as manufactured by Atrium SafeHarbor Vinyl Windows & Doors.
         2. Florida Building Code (FBC) Approval: FL 11831.
         3. Frame: Minimum 3.25 inches (83 mm) deep, multi-chambered rigid vinyl (PVC) profile.
         4. Uniform Structural Load Pressure per ASTM E 330: 82.71 psf minimum.
         5. Water Penetration Resistance per ASTM E 547: 9.82 psf minimum.
         6. Air Leakage Resistance per ASTM E 283 (1.57psf): 0.01 cfm/sf maximum.
         7. Design Pressure:
            1. Single Unit +/-50 (FW-LC55) up to 72 inches by 77 inches (1820 mm by 1950 mm).
         8. Performance Grade: Residential.
         9. Impact and Cycling per AAMA 506: DP 55.
     11. Window Type: Picture:
         1. Product: Model 65/265 Series as manufactured by Atrium SafeHarbor Vinyl Windows & Doors.
         2. Florida Building Code (FBC) Approval: FL 11831.
         3. Frame: Minimum 3.25 inches (83 mm) deep, multi-chambered rigid vinyl (PVC) profile.
         4. Uniform Structural Load Pressure per ASTM E 330: 75.19 psf minimum.
         5. Water Penetration Resistance per ASTM E 547:7.52 psf minimum.
         6. Air Leakage Resistance per ASTM E 283 (1.57psf): 0.01 cfm/sf maximum.
         7. Design Pressure:
            1. Single Unit +/-50 (F-R50) up to 72 inches by 72 inches (1820 mm by 1820 mm).
         8. Performance Grade: Residential.
         9. Impact and Cycling per AAMA 506: DP 50.
     12. Window Type: Picture:
         1. Product: Model 70/270 Series as manufactured by Atrium SafeHarbor Vinyl Windows & Doors.
         2. Frame: Minimum 3.25 inches (82 mm) deep, multi-chambered rigid vinyl (PVC) profile.
         3. Uniform Structural Load Pressure per ASTM E 330: 82.71 psf minimum.
         4. Water Penetration Resistance per ASTM E 547: 9.19 psf minimum.
         5. Air Leakage Resistance per ASTM E 283 (1.57 psf): 0.01 cfm/sf maximum.
         6. Design Pressure: +/-55 (FW-C55) up to 72 inches by 72 inches (1120 mm by 1820 mm).
         7. Performance Grade: Residential.
         8. Impact and Cycling per AAMA 506: DP 55.
  2. GLASS AND GLAZING
     1. Impact Resistant Sealed Insulating Glass:

\*\* NOTE TO SPECIFIER \*\* If more than one type of glazing is required for the project, be certain that type for each window is clearly noted on drawings or in window schedule.

* + - 1. Glass and glazing shall comply with ASTM C 1036, ASTM E 774 or E 2190 (Class A), ASTM C 1172, ANSI Z97.1 and ASTM E 1300 as required and shall consist of a 0.875 inch (22 mm) overall thick unit comprised of 1 piece of flat glass (outboard lite) of a thickness complying with the requirements of ASTM E 1300 and 1 piece of 0.340 inch (9 mm) laminated glass (inboard lite) comprised of 2 pieces of 0.125 inch (3 mm) flat glass laminated to a 0.090 inch (2.3 mm) interlayer.
      2. Glass and glazing shall comply with ASTM C 1036, ASTM E 774 or E 2190 (Class A), ASTM C 1172, ANSI Z97.1 and ASTM E 1300 as required and shall consist of a 1.125 inch (28.575 mm) overall thick unit comprised of 1 piece of flat glass (outboard lite) of a thickness complying with the requirements of ASTM E 1300 and 1 piece of 0.3125 inch (7.9375 mm) laminated glass (inboard lite) comprised of 2 pieces of 0.125 inch (3 mm) flat glass laminated to a 0.090 inch (2.3 mm) interlayer.

\*\* NOTE TO SPECIFIER \*\* Delete glazing type not required.

* + - 1. Glazing Type: Clear/Clear Laminated.
      2. Glazing Type: Low-E/Clear Laminated.
      3. Glazing Type: Low-E/Clear Laminated, argon gas filled.
      4. Glazing Type: Ultra Low-E/Clear Laminated, argon gas filled.
      5. Glazing Type: Non-reflective Glass.
      6. Glazing Type: Non-reflective Glass with Argon Gas.
      7. Glazing Type: Tempered Glass

\*\* NOTE TO SPECIFIER \*\* 65/265 Series only. Delete if not required.

* + 1. Impact Resistant Sealed Insulating Glass:

\*\* NOTE TO SPECIFIER \*\* If more than one type of glazing is required for the project, be certain that type for each window is clearly noted on drawings or in window schedule.

