



SECTION 14 42 13

INCLINE WHEELCHAIR LIFTS

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Indoor inclined platform wheelchair lifts.
- B. Portable emergency evacuation device.

1.2 RELATED SECTIONS

- A. Section 03300 - Cast-In-Place Concrete: Anchor placement in concrete.
- B. Section 04800 - Masonry Assemblies: Anchor placement in masonry.
- C. Section 06100 - Rough Carpentry: Blocking in framed construction for lift attachment.
- D. Section 09260 - Gypsum Board Assemblies: Stair walls.
- E. Section 13650 - Fire Alarm System: Building Fire Alarm Integration system to connect the lift control system with the building fire alarm system.
- F. Division 16 - Electrical: Electrical power service and wiring connections.
- G. Division 16 - Electrical: Concealed low voltage control wiring.
- H. Division 16 - Electrical: Intercom and wiring.

1.3 REFERENCES

- A. ASME A17.5 - Elevator and Escalator Electrical Equipment.
- B. ASME A18.1a 2001 - Safety Standard for Platform Lifts and Stairway Chairlifts.
- C. ASME A18.1, Section 6, Private Residence Inclined Platforms.
- D. CSA B44.1 - Elevator and Escalator Electrical Equipment.
- E. CSA B355 - Lifts for Persons with Physical Disabilities.
- F. CSA B613-00 Private Residence Lifts for Persons with Physical Disabilities.

- G. ICC/ANSI A117.1 - Accessible and Usable Buildings and Facilities.
- H. NFPA 70 - National Electric Code.
- I. CSA - National Electric Code.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Submit manufacturer's installation instructions, including preparation, storage and handling requirements.
 - 2. Include complete description of performance and operating characteristics.
- C. Shop Drawings:
 - 1. Show typical details of assembly, erection and anchorage.
 - 2. Include wiring diagrams for power, control, and signal systems.
 - 3. Show complete layout and location of equipment, including required clearances.
- D. Selection Samples: For each finished product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finished product specified, two samples, representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Firm with minimum 10 years documented experience in manufacturing of inclined wheelchair platform lifts of installations of type specified.
- B. Installer Qualifications: Firm licensed to install equipment of this scope, with evidence of experience with specified equipment. Installer shall maintain an adequate stock of replacement parts and have qualified people available to ensure timely maintenance and callback service at the project site.

1.6 REGULATORY REQUIREMENTS

- A. Provide platform lifts in compliance with:
 - 1. ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts.
 - 2. ASME A17.5 - Elevator and Escalator Electrical Equipment.
 - 3. NFPA 70 - National Electric Code.
- B. Provide platform lifts in compliance with:
 - 1. CSA B355 - Lifts for Persons with Physical Disabilities.
 - 2. CSA B44.1/ASME A17.5 - Elevator and Escalator Electrical Equipment.
 - 3. CSA - National Electric Code.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store components off the ground in a dry covered area, protected from adverse weather conditions.

1.8 PROJECT CONDITIONS

- A. Do not use wheelchair lift for hoisting materials or personnel during construction period.

1.9 WARRANTY

- A. Warranty: Manufacturer shall warrant the wheelchair lift materials and workmanship for two years following completion of installation.
- B. Extended Warranty: Provide an extended manufacturer's warranty for the entire warranty period covering the wheelchair lift materials and workmanship for the following additional extended period beyond the initial warranty:
 - 1. Five additional years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garaventa Lift; United States - P.O. Box 1769, Blaine, WA 98231-1769. Canada - 7505 134A St., Surrey, BC V3W 7B3. ASD. Toll Free: 800-663-6556. Tel: (604) 594-0422. Fax: (604) 594-9915. Email: productinfo@garaventalift.com. Web: www.garaventalift.com.
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 BATTERY-POWERED STAIR LIFT FOR STRAIGHT STAIRWAYS

- A. Inclined Platform Lift: Garaventa Lift Stair-Lift Model X3 to serve one flight of straight stairs, with two landings and two stops. Lift consists of an extruded aluminum guide rail, a folding platform that is moved along the guide rail by an integrated rack and pinion drive system, overspeed safety system and call stations at each landing. Conform to the following design requirements:
 - 1. Application:
 - a. Commercial – installed in an area open to the public
 - b. Residential – installed in a private residence
 - 2. Location:
 - a. Indoor.
 - 3. Platform Load Rating: 550 lbs (250 kg), with minimum safety factor of 5.

