PROSUM15
Supervise the blasting operation

Overview

This standard is designed for the candidate to demonstrate competence to organise and supervise all work involving the use of explosives. It covers the day-to-day use of explosives, and the activities of those involved in blast design, shotfiring, explosives storage and transportation.

Note: Safety and security are paramount to these operations. Procedures need to be followed habitually to ensure maximum safety for all within the quarry, and in the immediate surrounding are, reviewed, and improved to meet changing situations.

Candidates will require knowledge across a range of specialism's, which includes: blast calculation and design; ground vibration and air blast overpressure; shotfiring.

During this work the candidate must take account of the relevant operational requirements and safe working practices.

There are **three** Elements in this Standard:
1 Supervise the Preparation for the Blast
2 Supervise the Firing of the Blast
3 Confirm the Conclusion of the Blast

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Performance criteria

You must be able to:

Supervise the Preparation for the Blast

P1 blast specification(s) are authorised and approved according to approved procedures and practices
P2 changes to the blast specification are approved and authorised.
P3 effective communication is established and maintained with relevant person(s)
P4 arrangements are made for the delivery and receipt of sufficient, suitable materials to meet the blast specification.
P5 adequate security measures for on-site explosives are maintained and records completed
P6 explosives are issued to relevant person(s) in accordance to approved practices and procedures
P7 checks are carried out to ensure activities involving the use, transportation and storage of explosives or explosive substances are carried out by relevant person(s
P8 arrangements are made to ensure environmental controls are set up and monitored to meet local requirements
P9 blast sites are identified and established according to approved procedures and practices
P10 potential risks are identified and appropriate action taken to eliminate or minimise
P11 requirements for safety and security of the blast operations are clearly identified and communicated to all relevant person(s)
P12 problems and conditions referred by others are dealt with appropriately
P13 problems and conditions outside the responsibility of the candidate are referred to relevant person(s)
P14 work is carried out to approved procedures and practices and in compliance with statutory requirements

You must be able to:

Supervise the Firing of the Blast

P15 checks are established and conducted to confirm the blast site conforms to the blast specification.
P16 limits of the danger zone are confirmed and approved according to approved procedures and practices
P17 tools and equipment are approved as safe and suitable to meet the blast specification
P18 arrangements are made to ensure the removal of surplus explosives and the disposal of packaging
P19 position and form of the blast initiation site are confirmed and approved according to site operational procedures
P20 checks are carried out to confirm warning and security arrangements are

in place and operating according to approved procedures and practices

P21 procedures are implemented to confirm evacuation of the danger area, and that visitors and contractors are in designated areas

P22 authorisation to the shotfirer to blast at an agreed time is given when operating and environmental conditions are confirmed as suitable, according to approved procedures and practices

P23 problems and conditions referred by others are dealt with appropriately

P24 problems and conditions outside the responsibility of the candidate are referred to relevant person(s)

P25 work is carried out to approved procedures and practices and in compliance with statutory requirements

Confirm the Conclusion of the Blast

You must be able to:

P26 records are maintained and stored in accordance with operational and organisational rules and procedures

P27 post-blast inspection is carried out according to approved procedures and practices

P28 post-blast remedial work is approved according to operational procedures

P29 on completion of the blasting operation, approval is given for the removal of warning and security arrangements, and to signal that the area is returned to normal operational status, according to approved procedures and practices

P30 overpressure and vibration are monitored and recorded, and checked to ensure they conform to local requirements

P31 site-specific shotfiring rules and procedures are monitored and reviewed, and recommendations made

P32 problems and conditions referred by others are dealt with appropriately

P33 problems and conditions outside the responsibility of the candidate are referred to relevant person(s)

P34 work is carried out to approved procedures and practices and in compliance with statutory requirements

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Knowledge and understanding

Supervise the Preparation for the Blast

You need to know and understand:

K1 how to interpret the blast specification
K2 reasons for post blast slippage of ground and its effects
K3 effects of adverse environmental and site conditions
K4 causes of and dangers from flyrock
K5 public roads and rights of way
K6 the relevant persons, as appropriate to site, associated with the activity
K7 the appropriate environmental controls
K8 types of detonating devices and explosives used
K9 types of approved circuit testers for use in surface operations
K10 blast patterns
K11 types and uses of shotfiring tools and equipment
K12 determination of danger zones
K13 drilling methods and equipment
K14 methods of production and interpretation of survey information
K15 setting up, aligning and measuring drill holes
K16 recognition of relevant information from drill holes and drilling records
K17 recognition of natural joints, cavities and other geological features
K18 methods of testing initiation systems
K19 hazards associated with, and methods to minimize premature ignition

Supervise the Firing of the Blast

You need to know and understand:

K20 how to interpret the blast specification
K21 effects of adverse environmental and site conditions
K22 effects of adverse environmental and site conditions
K23 types of warning systems
K24 methods of testing initiation systems

Confirm the Conclusion of the Blast

You need to know and understand:

K25 the relevant persons, as appropriate to site, associated with the activity
K26 hazards associated with misfires and unexploded charges
K27 reasons for post blast slippage of ground and its effects
K28 dangerous effects of fumes created by blasting
K29 site examination after firing
K30 recognition of natural joints, cavities and other geological features

Supervise the Blasting Operation

You need to know and

K31 controlling, recording and analysis of ground vibration/air over pressure
K32 recording aspects of blast performance

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understand:	K33	responsibilities under the health and safety statutory requirements
	K34	site shotfiring rules
	K35	relevant legislation and standards
	K36	types and use of communication systems
	K37	approved procedures and practices in the context of the operations, the work activity and the workplace environment (organisational; environmental; regulatory; emergency; operational)
	K38	powers and duties of sentries
	K39	legislation in relation to blasting in the situation and context (e.g. quarry, mine, tunnel)
	K40	safe and secure storage of explosive substances
	K41	maintenance of explosive storage facilities
	K42	recording of explosives/explosive materials in storage and use
	K43	transportation methods for explosive substances
	K44	blasting specifications; their purpose content and interpretation
	K45	emergency procedures
	K46	external third party agencies regulations
	K47	practical requirements of hse and/or local authority licences
	K48	recognition, handling and safe disposal of deteriorated, waste, recovered and surplus explosive materials
	K49	the duties and responsibilities of the explosive supervisor
	K50	types and use of ground vibration and air overpressure monitoring equipment
	K51	site security in relation to blasting operations
	K52	prohibited persons
	K53	relevant literature

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