

Installing service lifts

Overview

This standard identifies the competences you need to install service lifts, in accordance with approved procedures. This will require you to survey the site for the proposed installation, and to make any necessary arrangements to have the required installation tools, and any specified components and site services, available so that the installation can be carried out safely and efficiently. You will be required to install service lifts such as traction, hydraulic or direct drive.

This standard does not involve assembly-type activities, such as fitting bearings and/or gears into a gearbox, or the installation of items of equipment that are simple, self-contained items requiring minimal installation. It does, however, include the connection of sub-assemblies (where these have been broken down for transportation purposes).

You will be required to select the appropriate tools and equipment to use, based on the operations to be performed and the components to be worked on during the installation. You will be expected to use appropriate tools and techniques to position, level and align the equipment, and to make all necessary connections to the required electrical power supply. The installation activities will include making all necessary checks and adjustments to ensure that components are correctly positioned and aligned, have appropriate tension or working clearances, are tightened to the correct torque, and that they function as per the specification.

Your responsibilities will require you to comply with organisational policy and procedures for the installation activities undertaken, and to report any problems with the activities, tools or equipment used, that you cannot personally resolve, or are outside your permitted authority, to the relevant people. You must ensure that all tools, equipment and materials used in the installation activities are removed from the work area on completion of the work, and that all necessary job/task documentation is completed accurately and legibly. You will be expected to work to instructions, alone or in conjunction with others, taking personal responsibility for your own actions, and for the quality and accuracy of the work that you carry out.

The installation activity may be carried out as a team effort, but you must demonstrate a significant personal contribution to the installation activities, in order to satisfy the requirements of the standard, and you must demonstrate competence in all the areas required by the standard.

Your underpinning knowledge will be sufficient to provide a sound basis for your work, and will enable you to adopt an informed approach to applying installation procedures for service lifts. You will have an understanding of the equipment being installed, its installation requirements, the correct function of the equipment and associated problems, in adequate depth to provide a sound basis for carrying out the installation process safely and effectively. You will also understand the installation methods and

Installing service lifts

procedures used, and their applications, in sufficient depth to be able to carry out the installation and ensure that the installed equipment functions to specification.

You will understand the safety precautions required when carrying out the installation activities, especially those for ensuring the safe isolation of services. You will be required to demonstrate safe working practices throughout, and will understand your responsibility for taking the necessary safeguards to protect yourself and others in the workplace.

Installing service lifts

Performance criteria

You must be able to:

1. work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
2. follow all relevant drawings and specifications for the installation being carried out
3. use the correct tools and equipment for the installation operations and check that they are in a safe and usable condition
4. install, position and secure the equipment and components in accordance with the specification
5. ensure that all necessary connections to the equipment are complete
6. deal promptly and effectively with problems within your control and report those that cannot be solved
7. check that the installation is complete and that all components are free from damage
8. complete paperwork on the installation in an appropriate format

Installing service lifts

Knowledge and understanding

You need to know and understand:

1. the specific safety practices and procedures that you need to observe when installing service lifts (including any specific legislation, safe working practices for lifts (such as BS7255), regulations/codes of practice for the activities, equipment or materials)
2. the procedures to be carried out before starting work on the installation (such as complying with any risk assessments and other health and safety requirements)
3. the health and safety requirements of the work area where you are carrying out the installation activities, and the responsibility these requirements place on you
4. the hazards associated with installing service lifts, and with the tools and equipment used, and how they can be minimised
5. the personal protective equipment (PPE) that you need to use for the installation activities, and where replacements can be obtained if supplied personal protective equipment becomes worn or damaged
6. what constitutes a hazardous voltage and how to recognise victims of electric shock
7. how to reduce the risks of a phase to earth shock (such as insulated tools, rubber mating and isolating transformers)
8. how to obtain and interpret information from job instructions and other relevant documentation used in the installation (such as installation drawings, standards, quality control procedures and specifications)
9. the equipment to be installed, its operating procedures and function
10. methods of marking out the site for positioning the equipment, and the tools and equipment used for this
11. the various mechanical fasteners that will be used, and their method of installation (including, threaded fasteners, special securing devices, masonry fixing devices)
12. procedures for ensuring that you have the correct tools, equipment, and fasteners for the installation activities
13. the types of tools and instruments used to position, secure and align the equipment (such as spanners, wrenches, levelling and alignment devices, measuring devices)
14. the techniques used to position, align, level, connect, adjust and secure the equipment
15. methods of lifting, handling and supporting the equipment during the installation activities
16. methods of connecting equipment to power supplies
17. why electrical bonding is critical, and why it must be both mechanically and electrically secure
18. how to dispose of waste items in an environmentally safe acceptable manner, and leave the work area in a safe condition

