MPQBL11

# Supervise the blasting operation

## Overview

**What is this standard about?**

This standard specifies the skills, knowledge and understanding required 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.

Safety and security are paramount to these operations. Procedures need to be followed habitually to ensure maximum safety for all within the quarry or blasting area, and in the immediate surroundings, are reviewed, and improved to meet changing situations. This will require knowledge across a range of specialisms, which includes: blast calculation and design; ground vibration and air blast overpressure; shotfiring.

**Who is this standard for?**

This standard applies to any person in charge of work with explosives.

## Performance criteria

You must be able to:

1. confirm to **relevant persons** that you are the person in charge of the blasting operation
2. organise, co-ordinate and supervise all work involving **explosive materials**
3. ensure that all rules and procedures are current, appropriate for the work activity and **blasting environment,** and meet statutory requirements and environmental conditions
4. check that blasting personnel have a correct and current appointment or authorisation for their job role
5. ensure blasting personnel are trained and competent to undertake their assigned job role
6. ensure the security, storage, transportation and use of explosives on site conforms with regulations and work instructions
7. ensure blast specifications meeting organisational and statutory requirements are prepared and authorised
8. check that all blasting related equipment provided is sufficient, in good repair, correct and safe for the work activity
9. check that site conditions are in line with the blast specification
10. audit blast performance
11. check that inspections for misfires have taken place
12. maintain records of appointments, blast specifications, explosives usage and testing of equipment
13. carry out work activities according to the **approved policies, procedures and practices**

## Knowledge and understanding

You need to know and understand:

1. the **approved policies, procedures and practices** in the context of the work activity
2. legislative requirements in the **blasting environment**
3. your responsibilities under the Health and Safety Statutory Requirements, and the limits of your responsibilities
4. the roles and responsibilities of the **relevant persons**, as appropriate to site, and associated with the work activity
5. the policies, rules, procedures and records required by statute in relation to blasting operations
6. site shotfiring rules
7. statutory requirements and practical methods for the safe and secure storage of **explosive materials**
8. the training and competence requirements for those involved in the blasting process, and how these can be achieved
9. appointments and authorisation of blasting operations personnel
10. site security in relation to blasting operations
11. the powers and duties of sentries
12. the methods and use of communication systems in the working environment
13. types of warning systems
14. site and work activity emergency procedures
15. drilling methods and equipment
16. setting up, aligning, checking and measuring drill holes
17. the information available from drill holes and drilling records
18. how to identify natural joints, cavities and other geological features
19. the purpose and methods of profiling faces
20. the methods of production and interpretation of survey information
21. the importance, purpose and methods of blast calculation and design
22. blasting specifications; their purpose content and interpretation
23. blast patterns
24. the assessment and determination of danger zones
25. the considerations to be given to public transport routes and rights of way
26. the standards for maintenance of explosive storage facilities
27. the recording of **explosive materials** in storage and use
28. transportation methods for **explosive materials**
29. the types of initiating and detonating devices and **explosive materials** used for the blasting operations
30. types, uses and maintenance of shotfiring tools and equipment

31. the methods of checking or testing initiation systems
32. methods of protecting the blast site
33. the hazards and risks associated with, and methods to avoid premature or sympathetic initiation
34. how and why to clear overfilled or incorrectly filled blast holes
35. the purpose and methods of stemming
36. the effects of adverse environmental and site conditions on blasting operations
37. the purpose and methods of post blast inspections
38. the identification and causes of post blast falls of rock and slippage of ground and its effects
39. the causes of, effects, and methods of the controlling, recording and analysing ground vibration and air over pressure
40. the hazards and risks associated with misfires and unexploded charges
41. the causes, identification, dangers, rectification and investigation of misfires
42. the hazards and risks arising from blast fumes, and how to control them
43. the causes of and dangers from flyrock, and how to eliminate it
44. the environmental aspects and impacts associated with blasting and how to control them
45. the disposal of waste materials from the blasting operation
46. the recognition, handling and safe disposal of deteriorated, waste, recovered and surplus explosive materials
47. the auditing and recording of blast performance
48. the importance of developing, monitoring, reviewing and amending policies, procedures and rules relating to blasting operations
49. the personal protective equipment required in the **blasting environment**
50. how to ensure the safety of all people and property that could be affected by the blasting activity
51. the problems and conditions that could occur in relation to **explosive materials** and blasting operations in the **blasting environment**, and how to deal with them
52. the problems and conditions that require referral to higher or external authority, how and when this should be done
53. the practical requirements of third party licences or conditions as appropriate to the site
54. sources of information and guidance in relation to blasting operations

## Scope/range

1. **explosive materials**: explosive articles or substances, and any blasting intermediaries, or as defined in current legislation, as appropriate to the work activity
2. **approved policies, procedures and practices**: legislative, organisational, operational, accident or emergency, health and safety, first aid, and environmental as appropriate to the work site and work activity
3. **blasting environment**: in relation to at least one blasting environment: mining, quarrying, demolition, tunnelling, civil engineering, under water
4. **relevant persons**: supervision, work colleagues, maintenance engineers, designated persons and/or those affected by the work activity, as appropriate to the work activity

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| **Developed by** | MPQC |
| **Version Number** | 1 |
| **Date Approved** | December 2015 |
| **Indicative Review Date** | January 2021 |
| **Validity** | Current |
| **Status** | Original |
| **Originating Organisation** | MPQC |
| **Original URN** | MPQBL11 |
| **Relevant Occupations** | Explosives supervisor |
| **Suite** | Blasting Operations |
| **Keywords** | blasting; health; safety; explosive; misfires; blast; design; supervision; shotfiring |