



Inspections of Rock Faces

Guidance on what to consider when undertaking face inspections

**Quarries
National
Joint
Advisory
Committee**

Working towards a safe and healthy quarrying industry

**Employers
Employees
Health and Safety Executive**

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The information is current at Oct 2012. **Please acknowledge 'QNJAC' as the source**



Face Inspections

1. Legislation



Quarries Regulations 1999

Regulation 12 (1) (a)

The operator shall prepare and keep up to date a suitable **written** scheme for the systematic inspection, maintenance and where appropriate, testing of all parts of the quarry.

Regulation 12 (2)

The said written scheme shall specify that faces above every place of work at the quarry and every road used by persons at work at the quarry for the purpose of their work or of getting to or from their place of work are inspected for loose ground or loose rocks before any work at the quarry commences.



Face Inspections

1. Legislation



ACOP

The scheme needs to include information on the frequency and level of detail of inspection and the experience and any qualifications required by the people involved. It should, where necessary, include practical advice as to what defects are significant and on the action to be taken if defects are found, particularly in cases of imminent risk.



Face Inspections

1. Legislation



ACOP

The said written scheme shall specify that faces above: every place of work at the quarry and every road used by persons at work at the quarry for the purpose of their work or getting to or from their place of work, are inspected for loose ground or loose rocks before any work at the quarry commences or recommences.

Faces above working places or roads must be inspected before work starts to ensure that loose ground or rocks do not create significant risks. In other cases where the rate of deterioration or the risk is high, inspection will also be required at least once a shift. These inspections may identify a need for maintenance work such as scaling, or influence its frequency.

Why undertake Face Inspections



To determine;

- whether it is safe to work below and above a face
- if there is any loose material on the face
- if there is potential for instability
- whether maintenance is required to the face prior to commencing work
- When further advice is required e.g. from the Geotechnical Specialist



Examples of Face Collapse Incidents



Large-Scale Instability





Face Scale Instability – Working Below Face





Face Scale
Instability –
Working Below
Face



Face Scale Instability – Working Below Face





Face Scale Instability – Working Above Face





Face Scale Instability – Working Above Face





Face Scale Instability – Working Above Face





Face Scale Instability – Working Above Face

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Worker rescued from rock slide at Mountsorrel

25 November, 2010 - 12:32

RESCUE services had to be called to Lafarge Aggregates' Mountsorrel Quarry, in Leicestershire, last month following an incident in which a quarry worker became buried up to his waist in rocks after sliding down a quarry face.

Lafarge confirmed that, during a routine inspection of the quarry face prior to it being set up for drilling, two of their employees were involved in a rock slide that resulted in one worker sliding down the face with the stone.

After the slide, the man was quickly cleared of all debris and taken by air ambulance to hospital where a full body scan later revealed he had suffered no broken bones or internal injuries. He was released from hospital and back at home with his family later the same evening.

It is understood the second worker escaped with minimal injuries.

A spokesperson for Lafarge Aggregates said: 'This incident is being taken very seriously and an investigation is being conducted, in conjunction with Health and Safety Executive, in order to try to understand the causes of the slide and the potential corresponding actions to prevent such an accident from happening again.'