Installing service lifts

19. how to conduct any necessary checks to ensure the equipment integrity, functionality, accuracy and quality of the installation (including the fitting of covers to all moving parts and electrical connections)
20. the tools and equipment used in the installation activities, and their calibration/care and control procedures
21. the problems that can occur with the installation operations, and how these can be overcome
22. the documentation to be completed for the activities, and who to pass them to
23. the extent of your own responsibility and to whom you should report if you have problems that you cannot resolve

Installing service lifts

Scope/range related to performance criteria

1. Carry out **all** of the following before installing service lift equipment:
 1. check that the site is accessible and is free from obstructions or hazards
 2. check that the installation documentation is complete and current (such as, drawings, instructions, manufacturer's data, settings and other documentation)
 3. confirm that the appropriate electrical supply is available
 4. check that the required installation consumables are available
 5. check that safety and environmental conditions have been met
 6. confirm that the site has been suitably prepared for the installation to take place
 7. check that consignment contents are correct to the customer specification/order, and are free from damage
 8. outline the installation process with the customer
 9. undertake the installation to cause minimal disruption to the customer
2. Carry out **all** of the following activities during the installation
 1. adhere to procedures or systems in place for risk assessment, COSHH, personal protective equipment and other relevant safety regulations
 2. ensure the safe isolation of services during installation (such as mechanical, electricity)
 3. provide safe access and working arrangements for the installation area
 4. dispose of waste items in a safe and environmentally acceptable manner
 5. leave the work area in a safe condition and free from foreign object debris
 6. prepare components and assemblies for installation
3. Install **one** of the following types of service lift:
 1. hydraulic
 2. direct drive
 3. traction
4. Install **all** of the following service lift components/subassemblies:
 1. structures/guide brackets
 2. machine support steelwork/bedplates
 3. drive systems (such as traction, hydraulic or direct drive)

Installing service lifts

4. electrical wiring (cables, wiring, wiring enclosures)
 5. landing and car entrances
 6. lifting ropes and/or chains
 7. guides and fixings
 8. car assembly
 9. safety devices
 10. lift controller
 11. floor selection system
 12. ancillary equipment (such as warning signs, company specific options)
5. Apply installation methods and techniques, to include **five** of the following:
1. marking out of locating and securing positions
 2. positioning equipment
 3. aligning equipment
 4. levelling equipment
 5. shimming and packing
 6. securing by using mechanical fixings
 7. fixing by using adhesives and sealants
 8. securing by using masonry fixings
 9. applying screw fastener locking devices
 10. routing and securing wires and cables
6. Use **three** of the following tools during the installation activities:
1. straight edges
 2. alignment devices (spirit level, laser equipment)
 3. measuring instruments (electrical, mechanical)
 4. plumb lines
 5. tapes and measures
 6. self-diagnostic equipment
7. Make **two** of the following connections to the installed equipment:
1. mechanical connections
 2. electrical connections
 3. fluid power connections
8. Carry out checks and adjustments, to include:
1. testing to ensure that the equipment operates to the installation specification
- plus **six** more of the following:
2. checking level and alignment
 3. electrical continuity
 4. electrical insulation resistance

Installing service lifts

5. mains voltage and polarity
6. stall current and running current
7. overloads
8. earth continuity
9. making visual checks for completeness and freedom from damage
10. making sensory checks (sight, sound, smell, touch)
11. ensuring that moving parts are clear of obstruction, and are guarded
12. ensuring that locking devices are fitted to fasteners (as appropriate)

9. Deal with **two** of the following conditions during the installation process:

1. installations with no faults
2. partial equipment malfunction
3. complete malfunction of equipment

10. Produce installations which comply with **all** of the following standards, as appropriate to the equipment being installed:

1. equipment manufacturer's installation specification
2. BS, ISO and/or BSEN standards
3. customer requirements
4. company standards and procedures

11. Complete the relevant paperwork, to include **all** of the following, and pass it to the appropriate person:

1. user guide
2. installation work sheet
3. company-specific documentation

Installing service lifts

Developed by	Enginuity
Version Number	2
Date Approved	28 Feb 2015
Indicative Review Date	30 Mar 2018
Validity	Current
Status	Original
Originating Organisation	Semta
Original URN	SEMEMI2-46
Relevant Occupations	Maintenance Fitter
Suite	Engineering Maintenance and Installation Suite 2
Keywords	Engineering; manufacturing; installation; service lifts; hydraulic lift; direct drive lift; traction lift; lift car