
Overview

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This standard identifies the competences you need to move equipment, components or materials for mechanical overhaul activities, by slinging and lifting, in accordance with approved procedures. You will be required to use correctly specified items of lifting gear, which will include hand and/or power operated cranes and winches, and associated lifting accessories. You must check that the lifting equipment is within current authorisation dates, is undamaged and within the permitted safe working load (SWL) or working load limit (WLL). You will be expected to establish the weight of the load to be moved, and to attach the appropriate slings to suitable or designated lifting points on the load, in order to achieve a safe and balanced lift. You must check the area that the load will move through, to ensure that it is free from obstructions and is safe for the load to be moved. You will also be expected to be able to give the correct hand and verbal signals during the lifting activities.

Your responsibilities will require you to comply with organisational policy and procedures for the slinging, signalling and lifting activities undertaken, and to report any problems with the slinging and lifting activities or equipment that you cannot personally resolve, or that are outside your permitted authority, to the relevant people. You will be expected to work with a minimum of supervision, taking personal responsibility for your own actions and for the safety and integrity of the materials or items being moved.

Your underpinning knowledge will provide a good understanding of your work, and will provide an informed approach to applying slinging, lifting and moving procedures within a mechanical overhaul environment. You will understand the slinging, lifting and moving techniques used, and their application, and will know about the lifting equipment and accessories for lifting, in adequate depth to provide a sound basis for carrying out the activities safely and correctly.

You will understand the safety precautions required when slinging and lifting, and the safeguards that are necessary for undertaking the activities. You will be required to demonstrate safe working practices throughout, and will understand the responsibilities you owe to yourself and others in the workplace.

Performance criteria

You must be able to:

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1. work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
2. position the moving equipment so that the weight of the load is evenly distributed
3. attach the appropriate handling equipment securely to the load, using approved methods to eliminate slippage
4. confirm that the load is secure before moving
5. move the load over the selected, suitable route
6. position and release the load safely in its intended final location

Knowledge and understanding

You need to know and understand:

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1. how to work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
2. the hazards associated with slinging and lifting of loads, and how to minimise them and reduce the risks
3. the Approved Code of Practice (ACOP) for safe use of lifting equipment, and Lifting Operation and Lifting Equipment Regulations (LOLER) and other relevant regulations and standards
4. the specific requirements for the marking of lifting equipment, and the specific method used in the organisation in which you are working
5. the range of equipment that is to be used for the lifting operations
6. the lifting equipment accessories that are to be used
7. checks that should be made on the lifting equipment prior to use, and items that you should look for
8. how to carry out visual in-service inspections of the equipment, and what to do should any defective equipment be identified
9. how to determine the approximate weight of the load to be moved
10. factors which affect the selection of the lifting equipment and lifting accessories
11. how to identify the included angle when using multi-leg slings
12. how to check that the lifting equipment is capable of lifting the load to be moved
13. how to determine the centre of gravity of the load and determine suitable slinging and lifting and points
14. how to calculate loads on winches/lead ropes on multi-sheaved rigs
15. how to plan and prepare a route for moving loads, and the items that you will need to take into account
16. the specific requirements for the organisation of lifting operations
17. signalling techniques used to communicate with crane drivers (to include both hand signals and verbal commands)
18. how lifting equipment should be stored, handled and maintained
19. the problems that can occur with slinging, lifting and moving loads and how these can be avoided
20. the extent of your own responsibility and to whom you should report if you have problems that you cannot resolve

Scope/range related to performance criteria

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1. Ensure that the equipment to be used is suitable for the materials or components being lifted and is in a safe and usable condition, by checking all of the following:
 1. the lifting equipment is certified and is compliant, within current test dates
 2. all lifting equipment registers are up to date
 3. all slings are free from obvious defects
 4. the lifting equipment selected is suitable and has a sufficient SWL/WLL for the application
 5. the identification number and SWL or WLL are clearly marked on the equipment selected
 6. the equipment selected is suitable for the environment of operation
2. Before slinging, lifting or moving the load, ensure that all of the following, have been established/checked:
 1. weight of the load
 2. precautions are in place in case of spillage
 3. the proposed route of the load is clear of obstructions (where appropriate)
 4. those affected by the activities have been informed
 5. arrangements are made for securing/storing the load at its destination
 6. the agreed code of verbal/hand signals is understood (where appropriate)
3. Use two of the following lifting and moving methods and techniques:
 1. crane
 2. lifting appliances
 3. hand operated lifting equipment
 4. winch
 5. pulling appliances
 6. jacks, skates and trolleys
 7. multi-sheaved block combinations
 8. 9. powered lifting equipment
4. Use two of the following slinging methods:
 1. single leg slings
 2. lifting beams
 3. two-leg slings

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4. spreaders
 5. three- and four-leg slings
 6. other specific method
 5. Move two of the following types of load:
 1. components/equipment with evenly distributed weight
 2. access structures
 3. pipes, bars, joists (single and in bundles)
 4. components/equipment with unevenly distributed weight
 5. awkward shaped
 6. raw materials
 7. sheet materials
 8. liquid containers (such as drums)
 9. sub-assemblies
 10. corrosive/chemical
 11. fragile
 12. other specific type of load
 6. Move loads safely and correctly, and re-position in two of the following conditions:
 1. to differing elevations
 2. in the same elevation
 3. as part of an assembly
 4. turn a load
 5. through complex rigging operations
 7. Calculate loads in three of the following sheave block combinations:
 1. single
 2. two doubles
 3. two singles
 4. a treble and double
 5. a double and single
 8. Find the weight of the materials or components to be moved using all of the following as applicable:
 1. check against documentation
 2. by estimation
 3. calculation from drawings
 4. by converting metric-imperial
 5. load markings

SEMMME3100

Slinging, lifting and moving equipment, components or materials for overhauling activities



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