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Forms of Instability

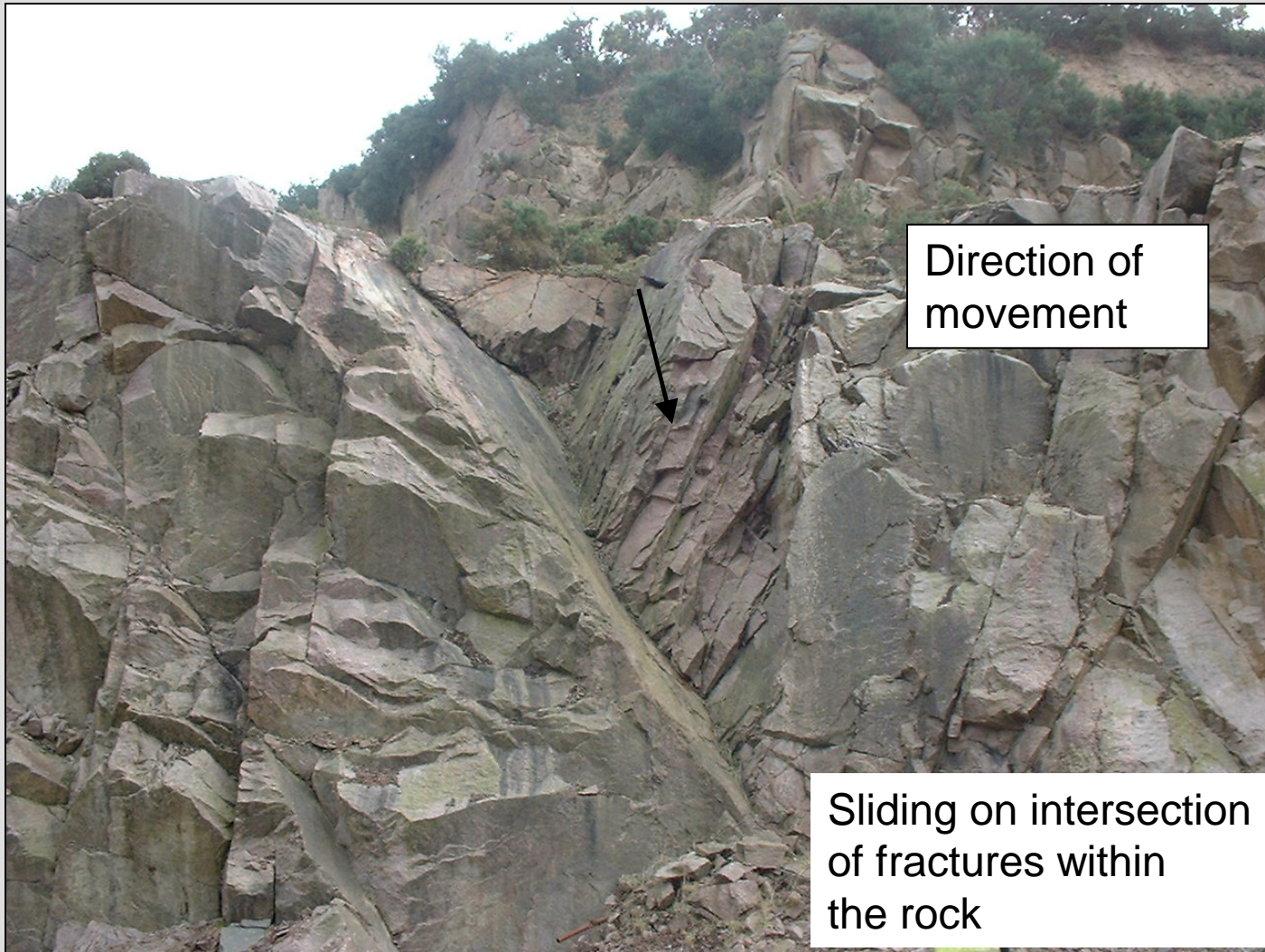
Plane Failure



Direction of movement

Sliding on a fracture within the rock

Wedge Failure



Toppling Failure



Where fractures lean out of the face



Rockfall



General falls of rock from face

30.11.2001



Inspection of Rock Faces

Crests – Cracking



Must determine whether it is safe to work above and below face



Crests – Cracking



Must determine whether maintenance of the face is required prior to commencing work

Crests – Cracking



What is cause of instability, is geotechnical advice required?





Faces/Slopes – Loose Material

When will rocks fall?



Faces/Slopes – Loose Material
When will rocks fall?



Are there loose rocks on the face,
is maintenance required?





