SECTION 08 53 13

VINYL WINDOWS

PART 1 - GENERAL

1.1 CONDITIONS AND REQUIREMENTS

A. The General Conditions, Supplementary Conditions, and Division 01 - Requirements apply.

1.2 SECTION INCLUDES

A. Double hung vinyl windows.

1.3 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

B. Section 06 20 00 - Finish Carpentry.

C. Section 06 40 13 - Exterior Architectural Woodwork.

D. Section 07 92 00 - Joint Sealants.

E. Section [xxxxx] – [Section Title]: [Include brief description of work specified in another section that is related to the work of this section.]

1.4 REFERENCES

A. American Architectural Manufacturers Association (AAMA):
   1. AAMA 502 - Voluntary Specification for Field Testing of Newly Installed Fenestration Products.
   2. AAMA 506 - Voluntary Specification for Hurricane Impact and Cycle Testing of Fenestration Products.

B. American Architectural Manufacturers Association/Window & Door Manufacturers Association/Canadian Standards Association (AAMA/WDMA/CSA):
   1. AAMA/WDMA/CSA 101/I.S.2/A440 - Standard/Specification for Windows, Doors, and Skylights.

C. ASTM International (ASTM):
   1. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
   2. ASTM E413 - Classification for Rating Sound Insulation.

3. ASTM E1332 - Standard Classification for Rating Outdoor-Indoor Sound Attenuation.
4. ASTM E1886 - 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.
5. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.
6. ASTM F588 - Standard Test Method for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact.

D. National Fenestration Rating Council (NFRC):
1. NFRC 100 - Procedure for Determining Fenestration Product U-factors.
2. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.

1.5 PERFORMANCE REQUIREMENTS

A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance materials, components, accessories, and fabrication unless more stringent requirements are indicated.

B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:
1. Minimum Performance Class: [R] [LC] [Insert class].
2. Minimum Performance Grade: [20] [Insert grade].

C. Forced Entry Resistance: Meet the requirements of ASTM F588 for Type [Insert type], Grade [Insert grade].

D. Air Infiltration: Maximum air leakage through fixed glazing and framing areas of 0.30 cfm/sq ft of fixed wall area as determined according to ASTM E283 at a minimum static-air-pressure differential of 1.57 lbf/sq ft.

E. Operating Force: Maximum allowable lb force of 30 lbf.

F. Water Penetration: Minimum water resistance of [2.86 psf for entry level R15] [3.75 psf for entry level LC25] [4.50 psf for entry level C30] structural rating.

G. Thermal Transmittance: NFRC 100 maximum whole window U-factor of [0.30 Btu/sq ft x°h x degrees F] [Insert value].

H. Solar Heat Gain Coefficient (SHGC): NFRC 200 maximum whole window SHGC of [0.30] [Insert value].

I. Windborne-Debris Resistance: Capable of resisting impact from windborne debris based on testing, glazed windows identical to those specified, in accordance with ASTM E1886 and ASTM E1996 and requirements of authorities having jurisdiction.

1.6 SUBMITTALS

A. Submit under provisions of Section [01 33 00] [_____].

B. Product Data: Submit for each product specified indicating:
   1. Construction details, material descriptions, and glazing and fabrication methods.
   2. Dimensions of individual components and profiles, hardware, and finishes.
   3. Physical and performance properties.
   4. Preparation and installation instructions and recommendations.
   5. Storage and handling recommendations.

C. Shop Drawings: Provide detailed elevations indicating size, glazing type, muntin type, and design for each window type; indicate multiple window unit connection details and installation.

D. Samples: Submit 2 by 4 inch minimum size samples for each exposed product and color specified.
   1. Include similar samples of hardware and accessories involving color selection.

E. Qualification Data: Provide for manufacturer and installer.

F. Product Test Reports: Submit certified independent testing agency reports indicating windows units meet or exceed specified performance requirements.

