

PRODSO5

Hydraulic extraction of dimension stone blocks



Overview

Achievement of this standard demonstrates your competence in splitting dimension stone from the face in a quarry using hydraulic equipment. You will also need a working knowledge of the local geology and the features of the quarry from which the stone is to be extracted. Communication within the team splitting the stone is vital for safe and efficient operations

This standard has two elements.

- 1 Prepare the work area
- 2 Split the dimension stone from the face

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Performance criteria

Prepare the work area

You must be able to:

- P1 ensure work activities are carried out safely to avoid creating hazardous situations that may endanger operators of the work and other personnel
- P2 follow correct lines of communication as laid down in local and organisational procedures
- P3 select the area required for clearing prior to extraction and cordon off/demarcate as needed
- P4 direct mobile plant clearing the work area in a safe and clear manner
- P5 select and check the condition of hand tools needed to complete the clearance operation
- P6 clear the work area of overburden as required by organisational procedures
- P7 dispose of overburden in a safe and controlled manner

Split the dimension stone from the face

You must be able to:

- P8 select the area of dimension stone to be split, observing the geology of the area and noting the natural faults and planes which will assist the operation
- P9 ensure that the area selected to be split has sufficient room for displacement
- P10 determine and mark out the most applicable drilling pattern for the area selected, considering the need for open or “stitch” drilling
- P11 direct the drill operator to drill the required pattern
- P12 ensure the work area is safe for access and egress after the drilling operation
- P13 position the hydraulic rig so as to allow the correct placement of the rams
- P14 check the condition of the seals, connections, controls of the hydraulic splitters and oil levels
- P15 check the depth of the drill holes to ensure sufficient clearance for the machinery to operate correctly
- P16 check that the hydraulic splitters are inserted into the drill holes with the correct orientation
- P17 Increase the pressure in the rams evenly across the face of the block to be removed
- P18 monitor the progression of the split in the face and increase the tension accordingly
- P19 communicate with the observer on the “open end” of the dimension stone to check for movement at the base of the selected block
- P20 stop the tensioning of the split once the dimension stone has separated from the face
- P21 retract the hydraulics and remove them from the face , storing them safely and correctly on the rig
- P22 direct the mobile plant operator to remove the dimension stone from the face for loading

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P23 inspect and make safe the area for subsequent operations

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Knowledge and understanding

Prepare the work area

You need to know and understand:

- K1 approved procedures and practices in the context of the operations, the work activity and the workplace environment including organisational; environmental; regulatory; emergency and operational.
- K2 responsibilities under the health and safety statutory requirements.
- K3 methods of defining, demarcating and clearing the work area
- K4 types of tools, equipment and machinery used with the operation and work activity.
- K5 procedures for reporting of problems.
- K6 methods of communication with and direction of mobile plant operators
- K7 procedures for the safe clearance and storage of overburden and waste

Split the dimension stone from the face

You need to know and understand:

- K8 how the geology of the rock and local conditions of the rock face effect the selection of stone for extraction.
- K9 what factors of the removal of the dimension stone impact on the placement of the drill holes
- K10 how the movement of the dimension stone in the face will be monitored to ensure safe extraction
- K11 checks carried out on machinery, equipment and tools before use
- K12 organisational and local procedures for use of machinery and tools in the splitting operation
- K13 defect recording/reporting methods and procedures
- K14 methods of communication within the work activity
- K15 methods to remove dimension stone from the face for loading
- K16 procedures for making the area safe for ongoing operations

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