





## Guidance Document - Safety In Quarry Drilling Operations

The following details highlight some of the hazards and risks that might exist whilst carrying out drilling operations in quarries. They are by no means exhaustive and will vary depending on your own particular business. As a starting point, use the blank sheet provided in the pack and carry out your own simple risk assessment.

<i>Main Types Of Risk</i>	<i>Managing The Risk</i>
<p><b>Face</b></p> <p>Risks around the faces occur as a result of the potential for falls due to instability of the face, loose material at the edge of the face, machinery location or operator error.</p> 	<ul style="list-style-type: none"> <li>▶ The driller should be suitably trained and experienced.</li> <li>▶ Prior to drilling the site should be prepared by the quarry management - however a visual inspection of the edge should be undertaken by the drilling operator to ensure the stability of the site.</li> <li>▶ Loose materials should be stripped back from the edge.</li> <li>▶ Edge protection should be erected around the drilling site to prevent the operator from falling over the edge. Alternative suitable methods to prevent falls may also be employed.</li> <li>▶ Site preparation should ensure that the working surface is free from tripping hazards.</li> <li>▶ During the drilling the operator should carry out frequent inspections to determine any hazards that may develop e.g. development of ground fractures due to vibration of the plant.</li> <li>▶ In conditions of poor visibility suitable measures to improve visibility should be employed e.g. use of artificial lights.</li> </ul>
<p><b>Machinery</b></p> <p>Most accidents on machinery occur as a result of people becoming trapped or entangled in the machinery, falling from the machine, or becoming crushed.</p> 	<ul style="list-style-type: none"> <li>▶ A visual inspection of the drilling rig should be undertaken to ensure it is fit for its purpose and poses no hazard.</li> <li>▶ All hazardous areas should be identified and adequately guarded.</li> <li>▶ Always ensure that all the guards supplied by the manufacturer are fitted and maintained properly.</li> <li>▶ Keep hands and clothing clear of rotating drill stems and other moving parts. Do not wear loose clothing.</li> <li>▶ A competent person should carry out regular maintenance. A fault reporting system should be in place.</li> <li>▶ Machinery should be sited in accordance with the findings of the operator's face inspection.</li> <li>▶ Suitable arrangements must be made when working at height, for example when working on the mast it is advisable to wear a safety harness.</li> <li>▶ Where a working platform is provided ensure it is as clean as possible and free from tripping hazards.</li> </ul>



<p><b>Compressed Air</b></p> <p>Risk of serious or fatal injury may arise as a result of failure of the high pressure hosing or its associated fittings.</p>	<ul style="list-style-type: none"> <li>▶ Prior to the commencement of drilling operations the operator should visually inspect all airlines, airline fittings and whiplash straps.</li> <li>▶ Where appropriate safety whiplash straps should be fitted.</li> <li>▶ Care should be taken when moving between borehole sites to avoid trailing and damaging airlines.</li> <li>▶ A competent person should inspect air receiver tanks at intervals not exceeding 14 months.</li> </ul>
<p><b>Old Misfires</b></p> <p>Risk of serious or fatal injury as a result of an explosion caused by drilling into an old misfire.</p>	<ul style="list-style-type: none"> <li>▶ The driller must check for the presence of old sockets or misfired material and inform manager of findings.</li> <li>▶ Quarry management should check blasting records and inform driller of any potential problems.</li> </ul>
<p><b>Manual Handling</b></p> <p>There is a risk of back injury and muscular strains from lifting and moving heavy or bulky items such as drill tubes and Down The Hole Hammers (DTHH).</p>	<ul style="list-style-type: none"> <li>▶ Assess all of the manual handling operations that you will perform.</li> <li>▶ Train staff in safe lifting techniques.</li> <li>▶ Where possible use plant to assist lifting operations e.g. move the drilling rig to the DTHH.</li> <li>▶ Use teamwork where appropriate.</li> </ul>
<p><b>Noise</b></p> <p>The compressor and the drilling operations may give rise to potentially hazardous levels of noise which can cause noise induced deafness.</p>	<ul style="list-style-type: none"> <li>▶ If when people speaking normally have difficulty being heard clearly by someone who is about 2m away, then you should arrange for a noise assessment to be carried out.</li> <li>▶ Provide, maintain and ensure the wearing of suitable hearing protection.</li> </ul>
<p><b>Dust</b></p> <p>Considerable amounts of dust are discharged from the bore hole during the drilling operation and depending on the composition of the rock have potential to cause respiratory problems e.g. silicosis due to exposure to silica dust.</p>	<ul style="list-style-type: none"> <li>▶ Drilling rigs should be fitted with a dust collar to prevent any dust produced from becoming airborne.</li> <li>▶ Where measures taken to control airborne dust are insufficient, then suitable respiratory equipment should be provided and worn.</li> <li>▶ Other protective equipment, such as eye protection, overalls and gloves should be utilised.</li> </ul>

**Other Matters:**

Adequate Personal Protective Equipment (e.g. hard hats, high visibility vest and eye protection) should be worn and kept maintained.

Provision should be made for lone working (e.g. checking in times or use of mobile phones).

Drillers should be aware of the safety policy and procedures of the quarry they are working in and comply accordingly.

Operators should be provided with first aid kits, which should include an eye wash bottle.

**For further information:**

BS5304 Safety of Machinery B.S.I ISBN 0580 16344X

Control of Noise In Quarries HS(G) 109 ISBN 0-7176-0648-1

Control of Respirable Crystalline Silica In Quarries HS(G) 73 ISBN 0-11-885680-4

Manual Handling Guidance on Regulations HSA68 ISBN 0-337-11193-6

*A free video entitled 'Risk Assessment for a Safer Quarry' is also available from the HSENI*

*For further information contact:*

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