* + - 1. Glass and glazing shall comply with ASTM C 1036, ASTM E 774 or E 2190 (Class A), ASTM C 1172, ANSI Z97.1 and ASTM E 1300 as required and shall consist of a 1.125 inch (29 mm) overall thick unit comprised of 1 piece of \_\_\_\_\_\_\_ (outboard lite) of a thickness complying with the requirements of ASTM E 1300 and 1 piece of \_\_\_\_\_ inch (\_\_ mm) \_\_\_\_\_\_\_ glass (inboard lite) comprised of \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* Delete glazing type not required.

* + - 1. Glazing Type: Clear/Clear Laminated.
      2. Glazing Type: Low-E/Clear Laminated.
      3. Glazing Type: Low-E/Clear Laminated, argon gas filled.
      4. Glazing Type: Ultra Low-E/Clear Laminated, argon gas filled.
      5. Glazing Type: Non-reflective Glass.
      6. Glazing Type: Non-reflective Glass with Argon Gas.
      7. Glazing Type: Tempered Glass
  1. DIVIDED LITE GRIDS

\*\* NOTE TO SPECIFIER \*\* Delete grid not required.

* + 1. Grid: 0.625 inch (16 mm) wide flat metal bars color matched to frame and sash.
    2. Grid: 0.625 inch (16 mm) wide sculptured metal bars color matched to frame and sash.
    3. Grid: 0.75 inch (19 mm) wide flat metal bars color matched to frame and sash.
    4. Grid: 1 inch (25 mm) wide sculptured metal bars color matched to frame and sash.
    5. Grid: 1-1/8 inches (29 mm) Simulated Divided Lite (SDL) grid.
    6. Grids shall be contained within the airspace of insulated glass units.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. INSECT SCREENS
     1. Provide tight-fitting screen for operating sash with hardware to allow easy removal.
        1. Frame: Roll formed aluminum with rigid plastic corner keys.
        2. Screen Cloth: 18 by 16 charcoal colored fiberglass mesh secured to frame by flexible vinyl spline.
  2. FABRlCATlON
     1. Fabricate frames and sashes with mitered and fusion welded corners and joints. Trim and finish corners and welds to match adjacent surfaces.

\*\* NOTE TO SPECIFIER \*\* Not required for 70/270 Series where no reinforcement is necessary Delete if not required.

* + 1. Provide concealed metal reinforcement in sash frame for attaching lock mechanism.
    2. Factory exterior glaze with snap-on PVC glazing bead stops matching interior sash and frame finish, except where field glazing is required due to large window unit dimensions. Units shall be reglazable without dismantling sash framing.
  1. FINISH
     1. Frame and Sash Finish:

\*\* NOTE TO SPECIFIER \*\* Delete options for color not required. White is standard - Almond is optional.

* + - 1. Color: White.
      2. Color: Almond.

\*\* NOTE TO SPECIFIER \*\* 65/265 series only. Delete if not required.

* + - 1. Color: Painted color.

\*\* NOTE TO SPECIFIER \*\* 65/265 series only. Delete if not required.

* + - 1. Color: Interior wood laminate.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Color match screen frame to frame and sash color.
  1. SOURCE QUALITY CONTROL
     1. Inspect windows in accordance with manufacturer's Quality Control Program as required by the applicable certification program.

1. EXECUTION
   1. EXAMINATION
      1. Examine openings in which windows will be installed.
         1. Verify that framing complies with AAMA 2400, ASTM E 2112 or AAMA/FMA 100.
         2. Verify that fasteners in framed walls are fully driven and will not interfere with window installation.
      2. Do not begin installation until substrates have been properly prepared.
      3. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
      4. Commencement of work by installer is acceptance of substrate conditions.
   2. PREPARATION
      1. Clean surfaces thoroughly prior to installation.
      2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   3. INSTALLATION

\*\* NOTE TO SPECIFIER \*\* Verify fastener size, length, placement schedule and depth of framing penetration as labeled on each window. Masonry walls and unusual conditions may require additional information in this article.

* + 1. Assemble and install windows in framed walls in accordance with manufacturer's recommendations, AAMA 2400, ASTM E 2112 or AAMA/FMA 100 and all applicable building codes.
    2. Do not remove temporary labels.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Install insect screens on operable sash.
  1. PROTECTION
     1. Protect installed products until completion of project.
     2. Touch-up, repair or replace damaged products before Substantial Completion.
  2. ADJUSTING
     1. Adjust operating sash and hardware for smooth operation and tight fit with weather-stripping.
  3. CLEANING
     1. Remove temporary labels and retain for Closeout Submittals.
     2. Clean soiled surfaces and glass using a mild detergent and warm water solution with soft, clean cloth.

END OF SECTION