

SECTION 08 36 00
Overhead Doors
VertiStack Clear

GENERAL NOTES TO SPECIFIER:

This specification section has been prepared to assist design professionals in the preparation of project or office master specifications. It follows guidelines established by the construction specifications institute, and therefore may be used with most master specification systems with minor editing.

Edit carefully to suit project requirements. Modify as necessary and delete items that are not applicable. Verify that referenced section numbers and titles are correct. (Numbers and titles referenced are based on MasterFormat®, 2004 edition).

This section assumes the project manual will contain complete division 01 documents including sections 01 33 00–submittal procedures, 01 62 00–product options, 01 25 13–product substitution procedures, 01 66 00–product storage and handling requirements, 01 77 00–closeout procedures, and 01 78 00–closeout submittals. If the project manual does not contain these sections, additional information should be included under the appropriate articles.

This is an open proprietary specification allowing users the option of approving other manufacturers which comply with the criteria specified herein.

****NOTES TO THE SPECIFIER**** should be deleted from final copy.

Optional items requiring selection by the specifier are enclosed within brackets, e.g. [35] [40] [45]. In cases where one of the optional items is a standard feature of the door model, it is listed in the first position. Make appropriate selection and delete others.

Items requiring additional information are underlined and highlighted, e.g. .

PART 1: GENERAL

1.1 SUMMARY

- A. **Section Includes:**
1. Aluminum full view overhead stacking door (Model VS904U)
 2. Electric door operators

1.2 RELATED SECTIONS:

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

- A. 03 30 00 – Cast-In-Place Concrete. Prepared opening in concrete.
- B. 04 20 00 – Unit Masonry Assemblies. Prepared opening in masonry.
- C. 05 50 00 – Metal Fabrications. Door opening jamb and head members.
- D. 06 10 00 – Rough Carpentry. Door opening jamb and head members.
- E. 07 90 00 – Joint Seals.
- F. 08 31 00 – Access Doors and Panels. Access doors.
- G. 08 70 00 – Hardware. Padlocks. Masterkeyed cylinder.
- H. 08 71 00 – Door Hardware and locks.
- I. 09 90 00 – Paints and Coatings.
- J. 09 91 00 – Painting. Field painting.
- K. 16 05 00 – Electrical service and connections for powered operators.
- L. Division 26. Electrical wiring and conduit, fuses, disconnect switches, connection of operator to power supply, and installation of control station and wiring.
- M. **Products That May Be Supplied, But Are Not Installed Under This Section:**
1. Control Station

1.3 SYSTEM DESCRIPTION

- A. **Performance Requirements:**
1. **Wind Loading:**
 - a. Design doors to withstand positive and negative wind loads as calculated in accordance with applicable building code and detailed in structural documents.
 - b. Doors to withstand up to 25 PSF design wind load.

- c. Doors tested to a pressure of 37.5 PSF.
- 2. **Air Infiltration:**
 - a. Meets ASHRAE® 90.1 and IECC® (International Energy Conservation Code) 2021 Section C406.9 Air Infiltration requirements with an independently tested value of 0.2 cfm/ft².
 - b. Design includes a gasket between sections and a specialized field-installed header seal on top section to reduce air infiltration.
- B. **Design Requirements:**
 - 1. **Cycle Life:**
 - a. Life expectancy of up to 25,000 cycles.
 - b. Standard construction for normal use of up to 20 cycles per day maximum.

1.4 SUBMITTALS

- A. Reference Section 01 33 00—Submittal Procedures; submit the following items:
 - 1. **Product Data:** Manufacturer's data sheets on each product to be used.
 - 2. **Shop Drawings:** Include special conditions not detailed in Product Data. Show interface with adjacent work. Include opening dimensions, connection details, anchorage spacing, hardware locations, and installation details.
 - 3. **Manufacturer's installation instructions**
 - 4. **Closeout Submittals:**
 - a. Operation and Maintenance Manual.
 - b. Certificate stating that installed materials comply with this specification.

