

SECTION 144200 - WHEELCHAIR LIFTS

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:

- 1. Vertical platform lifts.
- 2. Inclined platform lifts.
- 3. Inclined stairway chairlifts.

- B. Related Sections:

- 1. Division 03 Section "Cast-in-Place Concrete" for setting sleeves, inserts, and anchoring devices in concrete.
- 2. Division 04 Section "Unit Masonry" for setting sleeves, inserts, and anchoring devices in masonry.
- 3. Division 08 Section "Door Hardware for runway-enclosure door hardware, including monitored, electric door strikes if not included in lift work.
- 4. Division 09 painting Sections for field painting of lift equipment.
- 5. Division 23 Sections for mechanical ventilation of fully enclosed exterior lifts with transparent walls.
- 6. Division 26 Sections for electrical service to lifts, including fused disconnect switches and emergency or auxiliary power supply.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, dimensions, electrical characteristics, safety features, controls, and finishes.
- B. Shop Drawings: For each lift. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 2. Wiring Diagrams: For power, signal, and control wiring.
- C. Samples for Initial Selection: For surfaces and components with factory-applied color finishes.
 - 1. Include similar Samples of accessories involving color selection.

- D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
 - 1. Metal Finish: Manufacturer's standard-size unit, not less than 3 inches (75 mm) square.
 - 2. Wood Finish: Manufacturer's standard-size unit, not less than 3 inches (75 mm) square.
 - 3. Tubular Products and Running Trim: Manufacturer's standard-size unit, 6 inches (150 mm) long.
 - 4. Glass and Glazing: Units 12 inches (300 mm) square.
 - 5. Hardware: Manufacturer's standard, exposed, door-operating device.
- E. Qualification Data: For qualified Installer.
- F. Manufacturer Certificates: Signed by lift manufacturer certifying that runway, ramp or pit, and dimensions as shown on Drawings and that electrical service as shown and specified are adequate for lift being provided.
- G. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted use of lifts.
- H. Operation and Maintenance Data: For each type of lift to include in operation and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:
 - 1. Parts list with sources indicated.
 - 2. Recommended parts inventory list.
- I. Warranty: Sample of special warranty.
- J. Continuing maintenance proposal.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
 - 1. Maintenance Proximity: Not more than two hours' normal travel time from Installer's place of business to Project site.
- B. Regulatory Requirements: In addition to requirements of authorities having jurisdiction, comply with ASME A18.1, "Safety Standard for Platform Lifts and Stairway Chairlifts."
- C. Fire-Rated, Runway-Enclosure Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at as close to neutral pressure as possible according to NFPA 252 UBC Standard 7-2 or UL 10B.
 - 1. Temperature-Rise Limit: Provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.

1.5 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of lifts that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.

1.6 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Beginning at Substantial Completion, provide 24 months' full maintenance by skilled employees of lift Installer. Include monthly preventive maintenance and repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper lift operation at rated speed and capacity. Provide parts and supplies the same as those used in the manufacture and installation of original equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Steel Tubing: ASTM A 500.
- C. Steel Pipe: ASTM A 53/A 53M; standard weight (Schedule 40) unless otherwise indicated or required by structural loads.
- D. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, commercial steel (CS), Type B, exposed, matte finish.
- E. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, commercial steel (CS), Type B, pickled.
- F. Galvanized-Steel Sheet: ASTM A 653/A 653M, G90 (Z275) zinc coating,
- G. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:
 - 1. ASTM A 123/A 123M, for galvanizing steel and iron products.
 - 2. ASTM A 153/A 153M, for galvanizing steel and iron hardware.
- H. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of alloy and temper designated below for each aluminum form required:
 - 1. Extruded Aluminum: ASTM B 221 (ASTM B 221M), Alloy 6063-T6.
 - 2. Aluminum Sheet: ASTM B 209 (ASTM B 209M), Alloy 5005-H15.
- I. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304.

