

Planet Mobility Inc.

PHONE: (866) GO-LIFTS; FAX: 586-677-6379; website: www.planetmobility.com

SECTION 14245

HYDRAULIC RESIDENTIAL ELEVATOR

******* Since 1982 Liftavator, Inc. has provided limited use/limited application (LU/LA) elevators, residential elevators, hydraulic vertical platform wheelchair lifts, and inclined folding seats. These products are suitable for creating barrier free environments in both new and existing construction.**

This guide specification section can be used for specifying Liftavator Residential Elevators. Other Liftavator products can be specified with the following guides:

Section 14244 - Limited Use Hydraulic Elevator: Liftavator LU/LA Elevators.

Section 14421 - Hydraulic Vertical Platform Lift: Verti-Lift.

The specification section is organized by placing information in three standard parts:

PART 1 - GENERAL Describes administrative and procedural requirements.

PART 2 - PRODUCTS Describes materials, products, and accessories to be incorporated into the construction project.

PART 3 - EXECUTION Describes how the products will be installed at the construction site.

Throughout this product guide specification, references are made to other specification sections that might be contained in the project manual. These references are presented as examples and coordination reminders. For each project, these references will need to be revised to reflect actual sections being used.

Within the specification text, Imperial dimensions are presented first in brackets followed by System International Metric (SI) equivalents also in brackets. Depending on project requirements, either the Imperial or the SI metric equivalents will need to be deleted.

The specifier will need to edit this product specification for a specific project to reflect the options and applications being used. The guide section has been written so that most editing can be accomplished by deleting unnecessary requirements and options. Depending on project requirements, some additional information will need to be added by the specifier. Options are indicated by []. Notes to assist the specifier in selecting options and editing the specification guide are printed in bold and indicated with ***. For final editing, all brackets and notes will need to be deleted from the guide.**

PART 1 - GENERAL

1.1 SUMMARY

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- A. Section includes: Residential, holeless, hydraulic elevator complete with platform, cab, hydraulic drive unit, controller, hoistway doors, and car gate.
- B. Related sections:

******* List other specification sections dealing with work directly related to this section such as the following. *******

1. Section 03300 - Cast-in-Place Concrete: Construction of elevator pit.
2. Section 05500 - Metal Fabrications: Steel access ladder for pit and supports for rail brackets.
3. [Section 04800 - Masonry Assemblies] [Section 06100 - Rough Carpentry] [Section 09260 - Gypsum Board Assemblies]: Construction of hoistway and elevator equipment room.
4. [Section 09650 - Resilient Flooring] [Section 09680 - Carpet]: Floor finish for elevator cab.
5. Division 16000 - Electrical: Electrical service for elevator, conduit, copper feeder, branch wiring, disconnect switch, convenience and telephone outlets, GFI outlet and light fixture in pit, and heat and smoke detectors.

1.2 REFERENCES

****** List by number and full title reference standards referred to in remainder of specification section. Delete non-applicable references. ******

- A. American Society of Mechanical Engineers (ASME) and American National Standards Institute (ANSI): ASME/ANSI A17.1 - Safety Code for Elevators, Dumbwaiters, Escalators, and Moving Stairs; Part 5, Sec 5.3 - Limited Use/Limited Application.
- B. International Code Council (ICC) and American National Standards Institute (ANSI): ICC/ANSI A117.1 - Standard on Accessible and Useable Buildings and Facilities.
- C. National Elevator Industry, Inc. (NEII) - NEII Suggested Minimum Passenger Elevator Requirements for the Handicapped.
- D. National Fire Protection Association (NFPA):
 1. NFPA 70 - National Electric Code.
 2. NFPA 80 - Fire Doors and Windows.

1.3 SUBMITTALS

- A. Provide in accordance with Section 01330 - Submittal Procedures:
1. Product data for principal components with descriptions of features, performance and operating characteristics, electrical characteristics, controls, and connection requirements.
 2. Shop drawings: Present plans, elevations, sections, and details showing dimensions, clearances, tolerances, component locations, elevator equipment room layout, control diagrams, loadings, and installation details.
 3. Samples of exposed finishes.
 4. Copy of warranty required by Paragraph 1.5 for review by Architect.
 5. Copy of maintenance contract required by Paragraph 1.6 for review by Owner and Architect.
- B. Provide in accordance with Section 01778 - Closeout Submittals: Operation and maintenance manuals.

1.4 QUALITY ASSURANCE

- A. Perform work in accordance with ASME/ANSI A17.1 and NFPA 70.

******* Liftavator elevators are designed to provide barrier free environments in both new and existing construction. Barrier free requirements will depend on type of project and local jurisdiction. Edit and include the following paragraph if elevators need to accommodate persons with physical disabilities. *******

- B. Design and installation shall conform to NEII Suggested Requirements and ICC/ANSI A117.1 [] for provisions for physically handicapped.