4. Travel Speed: 13 fpm (4 m/min) traveling up; 16 fpm (5 m/min) traveling down.
5. Platform Deck: Surface shall be slip resistant with the following features:
 - a. Platform Size A: 31-1/2 inches (800 mm) wide by 48 inches (1220 mm) long (only available on commercial units, ADA-compliant)
 - b. Platform Size B: 31-1/2 inches (800 mm) wide by 41-3/8 inches (1050 mm) long.
 - c. Platform Size C: 31-1/2 inches (800 mm) wide by 35-1/2 inches (900 mm) long.
 - d. Platform Size D: 27-1/2 inches (700 mm) wide by 29-1/2 inches (750 mm) long.
6. Platform Operation:
 - a. Manual fold: Platform is manually folded and unfolded at the landing (residential applications only).
 - b. Automatic Fold: Folded and unfolded electrically from the call station.
 - c. Emergency Manual Fold: When left in the open position, platform may be manually folded and retained in the closed position.
7. Under Platform Obstruction Sensing:
 - a. Provide under-platform sensing device to stop platform from traveling in the downward direction when encountering 4 lb/f (20 N) of pressure.
 - b. Platform is permitted to travel in the opposite direction of the obstruction to allow clearing.
8. Passenger Curved Safety Arms:
 - a. Platform equipped with retractable passenger restraining arms.
 - b. Arms stop moving when an obstruction causing 4 lb/f (20 N) of pressure is encountered and immediately retract when signal is removed.
 - c. Arms folded and unfolded electrically from the call stations or platform controls.
 - d. Provide with means to manually unlock and open the restraining arms for passenger emergency evacuation.
 - e. Top of arms mounted 37-3/8 inches (948 mm) above platform deck. When in guarding position arms are located above the perimeter of the platform.
 - f. Gaps between ends of the arms shall not exceed 4 inches (100 mm).
9. Boarding Ramps:
 - a. Provide boarding sides of platform with retractable ramps positioned for travel at a height of 6 inches (150 mm) measured vertically above platform deck.
 - b. Ramps lock in guarding positions during travel. When platform is at the landing, only the retractable ramp servicing the landing shall be operable.
 - c. Ramps fold and unfold manually, simultaneous to the manual fold or unfolding of the manual platform.
 - d. Ramps folded and unfolded electrically.
 - e. Retractable ramps, in the guarded position, shall withstand a force of 125 lb/f (550 N) applied on any 4 inches (100 mm) by 4 inches (100 mm) area. This force shall not cause the height of the ramp, at any point in its length, to be less than 6 inches (150 mm) measured vertically above the platform deck.
 - f. Provide a means to manually unlock the ramps for emergency evacuation when platform is located at landing.

- g. Provide with a bi-directional obstruction sensitive device on the travel direction end of the platform to stop the lift when 4 lb/f (20 N) of pressure is encountered from either inside or outside of the platform. Platform is permitted to travel in the opposite direction of obstruction to allow clearing.
10. Platform Kick Plate:
- a. Provide on the non-boarding and non-guide rail side of the platform a kick plate of not less 6 inches (150 mm) in height, measured vertically from the platform deck.
11. Controls:
- a. Controls: 24 VDC Low Voltage type.
 - b. Platform equipped with emergency stop switch located within reach of passenger. Emergency stop button shall cause electric power to be removed from the drive system stopping lift immediately.
 - c. Platform operating controls shall be two separate 1-1/2 inch (36 mm) diameter round illuminated constant pressure buttons with directional arrows, and an emergency stop switch mounted on the front surface of the platform control panel.
 - d. When the platform arrives at landing and the user releases the directional control button, the user manually raises the arm on the entry side of the platform thus lowering the platform ramp.
 - e. When the platform arrives at landing and the user releases the directional control button, the arm on the entry side of the platform is automatically raised and the corresponding platform ramp is simultaneously lowered (automatic platforms only).
 - f. Platform control panel includes a receptacle for an optional plug-in attendant hand-held pendant control.
 - g. Allow the platform to be called to the opposite landing in the folded position.
12. Attendant Hand-Held Pendant Control: Provide plug-in remote pendant control for attendant operation.
13. Platform on-Board Emergency Alarm: Provide platform with an on-board alarm that sounds when emergency stop button is pushed. The alarm shall have a battery back-up so that it will continue to function if lift power is lost.
- B. Drive and Guide Rail System:
1. Operation:
- a. Motor: 24 Volt PMDC motor with IP54 protection.
 - b. Power requirements: 2 x12 VDC batteries located behind conveyance. Equipped with "out of charging station" alarm
 - c. Charger: 120 VAC single phase, 50 Hz. On a dedicated circuit, providing 2 amp charging current to unit.
 - d. Power Transmission: Worm gear reduction to a pinion moving on a fixed gear rack.
 - e. Provide a frequency inverter to smoothly start and stop the platform motion.
 - f. Locate drive carriage and associated control devices within the platform conveyance.
 - g. Provide an upper final limit switch to stop the lift in the event of a failure of the primary limit switch.