- J. Stainless-Steel Tubing: ASTM A 554, Grade MT-304.
- K. Stainless-Steel Sheet, Strip, and Plate: ASTM A 240/A 240M or ASTM A 666, Type 304.
- L. Stainless-Steel Floor Plate: ASTM A 793.
- M. Wood and Wood Panel Products: Comply with requirements in Division 06 Section "Interior Architectural Woodwork."
- N. Wood and Wood Panel Products:
 - 1. Wood: Clear, vertical-grain, straight, kiln-dried wood, AWPA C20-02, Interior Type A, fire-retardant treated; of manufacturer's standard species.
 - 2. Wood Panels: Provide wood panels consisting of wood veneer and wood panel as follows:
 - a. Wood Veneer: Laminated to core with moisture-resistant adhesive.
 - 1) Species: Red oak.
 - 2) Cut: Plain sawn.
 - b. Plywood: DOC PS 1.
 - c. Particleboard: ANSI A208.1, made with binder containing no urea formaldehyde.
 - d. Medium-Density Fiberboard: ANSI A208.2, made with binder containing no urea formaldehyde.
 - 3. Fire-Retardant-Treated Wood Panels: Provide wood panels consisting of wood veneer and AWPA C27-02 fire-retardant-treated wood panels. Panels shall have flame-spread index of 25 or less and smoke-developed index of 450 or less per ASTM E 84.
 - a. Wood Veneer: Laminated to core with moisture-resistant adhesive.
 - 1) Species: Red oak
 - 2) Cut: Plain sawn.
 - b. Plywood: DOC PS 1.
 - c. Particleboard: ANSI A208.1, made with binder containing no urea formaldehyde.
 - d. Medium-Density Fiberboard: ANSI A208.2, made with binder containing no urea formaldehyde.
- O. Fiberglass: Multiple laminations of glass-fiber-reinforced polyester resin with UV-light-stable, colorfast, nonfading, weather- and stain-resistant, colored polyester gel coat, and manufacturer's standard finish.
- P. Glass: Comply with requirements in Division 08 Section "Glazing."
- Q. Glass: As selected by Architect from manufacturer's full range and complying with ASME A18.1.

1. Safety Glazing Products: Comply with testing requirements in 16 CFR 1201, Category II.
 2. Safety Glass Marking: Glass permanently marked with certification label of SGCC or another certification agency or manufacturer acceptable to authorities having jurisdiction.
- R. Acrylic Glazing: ASTM D 4802, Category A-1 (cell-cast) or Category A-2 (continuous cast), Finish 1 (smooth or polished), clear or tinted as indicated.
- S. Inserts: Furnish required concrete and masonry inserts and similar anchorage devices for installing structural members, guide rails, machines, and other lift components where installation of devices is specified in another Section.
- T. Expansion Anchors: Anchor-bolt-and-sleeve assembly of material indicated below with capability to sustain a load equal to 10 times the load imposed as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
 2. Material: Group 1, Alloy 304 or Alloy 316, stainless-steel bolts and nuts complying with ASTM F 593 (ASTM F 738M) and ASTM F 594 (ASTM F 836M).
- U. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107.

2.2 VERTICAL PLATFORM LIFTS

- A. Vertical Platform Lifts: Manufacturer's standard preengineered lift systems as indicated.
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Garaventa Accessibility.
 - b. Inclinator Company of America.
 - c. National Wheel-O-Vator Co., Inc. (The).
 - d. Savaria Corporation.
 - e. ThyssenKrupp Access; a ThyssenKrupp company.
- B. Platform Size: Minimum 34 by 51 inches.
- C. Door Operation and Clear Opening Width: Low-energy, power-operated doors that remain open for 20 seconds minimum; and door with minimum 32-inch (815-mm) and side door where required, with minimum 42-inch (1065-mm) clear opening width.
- D. Rated Speed: As required by Manufacture.
- E. Power Supply: 208 V, 60 Hz, 3 phase 240 V, 60 Hz, 1 phase 120 V, 60 Hz, 1 phase <Insert characteristics>.
- F. Emergency Operation: Provide emergency manual operation and emergency battery power system connection to indicated standby (emergency) power to raise or lower units in case of malfunction or power loss.