G. Operation and Maintenance Data: Submit for windows to include in maintenance manuals.

H. Warranty: Submit sample special warranty specified in this section.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that has a minimum of [10] [_____] years of documented experience manufacturing vinyl windows similar to that used for this project.

B. Installer Qualifications: A firm that is acceptable to vinyl window manufacturer to install windows in accordance with guidelines set forth by the manufacturer.

C. Source Limitations: Obtain each type of vinyl window from same manufacturer.

D. Mockups: Build mockups to verify selections made under sample submittals and to evaluate aesthetic effects and establish quality standards for materials and workmanship.
   1. Construct mockups in the location and of the size indicated or, if not indicated, as directed by Architect.
   2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E. Preinstallation Conference: Conduct conference at project site to discuss methods and procedures relating to installation of the vinyl windows.

1.8 DELIVERY, STORAGE AND HANDLING

A. Deliver windows to project site in undamaged condition; handle window units to prevent damage to components and finishes.

B. Store and protect windows in accordance with manufacturer's written recommendations to prevent damage from condensation, temperature changes, direct exposure to sun, or other causes.

1.9 SITE CONDITIONS

A. Ambient Conditions: Maintain temperature, humidity, and ventilation within limits recommended by manufacturer.

1.10 WARRANTY

A. Manufacturer's Warranty: Manufacturer's standard form in which manufacturer agrees to replace vinyl windows that fail within specified warranty period.
   1. Warranty Period: Lifetime of windows.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: The design for double hung vinyl windows is based on Reflections 5500 Series Double Hung Windows manufactured by Simonton Windows, P.O. Box 1646, Parkersburg, WV 26102-1646; telephone: 800-simonton; Web Site: www.simonton.com.

B. Substitutions will not be considered.

C. Substitutions will be considered, subject to compliance with requirements of this section, under provisions of Section 01 60 00.

2.2 DOUBLE HUNG VINYL WINDOWS

A. Double Hung Vinyl Windows: Simonton Reflections 5500 Series Double Hung windows:
   1. Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication.
      a. Window Certification: Test windows to AAMA Gold Label Certification Program for thermal performance and air, water, and structural integrity. Provide certification label on each window.
   2. Minimum Performance Class and Grade: [H-LC25] [H-LC35] [H-LC50] [H-LC55] [H-R20] [H-R25] [H-R50] [H-R52.8] [H-R55] [H-R60] [H-R65].
   3. Frames and Sashes: Fusion welded impact-resistant, UV-stabilized PVC.
      a. Finish: Integral [[white] [tan] [driftwood] standard interior/exterior color] [insert Decorum™ custom exterior color from manufacturer's currently

available range] [and] [insert Decorum™ custom interior laminate color from manufacturer's currently available range].

4. Sill: Triple-stepped, sloped design sill angled downward to force water away from window.
5. Insulating Glass Units:
   a. [Standard Unit: 3/4-inch thick consisting of two (2) panes of single-strength ProSolar™ soft coat Low-E glass with Argon gas fill and PPG Intercept® warm edge spacer.]
   b. [Optional Unit: [7/8] [One (1)] inch thick consisting of three (3) panes of double-strength ProSolar™ soft coat Low-E glass with [Argon] [Krypton] gas fill and Super Spacer® warm edge solid silicone foam spacer.]
   c. Glass Type: [Single-strength] [Double-strength [fully tempered] [laminated]].
   d. Glass Color: [Bronze tinted] [Grey tinted] [Obscure].
6. Grids:
   a. Types: [Flat] [Sculptured].
   b. Style: [Colonial] [Diamond] [Perimeter] [Double perimeter] [Prairie] [Double prairie].
   c. Size: [5/8] [One (1)] inch.
   d. Color: [[White] [Tan] [Driftwood][Brass]] [insert custom exterior color from manufacturer's currently available range] [and] [insert Decorum™ custom interior laminate color from manufacturer's currently available range].
7. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel, or other corrosion-resistant material compatible with adjacent materials, designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.
   a. Exposed Hardware Color and Finish: [White] [[Tan] [Driftwood] [Polished brass] [Brushed nickel] [Oil-rubbed bronze] [Dark bronze].]
8. Double-Hung Window Hardware:
   a. Counterbalancing Mechanism: Concealed 3/4-inch stainless steel constant force coil spring.
   b. Locking System: Cam lock with adjustable keeper.
   c. Pivot System: Denny Clip™ flush mount releasing tilt latch allows sash to pivot about horizontal axis to permit cleaning of exterior surfaces from the interior.
   d. Handle Style: [Contoured [white] [tan] [driftwood] extruded lift rail] [Curved [brushed nickel] [oil-rubbed bronze] [polished brass] lift handles].
9. Weather Stripping: Dual fin seal around sash perimeter, triple weather stripping at sash head and sill, and tri-durometer closed-cell foam weather stripping.
10. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.
    a. Do not use exposed fasteners to the greatest extent possible. Use fasteners that match finish hardware being fastened.