1.5 QUALITY ASSURANCE

- A. **Qualifications:**
 - 1. **Manufacturer Qualifications:** ISO 9001:2015 registered and a minimum of five years' of documented experience.
 - 2. **Installer Qualifications:** Manufacturer's approval.

1.6 DELIVERY STORAGE AND HANDLING

- A. Reference Section 01 66 00—Product Storage and Handling Requirements.
- B. Follow manufacturer's instructions.

PART 2: PRODUCTS

2.1 MANUFACTURER

- A. **Manufacturer:**
 - 1. **Clopay Building Products:** 8585 Duke Blvd. Mason, OH 45040.
 - 2. **Cookson:** 1901 South Litchfield Road Goodyear, AZ 85338.
 - 3. **Cornell:** 24 Elmwood Avenue, Mountain Top, PA 18707.
 - 4. **Substitutions:** Not permitted.

2.2 PRODUCT INFO

- A. **Model:**
 - 1. Model VS904U

2.3 MATERIALS

- A. **Stacking overhead door:** Glazed aluminum vertically stacking overhead door with no floor or ceiling tracks. Sections stack together above opening without the need for hinges or other visible hardware connecting sections together.
 - 1. Approved Product: VertiStack Clear.
 - 2. Model VS904U, VS904NU, or VS904LU.
- B. **Sections:**
 - 1. **Section construction:**
 - a. Sections are 2-1/8 inches (54 mm) thick extruded 6053-T5 aluminum, consisting of center stiles, end stile, intermediate rails, and top and bottom rails with solid or glazing panels. Panel widths are equally spaced.
 - b. Section rails and stiles: Polyurethane foam injected.

- c. Full-vision sections include glass held in place with snap-in glazing bead and hot melt adhesive.
- d. Sections to stack above opening when door is in open position

2. **Panels/Glazing:**

****NOTE TO SPECIFIER**** Select one glazing/panel option from the following and delete options not required. Consult factory for other available glazing options. If selecting glass by others, custom glass, or multiple glass types for a single door, please contact the manufacturer for assistance.

- a. Solid Single 0.050" Thick Aluminum Sheet
- a. Insulated Two (2) 0.050" Thick Aluminum Sheets w/ 3/8" foam
- a. 1/8" DSB [Clear] [Gray] [Bronze] [Satin Etched (Frosted)]
- a. 1/8" Lexan-Polycarb Clear
- a. 1/8" Plexiglass/Acrylic [Clear] [White]
- a. 1/8" Frosted Acrylic
- a. 1/8" Tempered [Clear] [Gray] [Bronze] [Obscure] [Satin Etched (Frosted)]
- a. 1/8" Plexiglass/Acrylic Gray
- a. 1/4" Plexiglass/Acrylic Clear
- a. 1/4" Lexan-Polycarb Clear
- a. 1/4" Laminated White
- a. 1/4" Polygal Double Wall Clear
- a. 1/4" Clear
- a. 1/4" Tempered [Clear] [Gray] [Mirrored] [Frosted]
- a. 1/4" Wire Glass
- a. 1/4" Laminated [Clear] [Gray] [Bronze] [Black]
- a. 1/2" Insulated [Clear] [Gray] [Bronze] [Obscure] [Frosted]
- a. 1/2" Insulated Low-E [Clear] [Gray] [Bronze]
- a. 1/2" Insulated Tempered [Clear] [Gray] [Bronze] [Obscure] [Frosted]
- a. 1/2" Insulated Tempered Low-E [Clear] [Gray] [Bronze]
- a. 5/8" Polygal Triple Wall Clear
- a. No glass (glass by others) – must contact manufacturer for assistance.
- a. Custom – must contact manufacturer for assistance.

2. **Aluminum Finish:**

****NOTE TO SPECIFIER**** Select one finish option from the following and delete options not required. Consult factory for other available finish options.