- G. Self-Supporting Units: Support vertical loads of units only at base, with lateral support only at landing levels.
- H. Partial Runway Enclosure: Manufacturer's standard weather-resistant enclosure assembly.
 - a. Glazing: Bronze-tinted acrylic glazing, 6.0 mm thick.
 - b. Glazing: Bronze-tinted, tempered safety and laminated safety glass, 6.0 mm thick, where indicated.
- 2. Fire-Rated Runway-Enclosure Door: Provide fire-rated runway-enclosure door where shown.
 - a. Fire-Protection Rating: 1-1/2 hours.
 - b. Equip door with wired glass vision panel, delay-action door closer, dead latch, dummy trim door handle, and electric strike.
- I. Platform Enclosure and Door: As indicated on drawings.
- J. Retractable Ramp: Provide ramp matching platform to provide transition from lower floor to lift platform. Ramp lowers to floor automatically when lifts reach lower landing and door opens. Ramp rises automatically when lift control is activated for lift to leave lower landing.
 - 1. Ramp Size: End ramps a minimum of 32 inches (815 mm) and side ramps a minimum of 42 inches (1065 mm) wide; length as required for slope.
 - 2. Ramp Slope: Maximum 1:12.
 - 3. Ramp Finish: Finish ramps to match lift platform unless specified elsewhere.

2.3 INCLINED PLATFORM LIFTS

- A. Inclined Platform Lifts: Manufacturer's standard preengineered lift systems as indicated.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Garaventa Accessibility.
 - b. National Wheel-O-Vator Co., Inc. (The).
 - c. Savaria Corporation.
 - d. ThyssenKrupp Access; a ThyssenKrupp company.
- B. Platform Size: Minimum-32 by 51 inches.
- C. Door Operation and Clear Opening Width: Low-energy, power-operated doors that remain open for 20 seconds minimum; end door with minimum 32-inch (815-mm) clear opening width.
- D. Rated Speed: 20 fpm (0.10 m/s)
- E. Minimum Headroom Clearance during Travel: Minimum of 80 inches (2032 mm) above any point on platform floor.
- F. Power Supply: As per manufacturer's specifications.

- G. Emergency Operation: Provide emergency manual operation and emergency battery power system connection to indicated standby (emergency) power to operate units in case of malfunction or loss of external power.
- H. Platform: Aluminum floor plate with nonskid surface texture.
- I. Automatic Folding Platforms: When not in use, platforms automatically fold up against wall to minimize projection into stairway.
- J. Platform Guarding: Guard platform with enclosure.
 - 1. Platform Enclosure (Side Walls and Self-Closing Door): Rectangular steel-tube frame with flush steel-sheet panels.
- K. Platform Enclosure (Side Walls and Self-Closing Door): Enclosure walls and doors matching appearance of adjacent railings, complying with Division 05 Section "Decorative Metal Railings.
- L. Retractable Ramp: Provide ramp matching platform to provide transition from floor to lift platform. Ramp lowers to floor automatically when lifts reach landing and enclosure door opens. Ramp rises automatically when lift control is activated for lift to leave landing.
 - 1. Ramp Size: End ramps a minimum of 32 inches (815 mm) and side ramps a minimum of 42 inches (1065 mm) wide; length as required for slope.
 - 2. Ramp Slope: As indicated Maximum 1:12.
 - 3. Ramp Finish: Finish ramps to match lift platform.
- M. Supporting Structure: Provide framing to support vertical loads from floor or stair treads and only lateral loads from walls. Fabricate framing from galvanized steel rectangular tubing, plates, shapes, and bars.
- N. Guide Rails: Fabricate from steel tubing.
- O. Accessories: Provide units with the following accessories:
 - 1. Fold-down seat with armrests and safety belt.
 - 2. Caution sign as required by ASME A18.1.

