

SECTION 08760

WINDOW AND SKYLIGHT HARDWARE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Concealed casement hinges.
- B. Dual arm operators with crank handles.
- C. Check rail cam locks.
- D. Multipoint locking systems.
- E. Standard duty 4-bar hinges.
- F. Heavy duty 4-bar hinges.
- G. Aluminum 4-bar awning hinges.
- H. 4-bar egress hinges.
- I. Stainless steel 4-bar hinges.
- J. Motorized skylight systems.

1.2 RELATED SECTIONS

- A. Section 08520 - Aluminum Windows.
- B. Section 08550 - Wood Windows.
- C. Section 08561 - Tubular Plastic Windows.
- D. Section 08620 - Unit Skylights.

1.3 REFERENCES

- A. AAMA 904.1 - Voluntary Specification for Friction Hinges in Window Applications; American Architectural Manufacturers Association.
- B. UL (EAUED) - Electrical Appliance and Utilization Equipment Directory; Underwriters Laboratories Inc.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.

- B. Product Data: Include manufacturer's complete product literature for specified hardware items, including detailed installation diagrams and instructions.
- C. Shop Drawings: Submit wiring diagrams for skylight operators. Include installation details.
- D. Selection Samples: Include complete range of colors available, for Architect's selection.
- E. Verification Samples: Two samples of each type of hardware item that will be exposed in completed work. These samples will become Owner's maintenance materials.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Ship window hardware items in lots coordinated with openings, as numbered in opening schedule.
- B. Store hardware items in secure location until windows are ready for hardware installation.

1.6 WARRANTY

- A. Provide manufacturer's standard lifetime warranty against defects in materials and workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. This section is based on products manufactured by Truth Hardware; 700 West Bridge Street, Owatonna, MN 55060. Telephone: 800-866-7884; Fax: 507-451-5655.
 - 1. Substitutions will be considered in accordance with provisions of Section 01600.
 - 2. Substitutions are not acceptable.

2.2 WINDOW HARDWARE

- A. Concealed Casement Hinges: Provide 14 Series Hinges, designed for concealment between sash and frame, of slide and pivot design.
 - 1. Track: 300 series stainless steel.
 - 2. Arms: Heavy gage steel.
 - 3. Arms: 300 series stainless steel.
 - 4. Slide Shoe: Stainless steel reinforcing insert in Delrin shoe.

5. Finish: Steel components protected with manufacturer's proprietary E-Gard7 Hardware Finish.
 6. Handing: Left.
 7. Handing: Right.
 8. Handing: Left and Right, as indicated.
 9. Model No.: _____.
 10. Model No.: As scheduled.
 11. Model No.: As recommended by manufacturer for size and weight of sash.
- B. Dual Arm Operators: Provide 15 Series EntryGard Dual Arm Operators for casement and awning windows, designed to provide easy adjustment of window position by means of crank operation, with easily detachable connection to movable sash.
1. Operator Base: High-pressure die-cast zinc.
 2. Drive Worm and Gears: Hardened steel.
 3. Cover: High-strength polycarbonate.
 4. Steel Finish: Manufacturer's proprietary E-Gard7 Hardware Finish.
 5. Handle Finish: Phosphate coated, electrostatically painted baked enamel, color:
 - a. 03 Bronze.
 - b. 08 Coppertone.
 - c. 09 Gold.
 - d. 22 Clay.
 - e. 32 White.
 - f. 78 White.
 - g. Plated 13 Brass.
 - h. _____.
 - i. As scheduled.
 6. Handing: Left.
 7. Handing: Right.
 8. Handing: Left and Right, as indicated.
 9. Model No.: _____.
 10. Model No.: As scheduled.
 11. Model No.: As recommended by manufacturer for size and weight of sash.
- C. Window Locks: Provide 17 Series EntryGard II Cam Locks for slider and single- or double-hung windows, designed to increase security and weather seal tightness.
1. Material: High-pressure, corrosion resistant die-cast zinc.
 2. Operation: Internal cam design to provide 0.125 inch of pull-in to aid in sealing meeting rails.

3. Finish: Phosphate coated, electrostatically painted baked enamel, color:
 - a. 03 Bronze.
 - b. 08 Coppertone.
 - c. 09 Gold.
 - d. 22 Clay.
 - e. 23 Chestnut Bronze.
 - f. 24 Beige.
 - g. 32 White.
 - h. 78 White.
 - i. Plated 13 Brass.
 - j. _____.
 - k. As scheduled.
 4. Model No.: _____.
 5. Model No.: As scheduled.
 6. Model No.: As recommended by manufacturer for size and weight of sash.
- D. Multi-Point Locking System: Provide 24 Series Multi-Point System for vinyl or metal windows, for sequential locking with up to 0.625 inch of pull-in capability and resistance of up to 300 pounds per locking point against negative air pressure and forced entry.
1. Operation: Single locking handle drives tie bar with multiple locking points.
 2. Handle and Case: High pressure die-cast zinc.
 3. Tie Bar: Steel, with protective E-Gard⁷ Hardware Finish.
 4. Keepers: Steel, with protective E-Gard⁷ Hardware Finish; or UV stabilized acetal.
 5. Tie Bar Assembly:
 - a. Rollers: 2 interlock type.
 - b. Rollers: 3 interlock type.
 - c. Rollers: 2 cone type.
 - d. Rollers: 3 cone type.
 - e. Tie Bar Length: _____.
 6. Finish: Phosphate coated, electrostatically painted baked enamel, color:
 - a. 23 Chestnut Bronze.
 - b. 24 Beige.
 - c. 32 White.
 - d. 78 White.
 - e. _____.
 - f. As scheduled.
 7. Handing: Left.
 8. Handing: Right.
 9. Handing: Left and Right, as indicated.