******* Liftavator standard hoistway doors are fire-rated, UL B label, 90 minutes assemblies. *******

- C. Comply with NFPA 80 and provide fire rated hoistway entrances tested and labelled by Underwriters Laboratories. Inc. (UL).
- D. Products requiring electrical connection shall comply with NFPA 70 and be listed by Underwriters' Laboratories, Inc. (UL) as suitable for the purpose indicated.
- E. Qualifications:
1. Manufacturer: Company specializing in manufacture of hydraulic elevators

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with 20 years minimum documented experience.

2. Installer: Either employee or certified installer of elevator manufacturer.

1.5 WARRANTY

- A. Provide in accordance with Section 01780 - Closeout Submittals: 5 years parts warranty.

1.6 MAINTENANCE SERVICE

******* A separate, one year, renewable maintenance contract can be provided by Liftavator, Inc.**

- A. Furnish maintenance service for elevator system for one year from date of Substantial Completion.
- B. Examine system components bi-annually. Clean, adjust, and lubricate equipment.
- C. Repair or replace parts whenever required. Use parts produced by manufacturer of original equipment.
- D. Perform maintenance work using competent and qualified personnel under supervision and employ of original installer.
- E. Maintenance contract shall be renewable and shall not be assigned or transferred without prior written consent of Owner.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURER

- A. Liftavator, Inc.,
www.liftavator.com.
- B. Requests to use equivalent products of other manufacturers shall be submitted in accordance with Section 01630 - Product Substitution Procedures.

2.2 ELEVATOR

******* Liftavator manufacturers the following standard residential elevators:**

Model L14: 36 by 48 inches (914 by 1,219 mm) platform with folding gate. 63 by 61 inches (1,600 by 1,550mm) clear required for hoistway.

Model L24: 36 by 48 inches (914 by 1,219 mm) platform with two openings and folding gates back-to-back. 58 by 61 inches (1,473 by 1,550 mm) clear required for hoistway.

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Model L2R: 36 by 60 inches (914 by 1,524 mm) platform with two openings on adjacent sides and folding gates. 74 by 58 inches (1,879 by 1,473mm) clear required for hoistway.

Model L1-4x4: 48 by 48 inches (1,219 by 1,219 mm) platform with one opening and folding gate. 63 by 73 (1,600 by 1,854) clear required for hoistway.

Model L2-4x4: 48 by 48 inches (1,219 by 1,219 mm) platform with two openings and folding gates back-to-back. 58 by 73 inches (1,473by 1,854 mm) clear required for hoistway.

Model L1TD: 42 by 60 inches (1,067 by 1,524 mm) platform with one opening and sliding door. 76 by 68 inches (1,930 by 1,727 mm) clear required for hoistway.

Model L2TD: 42 by 60 inches (1,067 by 1,524 mm) platform with two openings and sliding doors back-to-back. 76 by 68 inches (1,930 by 1,727 mm) clear required for hoistway.

Refer to Liftavator product literature for elevator car configurations and opening placement. Contact Liftavator, Inc. for non-standard sizes and custom designs. Edit the following paragraphs to reflect elevator model required for project. *****

- A. Type: Residential, holeless, hydraulic elevator; Model No. [_____] as manufactured by Liftavator, Inc.
- B. Platform size: [_____] by [_____] [inches] [mm].
- C. Minimum clear hoistway: [_____] by [_____] [inches] [mm].

******* Standard car height is 82 inches (2,028 mm). *******

- D. Clear car height: [82 inches] [2,028 mm].

******* 42 inches (1,067 mm) is recommended pit depth. Minimum required for Liftavator Residential Elevators is 12 inches (305 mm). Contact Liftavator, Inc. when using less than recommended depth for specific requirements. *******

- E. Pit depth: [12 inches minimum] [1,067 mm] [_____].
- F. Rated net capacity: [750 pounds] [340 kg].
- G. Rated speed: [40 feet] [12 m] per minute.

******* Maximum travel distance is 50 feet (15.2 m). *******

- H. Travel distance: [_____].

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******* Maximum number of stops is 6. *******

- I. Number of stops: [2] [3] [4] [5] [6].
- J. Number of car openings: [1] [2 back-to-back] [2 on adjacent sides].
- K. Operation: Key controlled with illuminated car and landing push call buttons. Car station shall contain keyed on/off switch, light switch, stop button, alarm bell, and push button for each landing. Leveling shall be automatic.

2.3 EQUIPMENT

- A. Equip elevator with hydraulic cylindrical plunger to move car up and down hoistway and operated by electric, self-contained drive unit located in elevator equipment room. Drive unit shall allow for 2 speeds.
 - 1. Reservoir: 14 gage steel with [25 gallons] [95 liters] capacity.
 - 2. Motor: 5 HP, 220 volts, single phase, 30 amp.
 - 3. Pump: 3 screw, pulsation free, under oil type.
 - 4. Control valve: Unitized type with power-off manual lowering.
 - 5. Equip drive unit with low oil cut-out switch, oil tank level and temperature sight gauge, oil tank filler breather and strainer, and rubber isolation pads.
- B. Cylinder: Direct coupled holeless jack assembly complying with ANSI A17.1, 1302.1A, 1302.1, and 1302.34 and equipped with internal bearing, bronze head, bearing gland assembly, removable steel foot plate, air bleed port, and oil drain port. Higher rises utilizing a 2:1 cable hydraulic drive system.
- C. Controller: House controller components in metal cabinet with hinged door. Provide power relays, overload device, and microprocessor unit for logic control and safety circuits. Protect components with fused circuits. Incorporate emergency battery operated circuits in control logic to automatically provide lightning and lower lift during power failure.
- D. Provide steel T section guide rails bolted to welded steel wall brackets, anchors, and other hardware designed and sized according to code with appropriate safety factors.
- E. Piping: Provide size, type, and weight recommended by manufacturer. Provide isolation couplings to prevent sound and vibration transmissions from power unit.
- F. Electrical components: Conform to NFPA 70. Include wiring and connections to elevator devices remote from hoistway.