2.4 INCLINED STAIRWAY CHAIRLIFTS

- A. Inclined Stairway Chairlifts: Manufacturer's standard preengineered lift systems as indicated.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Inclinator Company of America.
 - b. Savaria Corporation.
 - c. ThyssenKrupp Access; a ThyssenKrupp company.
- B. Systems and Machinery: Manufacturer's standard preengineered lift systems as described in published product literature and shop drawings as follows:

1. Rated Capacity: Minimum 250 lb (113 kg).
 2. Rated Speed: 18 fpm (0.09 m/s).
- C. Power Supply: As per Manufactures specification.
- D. Battery Operation: Provide battery-operated drive with automatic charging system.
- E. Manual Lowering: Provide means to manually lower units in case of malfunction or power loss.
- F. Folding Units: Provide units that can be folded up against wall when not in use, to minimize projection into stairway.
- G. Supporting Structure: Provide brackets to support vertical loads from floor or stair treads and to support lateral loads from walls. Fabricate brackets from steel plates, shapes, or bars.
- H. Accessories: Provide units with the following accessories:
1. Tubular-steel, manually operated safety arms designed to restrain and provide grab bar for occupant.
 2. Retractable seat belt.
 3. Seat with back and two handgrips or arms.

2.5 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.6 FINISHES

- A. Galvanized-Steel Factory Finish:
1. Baked-Enamel Finish: Immediately after cleaning and pretreating, apply manufacturer's standard 2-coat, baked-on finish consisting of prime coat and thermosetting topcoat, with a minimum dry film thickness of 1 mil (0.025 mm) for topcoat.
 2. Powder-Coat Finish: Immediately after cleaning and pretreating, apply manufacturer's standard, thermosetting polyester or acrylic urethane powder coating with a cured film thickness not less than 1.5 mils (0.04 mm).
 3. Color and Gloss: As selected by Architect from manufacturer's full range.
- B. Aluminum Finishes:

- a. Color: As selected by Architect from full range of industry colors and color densities.
2. Powder-Coat Finish: Immediately after cleaning and pretreating, apply manufacturer's standard, thermosetting polyester or acrylic urethane powder coating with a cured film thickness not less than 1.5 mils (0.04 mm).
 - a. Color and Gloss: As selected by Architect from manufacturer's full range.
- C. Wood Finish: As specified in Division 09 Section "Staining and Transparent Finishing."
- D. Wood Finish: As selected by Architect from manufacturer's full range, as follows:
 1. Type: Transparent finish over stained wood as indicated/specified in the Drawings.
- E. Fiberglass Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, critical dimensions, and other conditions affecting performance.
- B. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Wiring Method: Conceal conductors and cables within housings of units or building construction. Do not install conduit exposed to view in finished spaces. Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.
- B. Coordinate runway doors with platform travel and positioning, for accurate alignment and minimum clearance between platforms, runway doors, sills, and door frames.
- C. Position sills accurately and fill space under sills solidly with nonshrink, nonmetallic grout.
- D. Coordinate platform doors with platform travel and positioning.
- E. Adjust stops for accurate stopping and leveling at each landing, within required tolerances.
 1. Leveling Tolerance: 1/4 inch (6 mm) up or down, regardless of load and direction of travel.

- F. Adjust retractable ramps to meet maximum allowable slope and change-in-elevation requirements, and to lie fully against landing surfaces.
- G. Lubricate operating parts of lift, including drive mechanism, guide rails, hinges, safety devices, and hardware.
- H. Test safety devices and verify smoothness of required protective enclosures and fascias

3.3 FIELD QUALITY CONTROL

- A. Acceptance Testing: On completion of lift installation and before permitting use of lifts, perform acceptance tests as required and recommended by ASME A18.1 and authorities having jurisdiction.
- B. Operating Test: In addition to above testing, load lifts to rated capacity and operate continuously for 30 minutes between lowest and highest landings served. Readjust stops, signal equipment, and other devices for accurate stopping and operation of system.
- C. Advise Owner and authorities having jurisdiction in advance of dates and times tests are to be performed on lifts.

3.4 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain lifts. Include a review of emergency systems and emergency procedures to be followed at time of operational failure and other building emergencies.
- B. Check operation of lifts with Owner's personnel present and before date of Substantial Completion. Determine that operating systems and devices are functioning properly.
- C. Check operation of lifts with Owner's personnel present not more than one month before end of warranty period. Determine that operating systems and devices are functioning properly.

END OF SECTION 144200