10. Model No.: _____.
 11. Model No.: As scheduled.
 12. Model No.: As recommended by manufacturer for size and weight of sash.
- E. 4-Bar Hinges: Provide 34 Series window hinges, non-handed and certified to meet AAMA 904.1 Specifications. Fabricate with screw adjusted brass slide shoe that allows fine tuning of hinge to window application.
1. Standard Duty Hinges:
 - a. Material: Stainless steel.
 - b. Material: Steel, zinc plated with yellow dichromate coating.
 - c. Size: 8 inches.
 - d. Size: 10 inches.
 - e. Size: 12 inches.
 - f. Size: 14 inches.
 - g. Size: 16 inches.
 - h. Size; 18 inches.
 - i. Size: 20 inches.
 - j. Rivets: Loose.
 - k. Rivets: Standard.
 2. Heavy Duty Hinges:
 - a. Material: Stainless steel.
 - b. Material: Steel, zinc plated with yellow dichromate coating.
 - c. Material: Aluminum.
 - d. Size: 10 inches.
 - e. Size: 12 inches.
 - f. Size: 14 inches.
 - g. Size: 16 inches.
 - h. Size; 18 inches.
 - i. Size: 20 inches.
 - j. Size: 24 inches.
 - k. Size: 28 inches.
 - l. Rivets: Loose.
 - m. Rivets: Standard.
 3. Aluminum Awning Hinges:
 - a. Track and Bars: Aluminum, 6063-T6 alloy.
 - b. Rivets: Aluminum, 5056 alloy.
 - c. Guide bracket and cap: Stainless steel.
 - d. Shoe: Nylon.
 - e. Size: 10 inches.
 - f. Size: 12 inches.
 - g. Size: 14 inches.
 - h. Size: 16 inches.
 - i. Size; 18 inches.
 - j. Size: 20 inches.

- k. Size: 24 inches.
- l. Rivets: Loose.
- m. Rivets: Standard.
- 4. Egress Hinges:
 - a. Material: 300 series stainless steel, with sliding brass shoe containing a nylon block for screw adjustment.
 - b. Standard Duty: Vent weight up to 82 pounds.
 - c. Heavy Duty: Vent weight up to 158 pounds.
 - d. Washability: Include key operated feature permitting vent movement for exterior window washing from interior.
 - e. Size: 12 inches.
 - f. Size: 16.125 inches.
 - g. Size: 16.5 inches.
 - h. Rivets: Loose.
 - i. Rivets: Standard.
- 5. Stainless Steel Casement Hinges:
 - a. Material: 300 series stainless steel components, with 400 series stainless steel rivets and sliding brass shoe.
 - b. Standard Duty: Vent weight up to 65 pounds.
 - c. Heavy Duty: Vent weight up to 100 pounds.
 - d. Size: 12 inches.
 - e. Size: 14 inches.
 - f. Size: 16 inches.
 - g. Size; 18 inches.
 - h. Rivets: Loose.
 - i. Rivets: Standard.

F. Fasteners: As recommended by manufacturer for specific hardware type and application.

2.3 SKYLIGHT HARDWARE

- A. Motorized Skylight Operators: Provide UL listed and CSA approved Sentry 2000 series operators, designed to replace crank on operable skylights.
 - 1. Motor Drive: High pressure zinc die cast housing, hardened steel drive gears, and high torque 24 volt DC motor, capable of operating skylight vent weighing up to 100 pounds. Include drive adapter for specific skylight units, as scheduled.
 - 2. Transformer: 24 VAC, Class II.
 - 3. Motor Control Module: Wall mounted, designed to fit standard single gang electrical box, and allowing use

of standard switch cover plates. Include circuitry capable of controlling up to three motors.

- a. Control type: LC I stand-alone system.
- b. Control type: LC II externally controllable system, equipped with wireless infrared remote control and rain sensor.
- c. Control type: LC II externally controllable system, equipped with thermostat control input device.
- d. Control type: LC II externally controllable system, equipped with home automation system input, as scheduled.
- e. Control type: LC II externally controllable system, equipped with close and hold input that closes all skylights and overrides all other inputs.
- f. Control type: LC II externally controllable system, equipped with open and hold input that opens all skylights and overrides all other inputs.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that operable windows are ready to receive work of this section and openings correspond to locations and dimensions indicated on approved shop drawings.
- B. Verify that required electrical power of correct characteristics is available.
- C. Do not begin work of this section until unacceptable conditions have been corrected.

3.2 INSTALLATION

- A. Install all window hardware in strict conformance with manufacturer's instructions, using fasteners supplied by hardware manufacturer or approved for use by manufacturer.
- B. Install all hardware to be accurately positioned, securely fastened, and adjusted for smooth operation.

3.3 ADJUSTING AND CLEANING

- A. Clean all debris related to hardware installation from project site. Leave windows and hardware in neat and clean condition.
 - B. Immediately prior to Substantial Completion of project, inspect windows and verify that all operable hardware is working properly. Make any adjustments necessary to assure smooth operation.
- 3.4 SCHEDULE

END OF SECTION