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2.4 CAR AND PLATFORM

- A. Frame: Cantilever design fabricated from welded steel sections. Fit with neoprene faced roller guide shoes and broken rope car safety and slack cable switch to cut off control valve power if rope becomes slack or broken. Or direct couple 4" structural carframe.
- B. Platform: Fabricated with welded steel channels and angles with 11 ga steel floor with 1/2" underlay.

2.5 CAB

- A. Exterior panels: Construct with 11 ga steel panels with interior wood paneling color choice chosen by owner.

****** Liftavator, Inc. can provide carpet tile floor finish or carpet or resilient flooring can be provided by others to coordinate with adjacent floor finishes. ******

- B. Flooring: [Carpet tile selected by Architect from elevator manufacturer's standard range.] [[Carpet] [Resilient flooring] [_____] provided under Section [_____].

****** Standard interior finish is plastic laminate. As an option, wood paneling or stainless steel finish can be provided. ******

- C. Interior wall and ceiling finish: [Plastic laminate with color and pattern selected by Architect from elevator manufacturer's standard range.] [Wood veneer face of species and factory applied finish selected by Architect from manufacturer's standard range.] [Brushed stainless steel.]

****** Liftavator Residential Elevators are typically provided with manual accordion folding, cab gates with either plastic laminate, wood veneer, or clear plexiglass finish. As an option, gate can be electrically operated. ******

- D. Cab gate: [Full height, [manually] [electrically] operated, accordion folding gate with flush panels finished with [plastic laminate] [wood veneer with factory applied finish] [clear acrylic plexiglass]. Equip gate with electrical interlock to prevent opening when elevator is not at landing.
- E. Ceiling lighting: Manufacturer's standard recessed down lights.

****** Standard fixtures are stainless steel. As option, bronze fixtures and trim can be provided. ******

- F. Fixtures: [Stainless steel with brushed No. 4 finish.] [Bronze.]
 - 1. Handrail: [3/4 by 3 inches] [19 by 76 mm].

2. Telephone cabinet with phone.
3. Inspection certificate and instructions frame.
4. Operation panel.

2.6 HOISTWAY ENTRANCE

- A. Hoistway door assembly: Manually operated, swinging, 90 minutes fire-rated, flush door and frame assembly; EZ Entry Door as manufactured by Liftavator, Inc.
- B. Size: [36 by 80 inches.] [914 by 2,032 mm.]

******* As an option, hoistway door can be electrically operated. Include the following paragraph to specify this option. *******

- C. Automatic operation: Equip hoistway doors with electrical operator to automatically open and close doors. Provide battery-back-up to operate doors in event of power failure.
- D. Equip door assembly with electro-mechanical interlocks to prevent door opening when elevator is not at landing.
- E. Hardware: Adjustable hydraulic delayed action closer, lever handle latchset, and vision light.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate work with other trades to ensure proper timing and sequencing and to avoid delays. Provide inserts and other anchorage devices for proper installation in concrete floors and walls. Coordinate requirements for structural attachment of rails.
- B. Examine and verify that hoistway, pit, openings, and elevator equipment room are correctly sized and ready for installation of elevator system. Do not proceed until deficiencies have been corrected.

3.2 INSTALLATION

- A. Install elevator in accordance with manufacturer's instructions and approved shop drawings.
- B. Install cylinder/plunger unit plumb and accurately centered for car position and travel. Anchor securely in place.

- C. Connections: Welded unless bolted connections are required for subsequent removal for inspection, maintenance, adjustment, or replacement of parts.
- D. Sound isolation: Mount rotating and vibrating equipment on vibration and acoustic isolators to prevent transmission of vibrations to structure. Securely fasten equipment and prevent lateral displacement.
- E. Guide rails: Accurate align and coordinate with entrance locations. Form smooth joints with machined splice plates. Compensate for expansion and contraction movement of rails.
- F. Hoistway entrances: Install door sills and frames in hoistway walls. Grout sills in place. Set entrances in vertical alignment with car openings.
- G. Cleaning: Remove protective coverings from finished surfaces. Clean surfaces and components.

3.3 TESTING AND DEMONSTRATION

- A. Upon completion and prior to permitting use of elevator, perform tests to verify load rating and safety factors meet or exceed ASME A17.1 specifications.
- B. Correct, adjust, and retest as required.
- C. Instruct Owner in proper use, operation, and maintenance of elevators. Review emergency provisions and procedures for checking malfunctions.

END OF SECTION