2.3 INSECT SCREENS

A. General: Fabricate insect screens to fully integrate with window frame. Provide screen for each operable exterior sash.
   1. Type and Location: [Half] [Full] outside.

B. Aluminum Frames: Manufacturer's standard extruded aluminum forms with color and finish matching window frames.

C. Screen Fabric: [Fiberglass 18-by-14 or 18-by-16 mesh in manufacturer's standard color] [Aluminum 18-by-16 mesh of 0.011-inch diameter, coated aluminum wire in manufacturer's standard color].

2.4 FABRICATION

A. Fabricate vinyl windows in sizes required. Provide a complete system for assembling components and anchoring windows.

B. Factory glaze windows.

C. Weather strip each operable sash to provide weathertight installation.

D. Provide mullions and cover plates, compatible with windows, complete with anchors for support to structure and installation of windows. Provide for erection tolerances and movement of window units due to thermal expansion and building deflections. Mullions and cover plates to be capable of withstanding design wind loads of window units. Match finish of windows.

E. Mount hardware through double walls of vinyl extrusions or provide corrosion-resistant reinforcement.

F. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only to the extent necessary to permit shipment and installation. Allow for scribing, trimming, and fitting at project site.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine openings, substrates, anchorage, and supports for compliance with requirements for tolerances relating to installation and other conditions which can affect performance of the Work.

B. Verify that rough opening dimensions, sill levelness, and operational clearances are acceptable.

C. Examine abutting wall flashings, vapor retarders, weather barriers, and other components to ensure a weathertight window installation.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates thoroughly prior to installation.

B. Prepare substrates using methods recommended by window manufacturer to achieve the best results for the substrate under project conditions.

C. Protect window frames and surrounding surfaces to prevent damage during installation.

3.3 INSTALLATION

A. Install windows in accordance with manufacturer's written instructions.

B. Install windows level, plumb, square, true to line, and without distortion. Anchor windows securely in place to supporting substrate. Verify that windows are installed in proper relation to wall flashing and other abutting materials to achieve a weathertight installation.

3.4 FIELD QUALITY CONTROL

A. After installation, test windows to verify amount of air infiltration and water resistance in accordance with AAMA 502. The tests shall demonstrate compliance with the following requirements:
   1. Allowable Air Leakage Rate: 1.5 times the applicable rate for the product type and performance class in accordance with AAMA/WDMA/CSA 101/I.S. 2/A440.
   2. Allowable Water Infiltration: None permitted.

B. If installed windows do not meet these criteria, remove and replace with new windows and retest.

3.5 ADJUSTING, CLEANING AND PROTECTION

A. Adjust operating components to ensure a tight fit at contact points and weather stripping for smooth operation and weathertight closure.

B. Clean exposed surfaces of windows immediately after installation using cleaning methods recommended by window manufacturer. Remove excess sealants, glazing materials, dirt, and other substances.

C. Replace glass that has been broken, chipped, cracked, abraded, or damaged during construction.

D. Protect installed products until completion of project.

E. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

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