- a. **Anodized finish:** [Clear Anodized] [Bronze Anodized] [Dark Bronze Anodized] [Black Anodized]
- a. **Painted finish:** [Chocolate Brown Painted] [White Painted] [Bronze Painted]
- a. **Custom finish:** [Color Blast]

B. **Wall angles:**

- 1. **Fabrication:** steel wall angles, powder coated to match guide covers and bracket plates.

C. **Track:**

- 1. Vertical continuous angle mounted, 2" galvanized full tapered steel track, which must not require ceiling mount.
- 2. Track and rollers must be concealed by guide covers when door is fully installed.

D. **Guide Covers:**

- 1. **Fabrication:** steel guide covers.
- 2. Guide covers are to be installed without the need for visible fasteners.
- 3. **Finish:**
 - a. **Powder Coat:** Zirconium pre-treatment followed by baked-on polyester powder coat. Minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better. Color: Matte Black LL 162021
- 4. **Section locking devices:** Manually operated locking mechanism mounted on both sides of the door, positioned between wall angle and guide cover. Locks impede opening of door and/or separating of sections while door is in the closed position. Lock handles have the ability to be padlocked in place if desired.
- 5. **Interlock:** Includes interlock for use with motor to prevent operation while locked.

- E. **Weatherstripping:**
 - 1. Vinyl top weather seal and reverse angle jamb weather seal.
 - 2. Top weather seal must be affixed to top section and not at the header.
- F. **Spring Counterbalance:**
 - 1. **Spring Balance:** torsion spring counterbalance mechanism sized to weight of the door.
 - 2. Include 25,000-cycle torsion springs.
 - 3. **Strap assembly:** high-strength strap assembly.
- G. **Brackets:** Fabricate from minimum 7 gauge steel plate with permanently lubricated ball or roller bearings at rotating support points to support counterbalance shaft assembly and form end closures.
 - 1. **Finish:**
 - a. **Powder Coat:** Zirconium pre-treatment followed by baked-on polyester powder coat. Minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better. Color: Matte Black LL 162021

****NOTE TO SPECIFIER**** Hood is optional. If hood is required, select either two-sided hood or three-sided hood. Delete hood section if not required.

- H. **Hood:** [three-sided] [two-sided] hood fabricated from 24-gauge steel with reinforced top and bottom edges.
 - 1. **Finish:**
 - a. **Powder Coat:** Zirconium pre-treatment followed by baked-on polyester powder coat. Minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better. Color: Matte Black LL 162021

1.2 OPERATION

- A. **Motor Operation:**
 - 1. **VSH Standard Series Operator – ½ horsepower UL listed gear head motor**
 - a. The operator is to include a totally enclosed non ventilated (TENV) gear head motor, reversing magnetic controller in NEMA 1 enclosure, spur gearbox for drive reduction, and an electric brake.
 - b. The controller shall include UL listed thermal overload protection, rotary limit switches, safety edge circuit and transformer with 24 volt control secondary, and delay on reverse.
 - c. All components of the motor controller are to be pre-wired to a terminal block using color coding of the wires to facilitate troubleshooting.
 - d. The operator must not extend above or below the door coil when mounted front-of-coil.
 - e. Rated for a maximum of 20 cycles per hour
 - f. Supply motor with the following configuration: [] Volts, [] Phase, [] Hertz
- **NOTE TO SPECIFIER**** Select one of the following motor configurations and delete remaining options. If selecting one of the custom configurations, please contact the manufacturer to confirm availability and lead times.
- i. Standard configurations:
 - 1. 120 Volts, 1-phase, 60 Hertz
 - 1. 208 Volts, 3-phase, 60 Hertz
 - 1. 230 Volts, 3-phase, 60 Hertz
 - 1. 460 Volts, 3-phase, 60 Hertz
 - ii. Custom configurations:
 - 1. 230 Volts, 1-phase, 60 Hertz
 - 1. 575 Volts, 3-phase, 60 Hertz
 - 1. 230 Volts, 1-phase, 50 Hertz
 - 1. 380 Volts, 3-phase, 50 Hertz
 - 1. 400 Volts, 3-phase, 50 Hertz
 - 1. 415 Volts, 3-phase, 50 Hertz
 - g. Operator shall be equipped with an emergency manual chain hoist assembly that safely cuts operator power when engaged. A disconnect chain shall not be required to engage or release the manual chain hoist.
 - h. Operator to be supplied with 72" minimum of #50 roller chain.

