

# Defining the Danger Zone for Blasting.

Guidance on what to consider when determining the danger zone for quarry blasting

## Target Audience

*Shotfirers, Explosives Supervisors and **Quarry Operators**.*

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*This guidance represents good practice which may go further than the minimum you need to do to comply with the law.*

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# Defining the danger zone for blasting

## 1. Introduction

- All blasting operations must have a declared danger zone.
- The rules for **shotfiring operations** should include a procedure for the **determination** of the danger zone
- The **extent of the** danger zone **may** be shown on a suitable plan **and is the recommended means**, but must be included in the Blast Specification.
- **Areas outside the quarry boundary may need to be included in the danger zone**



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## 1. Introduction

- The danger zone is an area in which there must be no personnel during the blast.
- The inside of a Shotfiring Shelter or a Safety Refuge are not considered to be part of the danger zone.



Photo courtesy of Aggregate Industries

# Defining the danger zone for blasting

## 1. Introduction

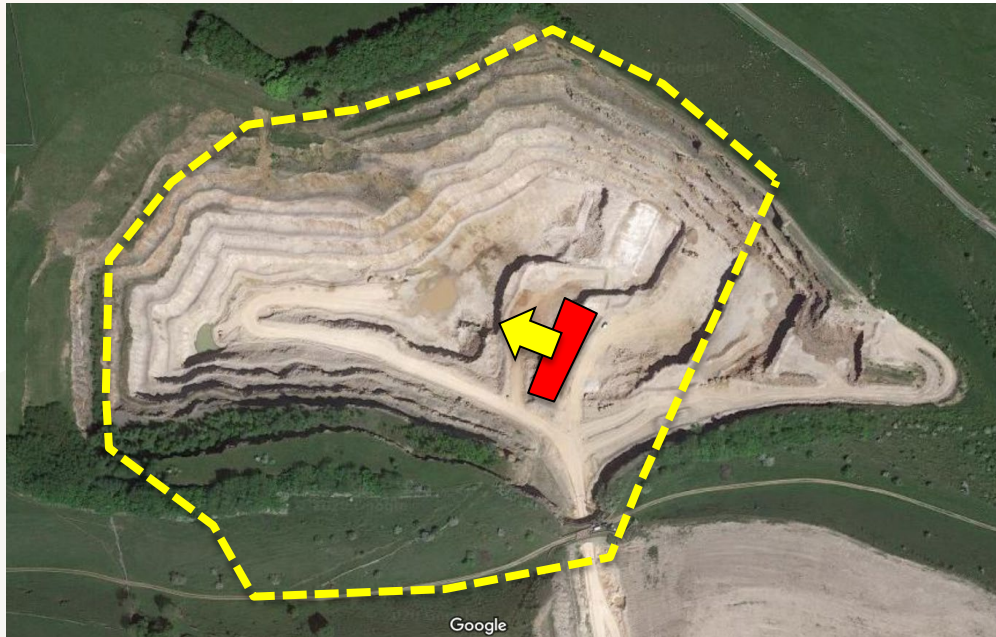
- Some quarries may also have provision for a Safe Refuge within the danger zone where it is safe for the quarry personnel and other visitors to shelter during the blasting process.
  - It is important that the establishment of a Safe Refuge is the subject of a detailed Risk Assessment and that the structure employed is of sufficient strength to prevent the ingress of flyrock.
  - Equally important is that the operation of such a refuge is covered by the shotfiring rules especially
    - Appointment of a sentry to control the refuge
    - Communication between the refuge sentry and the shotfirer



# Defining the danger zone for blasting

## 2. Basics

- The danger zone needs to be as large as necessary
  - In the example below the danger zone extends outside of the quarry boundary and includes access land and a public footpath which would need to be controlled



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## 2. Basics

- The danger zone needs to be controllable
  - Sentries must be able to see / control all parts of the danger zone that they are responsible for.
  - For more information on sentry duties see **TBT 07 Controlling The Danger Zone and the Duties of Sentries**



# Defining the danger zone for blasting

## 3. Factors to consider

- **Ask yourself**
  - Has the quarry had any issues in the past ?
  - Have there been any issues loading the blast holes ?
  - Are you satisfied with the size of the danger zone ?
- **The QUARRY Operator, Explosives Supervisor and Shotfirer should agree on the determined danger zone and sentry positions.**
- The danger zone will need to be carefully assessed especially when there have been changes in normal blasting operations or different areas of the quarry being worked.



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## 4. Public areas

- The location of roads, footpaths and the quarry boundary should not determine the limit of the danger zone
- If the determined danger zone extends outside of the quarry boundary then consideration needs to be given on how this area can be controlled
  - Public footpaths and road will need sentries where they enter and leave the danger zone.
  - It is likely a sentry or other person will need to travel a footpath or road to make sure nobody is present before firing
  - Special consideration may need to be given to any structures within the danger zone
    - For example : buildings, tunnels, etc.





# Defining the danger zone for blasting

## 5. Key Points

- The danger zone should be as big as necessary
- The danger zone needs to be controllable
- If in doubt then make the danger zone **larger**
- **The danger zone should not be one of convenience**

