

Danger at the quarry face

5 ways plant operators can limit the risk and stay safe



1. Rock fall

The instability of the quarry face presents a major hazard to mobile plant operators. Large sized material can hang up in the rock face and its unpredictable nature, combined with the slow manoeuvrability of mobile plant, provides a real danger should it fall onto the machines or the quarry floor below.

Limit risk by:

“Dressing the face” is a technique by which any loosened or over hanging material in the rock face is removed, and is usually carried out using an excavator. Ensure work is conducted from a high enough platform to reach the top of the face and extract any potentially unstable material. Rock traps can be used to allow rock to fall into an area of little danger but take care to ensure they have the capacity to hold all material pulled down.



2. Overhang

Overhang is the commonly used term for material that is held in position only by surrounding materials/rocks. Overhanging material may appear secure during the excavation process but it is held in place only by a ‘keystone’ which, once removed, will cause the overhanging material to fall and may also bring other material down with it.

Limit risk by:

Avoid creating overhangs or vertical faces, wherever possible. If such excavations are unavoidable, a geotechnical specialist should be consulted for guidance. Again, correctly dress the face to limit the risk. If using a wheeled loader, work across the rock face - not solely in one area - preventing walls being produced and enabling material to hold up. If using an excavator, manoeuvre onto the top of the blast and excavate from top to bottom rather than from the bottom up. This method prevents overhang from being created and the face can be dressed as the level of excavation lowers.

Office and training centre locations:

Chesterfield - 01246 555222 | Bromsgrove - 01527 570470 | Livingston - 01506 464664

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3 The quarry floor

Large stones and debris on the quarry floor can cause damage to equipment being used around the face area. Travelling over uneven ground or potholes can be very dangerous, especially if travelling with a load as violent movements may cause this to become unstable or even displaced.

Limit risk by:

Keep the quarry floor around excavation level free from large stones and debris. Sweep loose material into the face whilst extracting and take extra care when loading vehicles/hoppers to limit overflow. To avoid trailing debris across the quarry floor during machine transit, flick the bucket into the quarry face to remove any loose material before moving the equipment.

4 Other vehicles/pedestrians

When operating the kind of large mobile plant equipment used at the quarry face, good observation can be hard to maintain. Smaller vehicles such as Land Rovers, used for getting around the quarry, can be difficult to spot from high in a machine cab. Pedestrians - particularly maintenance operatives and contractors who aren't used to working at the quarry face - can also present major risks.

Limit risk by:

Make everyone on site, including contractors and maintenance personnel, familiar with the areas in which they are permitted to operate and which are restricted. They should also be briefed on the dangers of working in close proximity to mobile plant. MPQC/SPA have designed a quarry safety passport course specifically for contractors working in extractives and mineral processing, covering industry specific hazards and safety awareness. For plant operators, all round vision is key; ensure the vehicle has adequate cameras/mirrors/radar/detection equipment and that they are in good working condition. Be careful not to restrict your view by positioning cameras, weigh load indicators etc in front of cab windows.

5 Untrained operators

Untrained operators, however experienced, may not be aware of the best way to work with their machine, material or environment, putting themselves and their colleagues in danger.

Limit risk by:

Providing comprehensive training is the best way to ensure that plant operators know how to work safely. Not only will trained operators know how to use their machine safely and efficiently, they will know how to carry out a thorough pre-use inspection, preventing the use of unsafe and potentially dangerous equipment. Additional training is necessary should the operator be required to take on more complex tasks such as vehicle loading. Working at the quarry face is a specialist job requiring specialist training, including geotechnical factors and face inspecting, as well as operator training on the plant equipment itself.



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