SECTION 08 34 13 – SLIDING VINYL FRAMED GLASS DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes but is not limited to:

1. Sliding vinyl framed glass doors.
2. Sliding door glazing
3. Sliding door hardware
4. Accessories
5. Delegated design.

B. Related Sections:

1. Section 07 27 00 "Air Barrier" for weather resistive barrier and air barrier.
2. Section 07 62 00 "Sheet Metal Flashing and Trim" for flashing at exterior insulation.
3. Section 07 92 00 "Joint Sealants" for sealants and caulking.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Review, discuss, and coordinate the interrelationship of vinyl sliding doors with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealants, and protecting finishes.
3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.
5. Install typical sliding door during pre-installation conference in coordination with other components of the Work.
6. Manufacturer's representative to be present for sliding door pre-installation meeting and during sliding door mock-up installation.
7. Manufacturer's representative to verify in writing that installation procedure represented by mock-up is in compliance with manufacturer's recommended installation procedures.
8. Testing protocol.

1.4 SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for vinyl sliding doors.

B. Shop Drawings: Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.

C. Qualification Data: For manufacturer and Installer.

D. Product Test Reports: For each type of vinyl sliding door, for tests performed by a qualified testing agency.

E. Sample Warranties: For manufacturer's warranties.

F. Manufacturer’s installation instructions.

G. Delegated-Design Submittal: Analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1. Detail anchoring and connection of door systems to substrate.
2. Include design calculations.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer capable of fabricating vinyl sliding doors that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.

B. Installer Qualifications: An installer acceptable to vinyl sliding door manufacturer for installation of units required for this Project.

C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockup of typical wall area as shown on Drawings. Coordinate sliding door mock-up with other related components of the Work requiring mock-ups.
2. Wall area with sliding door mock-up may not be incorporated as part of the Work. Sliding door mock-up to remain on site for reference for duration of Project’s sliding door and siding installation. Remove mock-up only with approval of Architect.
3. Install typical sliding door as part of pre-installation conference.
4. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

1.6 DELIVERY, STORAGE AND HANDLING

A. A temporary covering shall protect exposed surfaces after completing fabrication of products.

B. Deliver materials in manufacturer’s original packaging with labels intact.

C. Store sliding doors/elements vertically, inside, in a clean and dry location.

D. Stacking shall be done in a way to prevent bending.

E. Cover stacks in a manner to provide air circulation and to reasonably protect materials from damage.

F. Keep on-site handling to a minimum. Exercise particular care to avoid damage to finishes. Damaged or deteriorated materials shall be removed from the site.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify dimensions of surrounding construction by field measurements so work will be accurately fabricated, and fitted to structure. Contractor, fabricator and manufacturer shall cooperate to establish and maintain these field dimensions.

1.8 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace vinyl sliding doors that fail in materials or workmanship including parts and labor within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure to meet performance requirements.
b. Structural failures including excessive deflection, water leakage, and air infiltration.
c. Faulty operation of movable sash and hardware.
d. Deterioration of materials and finishes beyond normal weathering.
e. Failure of insulating glass.

2. Warranty:

a. Use: Commercial
b. Sliding door: 10 years from date of Substantial Completion.
c. Glazing Units: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Ply Gem

2. Jeld Wen
3. Pella
4. VPI
5. Approved Substitution.

B. Source Limitations: Obtain vinyl sliding doors from single source from single manufacturer.

2.2 SLIDING GLASS DOOR 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.

1. Sliding glass doors, profiles, components and materials to be certified under either:

a. The AAMA Certification Program and be labeled with AAMA Gold Certification Label.
b. The WDMA Hallmark Certification Program and indicated with label.

2. Sliding glass door assemblies to comply with current Energy Star rating for applicable region and bear the regional Energy Star label.
3. Sliding glass doors to be rated and labeled with NFRC label.

B. Delegated Design: Design anchoring and connection of door systems to substrate to meet indicated performance requirements.

C. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:

1. Minimum Performance Class: LC.
2. Minimum Performance Grade: 30.

a. Lab Structural Test Pressure: 30 x 1.5 = 45.0 psf.
b. Lab Water Test Pressure: 30 x 0.15 = 4.5 psf
c. Field Water Test Pressure: 4.5 x 0.667 = 3.0 psf (with 1/3 reduction)

D. Thermal Transmittance: NFRC 100 maximum whole-sliding door U-factor of 0.30 Btu/sq. ft. x h x deg F (1.71 W/sq. m x K), or current EnergyStar requirement, whichever is more stringent.

E. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-sliding door SHGC of 0.30.

F. Sound Transmission Class (STC): Rated for not less than 28 STC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 413.

G. Outside-Inside Transmission Class (OITC): Rated for not less than 25 OITC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 1332.

H. Visible Light Transmittance: Not less than 0.50.

I. Windborne-Debris Resistance: Capable of resisting impact from windborne debris based on testing glazed sliding doors identical to those specified, according to ASTM E 1886 and testing information in ASTM E 1996 and requirements of authorities having jurisdiction.

J. Sliding door Air Leakage, ASTM E 283: Sliding door air leakage when tested at 1.57 psf (25 mph) shall be 0.30 cfm/ft^2 of frame or less.

K. Sliding door Water Penetration, ASTM E 547: No water penetration through sliding door at static pressure, after 4 cycles of 5 minutes each, with water being applied at a rate of 5 gallons per hour per square foot. Static pressure established by performance grade.

L. Factory Mulling: Mulled sliding door assemblies to be rated for not less than performance of individual component sliding doors according to AAMA 450-06.

M. Forced-Entry Resistance: Comply with CAWM 301-90.

N. Product Condensation Resistance: Minimum of 55.

2.3 VINYL SLIDING DOORS

A. Operating Types: Provide the operating types as shown on the Drawing Schedule in locations indicated on Drawings:

B. Frames and Sashes: Impact-resistant, UV-stabilized PVC complying with AAMA/WDMA/CSA 101/I.S.2/A440.

1. Finish: Integral color, beige.
2. Gypsum Board Returns: Provide at interior face of frame.
3. Mounting: Fin frame.

C. Glass: Clear annealed glass, ASTM C 1036, Type 1, Class 1, q3.

1. Kind: Fully tempered.

D. Insulating-Glass Units: ASTM E 2190, certified through IGCC as complying with requirements of IGCC.

1. Glass: ASTM C 1036, Type 1, Class 1, q3.

a. Tint: Clear.
b. Kind: Fully tempered.

2. Lites: Two.
3. Filling: Fill space between glass lites with argon.
4. Low-E Coating: as required to meet requirements.

E. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

F. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock sliding doors, and sized to accommodate sash weight and dimensions.

1. Exposed Hardware Color and Finish: As selected by Architect from manufacturer's full range.

G. Horizontal-Sliding Sliding door Hardware:

1. Sill Cap/Track: Manufacturer's standard of dimensions and profile indicated; designed to comply with performance requirements indicated and to drain to the exterior.
2. Locks and Latches: Allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only.
3. Roller Assemblies: Low-friction design.
4. Night lock feature.

H. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.

I. Fasteners: As recommended by sliding door manufacturer. Noncorrosive and compatible with sliding door members, trim, hardware, anchors, and other components.

1. Exposed Fasteners: Do not use exposed fasteners to the greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

J. Sealants: Comply with requirements of AAMA 800.

2.4 ACCESSORIES

A. Sill Drainage Mesh: Woven plastic mesh suitable to provide sill drainage behind sliding door nail flange;
1. Frost King - Thermwell Products Co. Inc., VX620 Plastic Gutter Guard.

B. Shims: Size and shape suitable to provide sill drainage and structural support under sliding door.

1. Polypropylene or Polystyrene Shims; 6,000-8,000 psi according to ASTM D695.
2. Adhesive-backed Dense Neoprene Setting Blocks; 80 - 85 Shore "A" hardness according to ASTM D-2240.

C. For other accessories, flexible flashing and tapes see Section 07 27 00 “Air Barrier”

D. For sealants see Section 07 92 00 “Sealants”

2.5 INSECT SCREENS

A. General: Fabricate insect screens to fully integrate with sliding door frame. Provide screen for each operable exterior door. Screen wickets are not permitted.

B. Aluminum Frames: Manufacturer's standard aluminum alloy complying with SMA 1004 or SMA 1201. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners, and removable PVC spline/anchor concealing edge of frame.

1. Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet.

2. Finish for Interior Screens: Baked-on organic coating in color selected by Architect from manufacturer's full range.
3. Finish for Exterior Screens: Baked-on organic coating in color selected by Architect from manufacturer's full range.

C. Glass-Fiber Mesh Fabric: 18-by-14 (1.1-by-1.4-mm) or 18-by-16 (1.0-by-1.1-mm) mesh of PVC-coated, glass-fiber threads; woven and fused to form a fabric mesh resistant to corrosion, shrinkage, stretch, impact damage, and weather deterioration. Comply with ASTM D 3656.

1. Mesh Color: Manufacturer's standard gray.

2.6 FABRICATION

A. Fabricate vinyl sliding doors in sizes indicated. Include a complete system for assembling components and anchoring sliding doors.

1. Frame and Sash Corners: Miter-cut, bonded & mechanically joined, and injected with sealant.
2. Nail Fin: Integral to frame for all sliding door types. Non-integral fins subject to approval of architect, factory test and field test compliance with performance criteria.
3. Drainage: Fabricate frames with internal drainage system and weeps to the exterior.

B. Sliding door Combinations: All combined sliding door frames to be factory mulled.

C. Fabricate sliding doors that can be re-glazed without dismantling sash framing.

D. Glaze vinyl sliding doors in the factory.

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

F. Hardware: Mount hardware through double walls of vinyl extrusions or provide corrosion-resistant reinforcement.

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

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.

C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight sliding door installation.

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

3.2 INSTALLATION

A. Comply with manufacturer's written instructions for installing sliding doors, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.

B. Install sliding doors level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

C. Erection Tolerances:

1. Variations from Plumb: ±1/8” maximum in sliding door height.
2. Variations from Level: ± 1/8” maximum in 10’ run, non-cumulative.
3. Variations from Square: ± 3/16” maximum diagonally.

D. Coordinate sliding door installation with Sliding door Sequencing Details in Drawings.

3.3 FIELD QUALITY CONTROL

A. Testing Agency: Owner may engage a qualified testing agency to perform tests and inspections.

1. Testing and inspecting agency will interpret tests and state in each report whether tested work complies with or deviates from requirements.

B. Testing Services: Testing and inspecting of installed doors shall take place as follows:

1. Testing Methodology: Testing of doors for water resistance shall be performed according to ASTM 1105, cyclic method.

2. Water-Resistance Testing:

3. Field Water-Resistance Testing:

a. Test Pressure:

1) Field Water Test Pressure: 4.5 x 0.667 = 3.0 psf (with 1/3 AAMA reduction)

b. Allowable Water Infiltration:

1) No water penetration to interior surface of window sash or glazing.
2) Water contained within drained flashing, gutters, and sills shall not be considered failure.

4. Testing Extent: Mock-up door and three additional doors or 10 percent, whichever number is greater, locations as selected by Architect and a qualified independent testing and inspecting agency. Doors shall be tested after perimeter sealants have cured.
5. Test Reports: Prepared according to AAMA 502.

C. Remove and replace noncomplying doors with new doors and retest as specified above. Doors may be repaired at the sole discretion of the Owner.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

1. For each non-complying door, field test the replacement or repaired door and field test two additional untested doors at contractor’s expense.

E. Prepare test and inspection reports.

F. Contractor to provide:

1. On-site source of water within 150 feet of each test location.
2. Access to the interior and exterior of the building, to include any lifts, staging, rigging and or scaffolding that may be necessary.
3. Clear, unobstructed access to the test openings; to include the removal and replacement of items such as interior rough framing, trim, finishes and fire/smoke protection.
4. Repair of any damage that may result from the testing process.

G. Testing Coordination: Coordinate testing with appropriate phase and completeness of work.

1. Doors to be tested before interior insulation, finishes and trim is installed unless otherwise agreed.

3.4 ADJUSTING, CLEANING, AND PROTECTION

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

B. Clean exposed surfaces immediately after installing sliding doors. Remove excess sealants, glazing materials, dirt, and other substances.

1. Keep protective films and coverings in place until final cleaning.

C. Remove and replace glass if it has been broken, chipped, cracked, abraded, or damaged during construction period.

D. Protect sliding door surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact sliding door surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 08 34 13