

Blasting

This is a guide on how to safely complete blasting work. It explains the precautions that should be in place for people working with explosives.

Definition

Blasting is the use of explosives to quarry, cut into, excavate the foundations of, or widen cuttings in rock. It is widely used in quarrying natural stone.

Who can carry out blasting?

- Blasting can be carried out only by authorised people - these are called 'Blasting Mates'.
- Blasting Mates are properly trained specialists. Any person undertaking blasting needs to have six months of blasting training experience.
- Training time can be reduced to two months if the candidate has received a diploma or certificate in scientific mining training after a course of at least two years at an educational institution.

Precautions for blasting

- Experienced watchmen with red flags should stop traffic and warn people where blasting is conducted near roads, buildings or populated areas.
- Watchmen should be informed of the start and end times of the blasting.
- Nearby villages should be warned and traffic on roads stopped at a safe distance if there is a risk that explosives have a missile effect.
- Warning sirens or other loud repeated noises should be used to warn of imminent blasting.
- Personnel not conducting the blasting should move at least 150 feet away from the blasting site, and records should be taken to account for them.
- To prevent damage to nearby buildings or structures, shallow bore-holes should be drilled and light charge used, or the angle of bores should be varied.

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! Key message: Only trained and authorised people should carry out blasting.

The use of explosives

- A licence is required to possess explosives, according to national law.
- Senior engineers, such as the Chief Engineer, are responsible for ensuring that the use and storage of explosives complies with the law.
- The Inspector of Explosives and the District Magistrate have powers to inspect all magazines.

Explosive storage

- Explosives must be stored in a separate room or building called a 'magazine'.
- The chief controller must approve the design.
- Guards should monitor the magazine to prevent unauthorised access.
- The magazine should be locked at all times apart from during authorised access.
- The key to the magazine should be held by the licensee or authorised agent.
- The name and address of the key holder should be lodged with the licensing authority and the Controller of Explosives.

Access control

- To prevent unauthorised entry, guards should be posted at all access points leading to the blast area.
- Guards should physically remain at their duty stations until an "all-clear" signal is sounded.

Blasting

- Proper training in procedures for blasting must be conducted, ensuring that workers respond to blasting sirens, move to safe locations, and recognise the 'all-clear' siren.
- All equipment in the area should be removed from the blast radius or protected from damage caused by flying rocks.
- No one should return to the blast area until the 'all-clear' signal is given.
- The location and timing of scheduled blasts should be communicated daily.

Warnings

Audible signals, such as sirens, whistles or horns mounted on vehicles, are used in many operations to caution employees, visitors and neighbours about blasting events.



Disposal control

- All explosives should be disposed of strictly in accordance with the instructions of the manufacturers and the appropriate authority.
- Explosives, caps, box liners and packaging materials should be safely disposed of.
- Paper and fibrous materials employed in packing should not be put to any subsequent use - these materials should be destroyed by burning in the presence of a responsible person.

Blasting checklist

<p>Blasting licence</p> <input type="checkbox"/> ✓/✗	<p>Warn public areas</p> <input type="checkbox"/> ✓/✗	<p>Clear blasting sites of public</p> <input type="checkbox"/> ✓/✗
<p>Warn workers of blasting</p> <input type="checkbox"/> ✓/✗	<p>Avoid damage to structures</p> <input type="checkbox"/> ✓/✗	<p>Check no one is in blasting areas</p> <input type="checkbox"/> ✓/✗
<p>Guard the blasting areas</p> <input type="checkbox"/> ✓/✗	<p>Lock explosives in magazine</p> <input type="checkbox"/> ✓/✗	<p>Dispose of all explosives safely</p> <input type="checkbox"/> ✓/✗