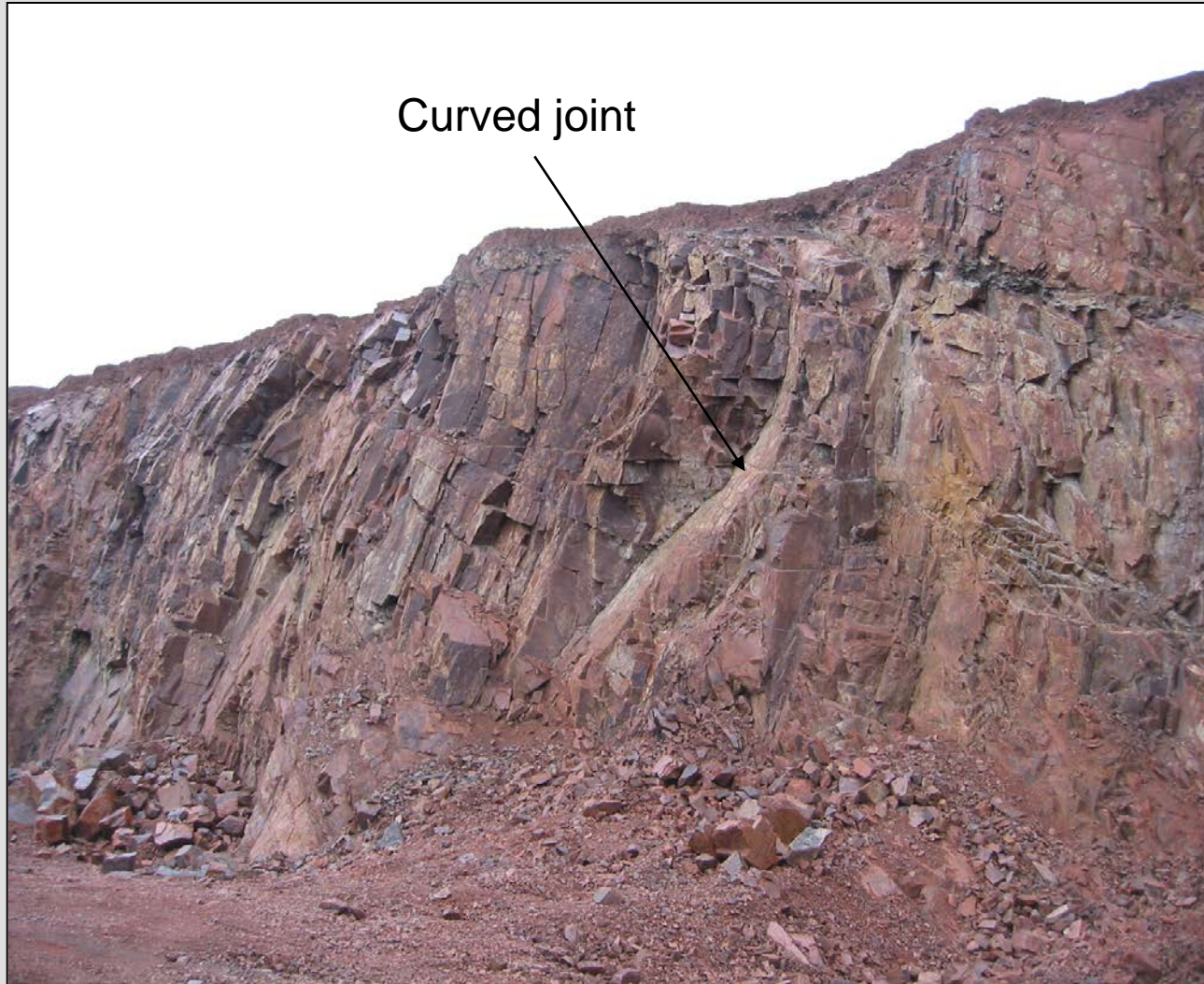
Faces/Slopes – Loose Material

When will rocks fall?





Change in geological conditions?





Change in geological conditions?



Fault crossing the faces





Change in geological conditions?
Any weak layers that may cause instability



Very soft, very thin
clay layer, but very
significant in terms
of stability



Change in geological conditions?
Water seepages





Change in geological conditions?
Water seepages – Freeze / Thaw





Face Inspections Conclusions



To determine;

- whether it is safe to work below and above a face
- if there is any loose material on the face
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