

**SECTION 11 73 00
CEILING MOUNTED PATIENT LIFT SYSTEM**

SPEC WRITER NOTE: Delete between //----// if not applicable to project. Also delete any other item or paragraph not applicable in the section and renumber the paragraphs.

PART 1 - GENERAL

1.1 DESCRIPTION

Ceiling Mounted Patient Lift Systems for the transfer of physically challenged patients are specified in this section.

1.2 RELATED WORK

- A. Section 01 00 00, GENERAL REQUIREMENTS: Requirements for pre-test of equipment.
- B. Section 13 05 41, SEISMIC RESTRAINT REQUIREMENTS FOR NON-STRUCTURAL COMPONENTS: Seismic requirements for non-structural equipment.
- C. Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS: General Electrical Requirements and items, which are common to sections of Division 26.

1.3 QUALITY ASSURANCE

SPEC WRITER NOTE: The U.S. Food and Drug Administration (FDA) classification system of medical devices, places ceiling lifts as Class I category. Class I devices are deemed to be low risk, and manufacturers are allowed to self-declare that they conform to all required standards. Manufactures are required to provide documented self-attestation/certification that they meet all the regulatory expectations.

- A. Certification for compliance is required for Ceiling Mounted Patient Lift Systems. Certifications shall be provided by the manufacturer who will conduct testing to ensure that the ceiling lift and charging system are safe and in compliance with ISO 10535 & UL 60601-1.
- B. Inspection of equipment after installation is required prior to use for patient movement. Inspection shall be in accordance with manufacturer's installation checklist and the facilities installation checklist (Patient Safety Alert AL14-07).

SPEC WRITER NOTE: This requirement is for Major and Minor projects where a commissioning agent is used and may be waived for NRM and Station Level projects

if a VA COR or General Engineer can perform this work. Verify requirement with Medical Center.

- C. Certification of compliance with VA requirements shall be provided by an independent third party, Inspector of Record (IOR), who will observe installation and manufacturer's testing to ensure that the ceiling structure, ceiling lift, and charging system is safe and compliance with shop drawings, structural calculations, specifications, ISO 10535 requirements, and code requirements. IOR shall be a registered structural engineer in the state of installation.

1.4 SUBMITTALS

- A. Submit in accordance with specification Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
1. Shop drawings shall show structural supports to the underside of structure. Structural calculations for the support of the track and its attachment to ceiling structure shall be submitted. Shop drawings used in the quoting phase shall be PDFs, and either 2D CAD files or 3D BIM files showing structural support to underside of structure. Shop drawings shall also provide general room layout with bed position and all obstructions to ceiling lift.
 2. Once the purchase order is accepted by the vendor, a set of stamped drawings shall be provided by the vendor. Shop drawings and structural calculations shall be signed and stamped by a registered structural engineer, and shall meet all code requirements in the jurisdiction having authority. Structural engineer shall ensure ceiling minimum structure capacity shall support the loads specified in the shop and installation drawings and be in compliance with local structural and seismic codes.
 3. Shop drawings shall show obstructions such as curtains, lights and sprinklers, and coordinate their relocation.
 4. Manufacturer shall provide BIM (Building Information Model) for clash detection on the request of the Resident Engineer (RE), VA Construction Agent, or General Contractor.
- B. Certificates of Compliance from Manufacturer
- C. Manufacturer's Literature and Data:
1. Lifting Capacity
 2. Lifting Speed
 3. Vertical Axis Motor
 4. Emergency Brake

- 5. Emergency Lowering Device
 - 6. Emergency Stopping Device
 - 7. Electronic Soft-Start and Soft-Stop Motor Control
 - 8. Current Limiter for Circuit Protection
 - 9. Strap Length
 - 10. All equipment anchors and supports. Submittals shall include weights, dimensions, center of gravity of the structural support, standard connections, manufacturer's recommendations and behavior problems (e.g., vibration, thermal expansion,) associated with equipment or piping so that the proposed installation can be properly reviewed.
- D. Individual Room layouts showing location of lift system installation shall be approved before proceeding with installation of lifts.
- E. Manufacturer's Checklist for after installation inspection.

