



**Quarries National Joint Advisory Committee (QNJAC)**

## **General Series**

***Information Sheet GS4***

***March 2012***

***Guidance on Danger Areas in Quarries (Quarries Regulations 1999, Regulation 22)***

*This Information Sheet has been developed by the Quarries National Joint Advisory Committee (QNJAC) to help quarry operators, contractors, managers and others learn how to make health and safety improvements in the quarry industry. This guidance represents good practice, which may go further than the minimum you need to do to comply with the law.*

## **Guidance on danger areas in quarries (Regulation 22)**

*This information sheet gives guidance to assist quarry operators in providing equipment or barriers specifically to comply with Regulation 22 of the Quarries Regulations 1999 (relating to Danger Areas within the quarry). It should be read in conjunction with the Approved code of Practice "Health and Safety at Quarries" (L118) which can be downloaded free of charge from HSE's website (<http://books.hse.gov.uk/hse/public/home.jsf>)*

*This information sheet is not intended to deal with the danger zone created during shotfiring operations and should be read in conjunction with the Regulation 16 information sheet*

### **Introduction**

1. The regulations require the quarry operator to ensure that any danger area in the quarry is clearly marked and that equipment or barriers designed to prevent inadvertent entry by unauthorised persons are in place. Where a person at work is authorised to enter a danger area, appropriate measures to protect health and safety must be taken.

### **Danger Area**

2. Regulation 22(b) states that equipment or barriers are to be used to prevent inadvertent entry to places where there is a risk of a person falling a distance likely to cause personal injury; a risk of a person being struck by a falling object likely to cause personal injury; or a significant risk to the health and safety of any person. It is important to note that significant health risks are included.

3. The whole quarry is a potential danger area, but to treat it as such would devalue the concept of a danger area within the quarry. In general, a danger area is a place where there are **specific hazards** that people need to be made aware of and protected against.

4. Quarries may well have settling lagoons associated with them. These are likely to be hazardous because quick sands may be present and exposed areas of material may lead people to think that they are safe to walk on. Any edges leading directly into the lagoon water are likely to be steep and the water relatively deep. In this case the body of water should be securely fenced off and clearly signed.

5. Other examples of danger areas include:

- An area of potential instability on the quarry face identified during a routine inspection.
- The blast site (up until the 'all clear' is sounded)
- A rock pile where unfired explosive has been identified.

- The working area around a crane carrying out lifting operations as part of plant maintenance.
- Areas where high noise and/or dust levels might exist.

The above list is not intended to be exhaustive.

## **Barriers**

6. The legislation requires the quarry operator to ensure that danger areas are clearly marked and that measures are taken to prevent unauthorised persons from inadvertently entering the area. The ACOP recognises that no barrier can prevent access by a determined person and that is not the intention.

7. In order to deal with a hazard, appropriate people may need to be authorised to work, suitably protected by appropriate safeguards, within the designated danger area.

8. The choice of a suitable barrier should be subject to an assessment of the risks. Matters to consider might include:

- The nature of the hazard
- The area of the quarry where the hazard exists (e.g. in a remote part or close to processing plant or offices)
- The number of people affected.
- The amount of time that the hazard might exist before it can be dealt with.

9. For example:

- To demarcate an area where misfired explosives had been found, marker cones connected with hazard tape could be used along with signs in appropriate places, which might be worded, “DANGER – MISFIRED EXPLOSIVES, authorised persons only past this point.” Additionally, consideration needs to be given to the situation where the misfire cannot be dealt with in a single shift, so some form of security would be necessary (this is also a requirement under the explosives section of QR).
- A similar approach could be used for areas of potential instability in the working face or a legacy face of the quarry to mark out the area that might be affected if failure should occur.
- A higher standard of barrier or other form of action is likely to be appropriate if a potential instability is identified in any face above areas where people work, such as a coating plant or maintenance facility. This is because the risk is not remote, more people are affected and it may be present for longer. It may be necessary to close the plant until the defect can be rectified.
- For areas where the risk is a fall from height, various types of barrier might be appropriate. The highest reasonably practicable standard should be used at all times. For example, it would not be reasonably practicable to provide permanent fixed handrails to every quarry face, but earth bunds or tensioned ropes or straps to prevent inadvertent access may well be appropriate.

- Where the danger area is a settling lagoon, it might be appropriate to securely fence off the whole area and provide lifebelts. The danger is present at all times so the standard of protection should be proportionate and take into account the relevant risks.
- Where part of the quarry is a danger area due, for example, to lack of edge protection or access to standing water, adequate arrangements such as posting notices and providing suitable barriers should be made to prevent inadvertent access.

Where a new danger area has been identified, consideration should be given to notifying verbally those who may be affected as an additional precaution.



Typical fencing around a lagoon



A toe bund below a rock face: NB: Land Rover fitted with 'buggy-whip'