- i. The electrical contractor shall mount the control station(s) and supply the appropriate disconnect switch, all conduit and wiring per the motor operator wiring instructions.

B. **Control Stations:**

****NOTE TO SPECIFIER**** Include one or more of the following control options if required and delete other options.

1. NEMA 1 Interior Flush Mounted Key Control
1. NEMA 1 Interior Flush Mounted Key Control with Best Cylinder
1. NEMA 1 Interior Flush Mounted Key Control with Stop Button and Standard Cylinder
1. NEMA 1 Interior Flush Mounted Key Control with Stop Button and Best Cylinder
1. NEMA 1 Interior Flush Mounted Key Control with Stop Button and Schlage Cylinder
1. NEMA 1 Interior Flush Mounted Three Button Control Station
1. NEMA 1 Interior Surface Mounted Three Button Control Station
1. NEMA 3R Surface Mounted Key Control with Standard Cylinder
1. NEMA 3R Surface Mounted Key Control with Best 7-Pin Cylinder
1. NEMA 3R Surface Mounted Key Control with Stop Button and Standard Cylinder
1. NEMA 3R Surface Mounted Key Control with Stop Button and Best Cylinder

B. **Safety Devices:**

****NOTE TO SPECIFIER**** A primary entrapment device is required. Select either option 1 or option 2 and delete the other option.

1. **Electric sensing edge:** supply door with a monitored electric sensing edge and wireless edge kit. (Only available on doors over 53" high.)
 - a. **2-wire, monitored E.L.R. electric sensing edge** extending full width of door bottom bar. Contact before door fully closes shall cause door to immediately stop downward travel and reverse direction to the fully opened position.
 - b. **Wireless Edge Kit:** for use with electric sensing edge to provide wireless connection.
1. **NEMA 4X photo eye sensors** consisting of a transmitter and receiver that are to be mounted within 6" (152.4 mm) of the floor, projecting an IR beam across the entire width of the door. Interruption of beam before door fully closes shall cause door to immediately stop downward travel and reverse direction to the fully opened position. Electrical contractor to provide low voltage wiring from the transmitter and receiver to the door operator.
1. **Light Curtain**, UL325 compliant. Consists of a transmitter and receiver mounted to the inside of guide cover, utilizing parallel beams across the entire width of the door. Interruption of beam before door fully closes shall cause door to immediately stop downward travel and reverse direction to the fully opened position. Electrical contractor to provide low voltage wiring from the transmitter and receiver to the door operator.
 - a. **3' light curtain**
 - b. **6' light curtain** (only available on doors heights $\geq 85"$)

1.2 ACCESSORIES

**** NOTE TO SPECIFIER **** Strap brake safety system is optional. Delete if not required.

- A. **Strap brake safety system:** engages guide mounted engagement teeth to effectively stop the door in the event of strap failure.

PART 3: EXECUTION

3.1 EXAMINATION

- A. Examine substrates upon which work will be installed and verify conditions are in accordance with approved shop drawings.
- B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.
- C. Commencement of work by installer is acceptance of substrate.

3.2 INSTALLATION

- A. General: Install door and operating equipment with necessary hardware, anchors, inserts, hangers and supports.

3.3 ADJUSTING

- A. Following completion of installation, including related work by others, lubricate, test, and adjust doors for ease of operation, free from warp, twist, or distortion.

3.4 FIELD QUALITY CONTROL

- A. Site Test: Test doors for normal operation.

3.5 CLEANING

- A. Clean surfaces soiled by work as recommended by manufacturer.
- B. Remove surplus materials and debris from the site.

3.6 DEMONSTRATION

- A. Demonstrate proper operation, testing and reset procedures to Owner's Representative.
- B. Instruct Owner's Representative in maintenance procedures.

END OF SECTION