SEMFEW339 - SQA Unit Code H1WC 04
Slinging, lifting and moving materials and components

Overview

This unit identifies the competencies you need to move loads 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. You will be expected to correctly estimate the weight of the load to be moved and 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 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 equipment or the lifting activities that you cannot personally resolve, or are outside your permitted authority, to the relevant people. You will be expected to work with minimum supervision, taking personal responsibility for your own actions and the safety and integrity of the materials being moved.

Your underpinning knowledge will provide a good understanding of your work, and provide an informed approach to applying slinging, signalling and lifting procedures. You will understand the slinging, signalling and lifting 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 to the required specification. You will need to understand the safety precautions required when slinging and lifting components 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.

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Performance criteria

You must be able to:

P1 work safely at all times, complying with health and safety and other relevant regulations and guidelines
P2 position the moving equipment so that the weight of the load is evenly distributed
P3 attach the appropriate handling equipment securely to the load, using approved methods to eliminate slippage
P4 confirm that the load is secure before moving
P5 move the load over the selected, suitable route
P6 position and release the load safely in its intended final location

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Knowledge and understanding

You need to know and understand:

K1 the specific safety precautions to be taken when slinging and lifting loads and the need for ensuring load security (general workshop and site safety, appropriate personal protective equipment, protecting other workers during the lifting operations; accident procedure; statutory regulations, risk assessment procedures and COSHH regulations)

K2 the hazards associated with slinging and lifting of loads, and how they can be minimised

K3 an understanding of ACOP for safe use of lifting equipment and Lifting Operation and Lifting Equipment Regulations (LOLER)

K4 the specific requirements for the marking of lifting equipment and the specific method used in the organisation in which you are working

K5 the range of equipment that is to be used for the lifting operations such as hand and power operated cranes, winches pulling equipment

K6 the lifting equipment accessories that are to be used (such as slings, chains, wire ropes, eye bolts)

K7 checks that should be made on the lifting equipment prior to use, and things that you should look for

K8 how to carry out in-service inspections of the equipment and what to do should any defective equipment be identified

K9 how to determine the approximate weight of the load to be moved

K10 factors which affect the selection of the lifting equipment and lifting accessories (such as weight, type of load, operating environment)

K11 how to calculate loads on winches/lead ropes on multi-sheaved rigs

K12 how to identify the included angle when using multi-leg slings

K13 how to check that the lifting equipment is capable of lifting the load to be moved

K14 how to determine the centre of gravity of the load and determine suitable slinging and lifting points

K15 how to plan and prepare a route for moving loads and the things that you will need to take into account

K16 the specific requirements for the organisation of lifting operations

K17 signalling techniques used to communicate with crane drivers to include both hand signals and verbal commands

K18 how lifting equipment should be stored, handled and maintained.

K19 the extent of your own responsibility and whom you should report to if you have problems that you cannot resolve

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Additional Information

Scope/range related to performance criteria

You must be able to:

1. ensure that the equipment to be used is suitable for the components being lifted and in a safe and usable condition by checking **all** of the following:
   - 1.1 equipment is certified and is compliant, within current test dates
   - 1.2 all lifting equipment registers are up to date
   - 1.3 all slings are free from obvious defects
   - 1.4 the lifting equipment selected is suitable and has a sufficient SWL for the application
   - 1.5 the identification number and SWL are clearly marked on the equipment selected
   - 1.6 the equipment selected is suitable for the environment of operation
2. use **two** of the following lifting and moving methods and technique:
   - 2.1 crane
   - 2.2 lifting appliances
   - 2.3 hand operated lifting equipment
   - 2.4 winch
   - 2.5 pulling appliances
   - 2.6 jacks, skates & trolleys
   - 2.7 powered lifting equipment
   - 2.8 multi sheaved block combinations
3. use **two** of the following slinging methods:
   - 3.1 single leg slings
   - 3.2 two-leg slings
   - 3.3 three-and-four leg slings
4. move **two** of the following types of loads:
   - 4.1 sheet materials
   - 4.2 components with evenly distributed weight
   - 4.3 pipes, bars, joists etc. (single and in bundles)
   - 4.4 components with unevenly distributed weight
   - 4.5 fragile
   - 4.6 awkward shaped
   - 4.7 hot/radiant
   - 4.8 corrosive/chemical
5. move loads safely and correctly that are re-positioned in **two** of the following positions:
   - 5.1 to differing elevations
   - 5.2 along the same elevation
   - 5.3 as part of an assembly
   - 5.4 turn a load
   - 5.5 through complex rigging operations
6. calculate loads in **three** of the following sheave block combinations:
   - 6.1 single

6.2 two doubles
6.3 two singles
6.4 a treble and double
6.5 a double and single

7. find the weight of the materials/loads to be moved using **all** of the following as is applicable:
   7.1 check against documentation
   7.2 by estimation
   7.3 calculation from drawings
   7.4 by converting metric-imperial

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