

## Undertake complex movement of loads

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### Overview

This standard is about the complex movement of loads over a planned route to its final destination in engineering construction.

You will need to read and interpret detailed technical information and specifications to correctly select and install lifting and moving equipment throughout the planned route in order to achieve objectives. You will also need to take into consideration the complicated nature of the environment, and the required manipulation of the load whilst adhering to health and safety legislation, regulations and safe working practices.

In the context of this standard, the complex movement of loads means the use of multiple lifting points and a variety of lifting equipment to enable the controlled movement of the load along its planned route. Furthermore, you will need to demonstrate the controlled movement of the load through changes of orientation and height as it progresses along the pre-planned route until it reaches its final location.

UK regulations state that the complexity of lifting operations must be defined, guidance on how to do this can be found in standards which state: *Complexity of a lifting operation depends on the hazards associated with the load path, the load itself and the equipment lifting it, and the environment in which the lifting operation is being carried out.*

In the context of this standard, your responsibility is to interpret and work within given specifications, selecting techniques and making variations to achieve the best possible result. In some cases, you may still be expected to refer to others for final authorisation, even though you remain responsible for identifying and implementing decisions.

### Who this standard is for

This standard is for riggers and steel erectors

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### Performance criteria

*You must be able to:*

1. work safely at all times, complying with health, safety, environmental and other relevant legislation, regulations, guidelines and local rules or procedures
2. ensure that the **work environment**, material, equipment and tools are suitably prepared for the work activities to be undertaken
3. interpret and follow the specification applying the correct technical information as required to achieve the objectives
4. select the correct lifting equipment taking into account the materials and the environment
5. position the moving and lifting equipment as required to cross haul the load
6. attach the appropriate handling equipment securely to the load, using approved methods to eliminate slippage
7. confirm the load is secure before moving
8. move the load over the selected route
9. apply methods and techniques to manipulate loads through complicated environments and routes
10. maintain the correct mode factors during the complex movement of loads.
11. position the load safely in its intended final location
12. seek authority from the appropriate person to begin the complex movement of loads, position load in final position and to release tension of load
13. **reinstate the work area**
14. complete related quality control documentation procedures
15. deal promptly and effectively with problems, seek clarification if problems arise and report those that have been and those that cannot be solved

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### Knowledge and understanding

*You need to know and understand:*

1. relevant legislative, regulatory and local requirements or procedures and safe working practices including your responsibilities with regards to reporting lines and completing quality documentation procedures
2. preparation and reinstatement requirements for moving loads in respect of the work area, material and equipment, and the possible consequences of incorrect actions in these areas
3. methods and techniques used for the movement of loads through complicated environments and routes
4. methods and equipment used for the lifting of persons
5. technical information which is required to complete complex lifting operations
6. mode factors
7. how to identify and specify the correct location of a winch for the intended lifting operations
8. how to achieve mechanical advantage through the use of reeving multiple fall rigging arrangement (load and pull)
9. how to select lifting equipment for complicated environments and complex operations
10. complex load movement, route planning methods and techniques
11. roles of the Appointed Person (AP), and Lift Supervisor when carrying out complex lifts
12. tool, equipment and drawing control: the correct use of relevant tools, equipment and drawings and your individual responsibility for the use, care and security of those you use

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## Scope/range

### Work environment

Typical work environments could include:

- engineering construction sites
- controlled operations
- offshore installations
- maintenance sites
- nuclear sites
- repair sites

Work environments may be open or restricted spaces:

- at height
- confined spaces
- control rooms
- designated work areas
- explosive atmospheres
- existing plants and structures
- fabrication workshops
- in plant rooms
- inside structures, system and plant
- on access structures (scaffold)
- on open structures
- onshore and offshore installations
- shafts
- shipyards
- tunnels

### Reinstate the work area

This term could include:

- removing barriers
- maintain good housekeeping practices
- correctly disposal of waste materials in accordance with appropriate procedures
- storing re-usable materials, consumables and equipment in accordance with appropriate procedures
- completing all necessary documentation

ECIML09



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