1.5 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are listed in the text by the basic designation only.
- B. International Organization for Standardization (ISO):
10535-06.....Hoist for the Transfer of Disabled Persons-
Requirements and Test Methods
- C. Underwriters Laboratories (UL):
60601-1(2003).....Medical Electrical Equipment: General
Requirements for Safety
94-2013.....UL Standards for Safety Test for Flammability
of Plastic Materials for Parts in Devices and
Appliances-Fifth Edition

SPEC WRITER NOTE: As of April 1, 2017 the FDA will no longer accept declarations of conformity in support of either IEC 60601-1-2 Edition 3:2007-03 or ANSI/AAMI/IEC 60601-1-2: 2007/(R)2012.

- D. International Electromagnetic Commission (IEC):
60601-1-2(2015).....Medical electrical equipment - Part 1-2:
General requirements for basic safety and
essential performance - Collateral Standard:
Electromagnetic disturbances - Requirements and
tests.

SPEC WRITER NOTE: Download the latest version of the AL14-07 Installation Checklist (as an editable PDF) and include it as an addendum to this specification section. AL14-07 can be found on the VHA Patient Safety website, or can be requested from the local medical center Facilities Engineering Department. VA internal link is <http://vaww.ceosh.med.va.gov/10N/10NA9-HTML/Pages/documents/AL14-07PSAChecklistforInstallationandRelocation.pdf> .

E. VA Patient Safety Alert AL14-07

PART 2 - PRODUCTS

2.1 CEILING TRACK SYSTEM

- A. The Ceiling Track shall be made from high strength extruded aluminum or VA approved equal. Provide anchor supports at ceiling substrate.
- B. Installed rail shall be security tested for 1.5 times greater than the motor's weight capacity and maximum allowable deflection of a horizontal rail is no more than 1mm (1/16th inch) per 200mm (7.87 inch) of track length. (As per ISO 10535 standards.)

2.2 LIFT UNIT

- A. The Lift Unit shall be constructed of a steel frame system driven by a gear reduced high torque motor or VA approved equal.
- B. The Lift system shall have the following features.
 1. Lifting capacity: //550 lbs (249.476 kg) for non-bariatric lifts // 750-1000 lbs (340.194- 498.952 kg)for bariatric lifts //
 2. Electronic soft-start and soft-stop motor control
 3. Emergency lowering device
 4. Emergency stopping device
 5. Current limiter for circuit protection in case of overload.
 6. Safety device that stops the motor to lift when batteries are low.
 7. // Horizontal axis motor: //
 8. Emergency brake (in case of mechanical failure)
 9. Strap length:
 10. Cab: VO plastic-fire retardant, UL 94

2.3 MOTORS

- A. Vertical Movement-DC Motor

2.4 BATTERIES

- A. The life cycle (number of charging cycles) for batteries shall be in compliance with IEC 6100-1-2.
- B. Provide rechargeable batteries with up to 35 transfers with a load of 200lbs (74kg) (for repositioning) // a minimum of 17 transfers with its maximum load.//

2.5 CHARGER

- A. Charger

2.6 STRAPS AND SLING

- A. The straps shall meet ISO 10535 guidelines. The straps shall ensure the patient's safety by preventing the patient from falling out of the sling.
- B. The sling shall meet ISO 10535 guidelines. The sling shall cradle the body of the patient. // Bariatric slings shall be rated to a minimum of 750 lbs.//

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install ceiling mounted patient lift system as per manufacturer's instruction and under the supervision of manufacturer's qualified representative and as shown on drawings.
- B. If the distance in between the suspended ceiling and anchors is more than 12" consult with manufacturer to determine if lateral braces will be required.

3.2 INSTRUCTION AND PERSONNEL TRAINING

Training shall be provided for the required personnel to educate them on proper operation and maintenance for the lift system equipment.

3.3 TEST

Conduct performance test, in the presence of the Resident Engineer (RE) and/or Inspector of Record (IOR), and a manufacturer's field representative, to show that the patient lift system equipment and control devices operate properly and in accordance with design, specification, and code requirements.

3.4 INSPECTION

- 1. Inspection of installed ceiling mounted patient lift systems shall be conducted in accordance with the manufacturer's installation checklist and the VA installation checklist (Patient Safety Alert AL14-07) prior to use for patient movement.

2. Periodic Inspection shall be provided by the manufacturer on a yearly basis in compliance with ISO 10535.

SPEC WRITER NOTE: Provide terms of periodic inspection based on manufactures warranty or extended service contract. Verify terms of the contract with VA Medical Center Program Maintenance staff.

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