- h. Equip drive system with an hour counter.
 - 2. Guide Rail System:
 - a. Two-part guide rail system consisting of:
 - 1) Main Upper Rail: Anodized aluminum extrusion weighing 8 lb/ft (11.9 kg/m) with integrally mounted zinc plated gear rack.
 - 2) Lower Rail: 1-1/2 inches (38 mm) by 2-1/2 inches (64 mm) anodized aluminum extrusion.
 - b. Rail Mounting:
 - 1) Direct Mount Solid Walls: Rails directly mounted to the stairway wall.
 - 2) Direct Mount Wood Stud Walls: Upper rail attached to a 2 inch (51 mm) by 8 inch (203 mm) board that is secured to the wall. Lower rail attached to a 2 inch (51 mm) by 4 inch (102 mm) board secured to the wall. Fasten each board to every available stud with a minimum of two fasteners.
 - 3) Tower Mount Struts: Provide with 2-1/2 inches (65 mm) by 2-1/2 inches (65 mm) hollow structural steel tubular posts to support the guide rails.
 - c. Provide a mechanical stop at the upper landing to prevent over-travel of the drive carriage in the event of a switch failure.
 - 3. Provide overspeed governor and brake on upper carriage drive, containing mechanical overspeed sensor and lock, with electrical drive cut-out protection.
 - 4. Provide with manual handwheel for emergency operation.
 - 5. Provide platform with folding seat.
- C. Call Stations:
- 1. Provide wireless call stations at both landings.
 - 2. Call stations shall be provided with directional control buttons for call and send.
 - 3. A one-touch control system shall be used to automatically fold/unfold the platform, boarding ramps and passenger safety arms.
 - 4. Provide Attendant remote control call station.
- D. Finish:
- 1. Design and fabricate lift to manufacturer's standard design for indoor and outdoor locations.
 - a. Aluminum guide rails and ramps to be anodized aluminum. Steel components shall be powder coated as follows:
 - 1) Fine Textured Satin Grey (RAL 7030).
 - 2) Custom color as selected by Architect from an RAL color chart.
 - b. Electrical printed circuit boards and control transformers to be treated with a conformal coating for resistance to ambient moisture.
 - 2. Platform Cover: Provide a durable and weather resistant nylon platform cover for protection.

2.3 EMERGENCY EVACUATION DEVICE

- A. Portable evacuation chair, Garaventa "Evacu-Trac" with steel storage enclosure:
 - 1. Capacity: 1 person, 300 lbs (136 kg) with minimum 1.5 times safety factor.
 - 2. Maximum Stair Angle: 40 degrees.
 - 3. Speed Governor: Piston brake.
 - 4. Brake: Manual mechanical brake, attendant must release brake bar for descent.
 - 5. Surface Mount Cabinet:
 - a. Steel cabinet and door panel. Available only in Satin Gray, left hinged only.
 - b. Size: Height 45-3/8 inches (1151 mm), width 20 inches (508 mm), depth 11 inches (279 mm).

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify required supports are correct.
- C. Verify electrical rough-in is at correct locations.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install platform lifts in accordance with in compliance with regulatory requirements specified and the manufacturer's instructions.
- B. Install system components and connect to building utilities.
- C. Accommodate equipment in space indicated.
- D. Startup equipment in accordance with manufacturer's instructions.
- E. Adjust for smooth operation.

3.4 FIELD QUALITY CONTROL

- A. Perform tests in compliance with regulatory requirements specified and as required by authorities having jurisdiction.
- B. Schedule tests with agencies and Architect, Owner, and Contractor present.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION