

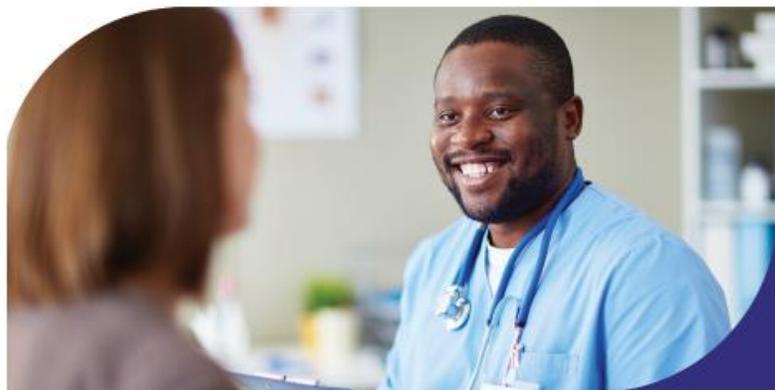


# HSA

An tÚdarás Sláinte agus Sábháilteachta  
Health and Safety Authority

## Machinery Operation, Guarding & Maintenance

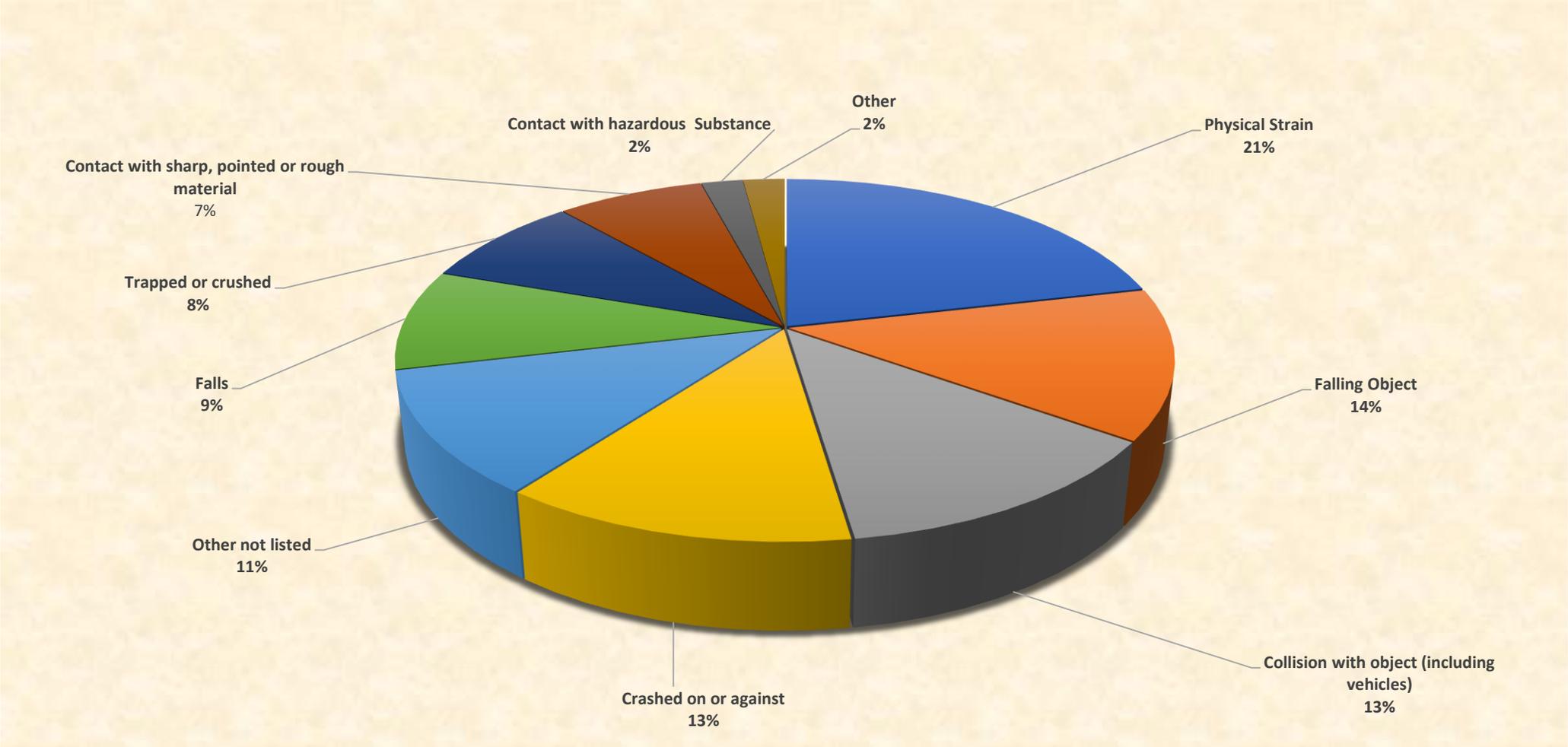
Greg Murphy



# Statistics 2011-2010



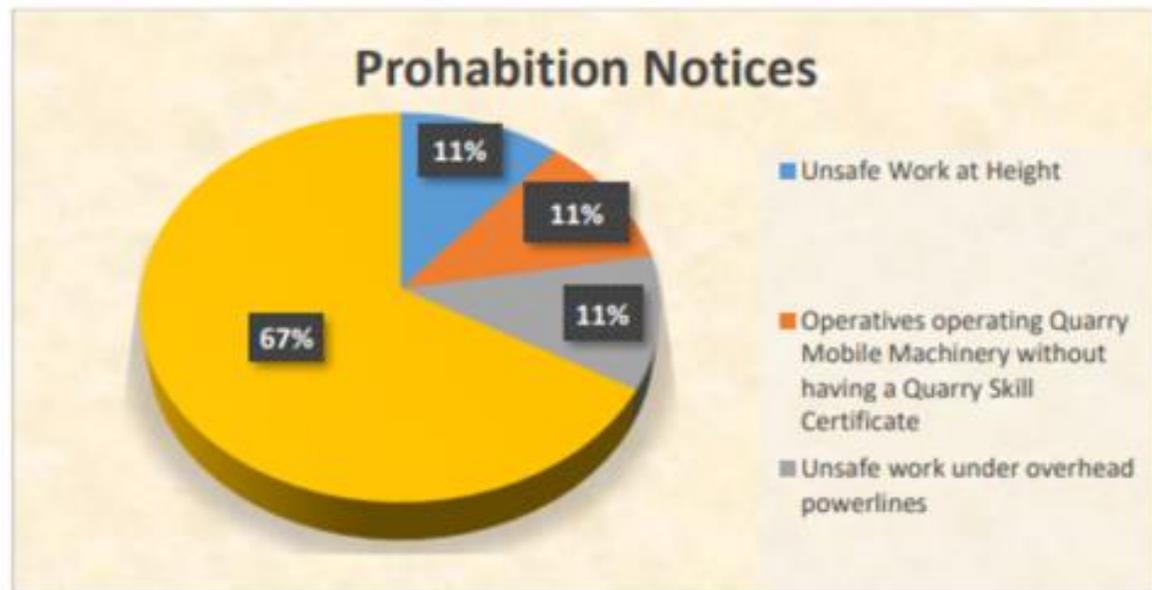
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# PN Notices Issued in 2021

## NACE B Code Prohibition Notices Quarries Sand and Gravel

No. of Notices	Reason for Issuing Notice
1	Unsafe Work at Height
1	Operatives operating Quarry Mobile Machinery without having a Quarry Skill Certificate
1	Unsafe work under overhead powerlines
6	Operating machinery without guarding in place
<b>Total 9</b>	



## NACE C Code Prohibition Notice Manufacturing

No. of Notices	Reason for Issuing Notice
7	Operating machinery without guarding in place
<b>Total 7</b>	

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# Risk Management Questions

# Machinery Risk

1. Is there a specific risk assessment for each machine and or machinery assembly hazard?
2. Is there a planned preventative maintenance program in place?
3. Are maintenance programs documented and work carried out recorded?

## Hazard Identification & Risk Assessment

1. Identification of hazards.
2. Evaluate the risk
3. Document & implement appropriate controls.
4. Audit procedures regularly to ensure compliance.



## Controls Measures (Non exhaustive list)

1. Startup alarms
2. Guarding - while in operation
3. E-stops, pull cords, light curtains etc.
4. Authorised persons to carry out tasks specific.
5. Training of operatives for specific tasks.
6. Isolation procedures for planned and unplanned maintenance task. ( Lock out tag out, captive keys systems, interlocks)
7. Permits to Work. (Hot work, confined spaces, work at height etc. ).
8. Statutory examinations of work equipment where required.

## Maintenance Operations

1. You must have a Risk Assessment in place
2. Carried out works in accordance with manufactures instruction.
3. Reduce Risks by having scheduled structured maintenance programs.
4. Planned preventative maintenance V Reactive – significant risks.
5. Keep Records



# Maintenance Activities

## Maintenance activities Include

- Inspection
- Testing
- Measurement
- Replacement
- Adjustment
- Repair
- Upkeep
- Fault Detection
- Replacement of Parts
- Servicing
- Lubrication
- Cleaning

*Maintenance is a generic term for variety of tasks in very different types of sectors and all kinds of working environments.*



Regular maintenance is essential to keep equipment, machines reliable and the work environment safe .

Lack of maintenance or inadequate maintenance can lead to dangerous situations, accidents and health problems.



Unplanned stops/breakdowns can pose a significant risk if not managed safely.

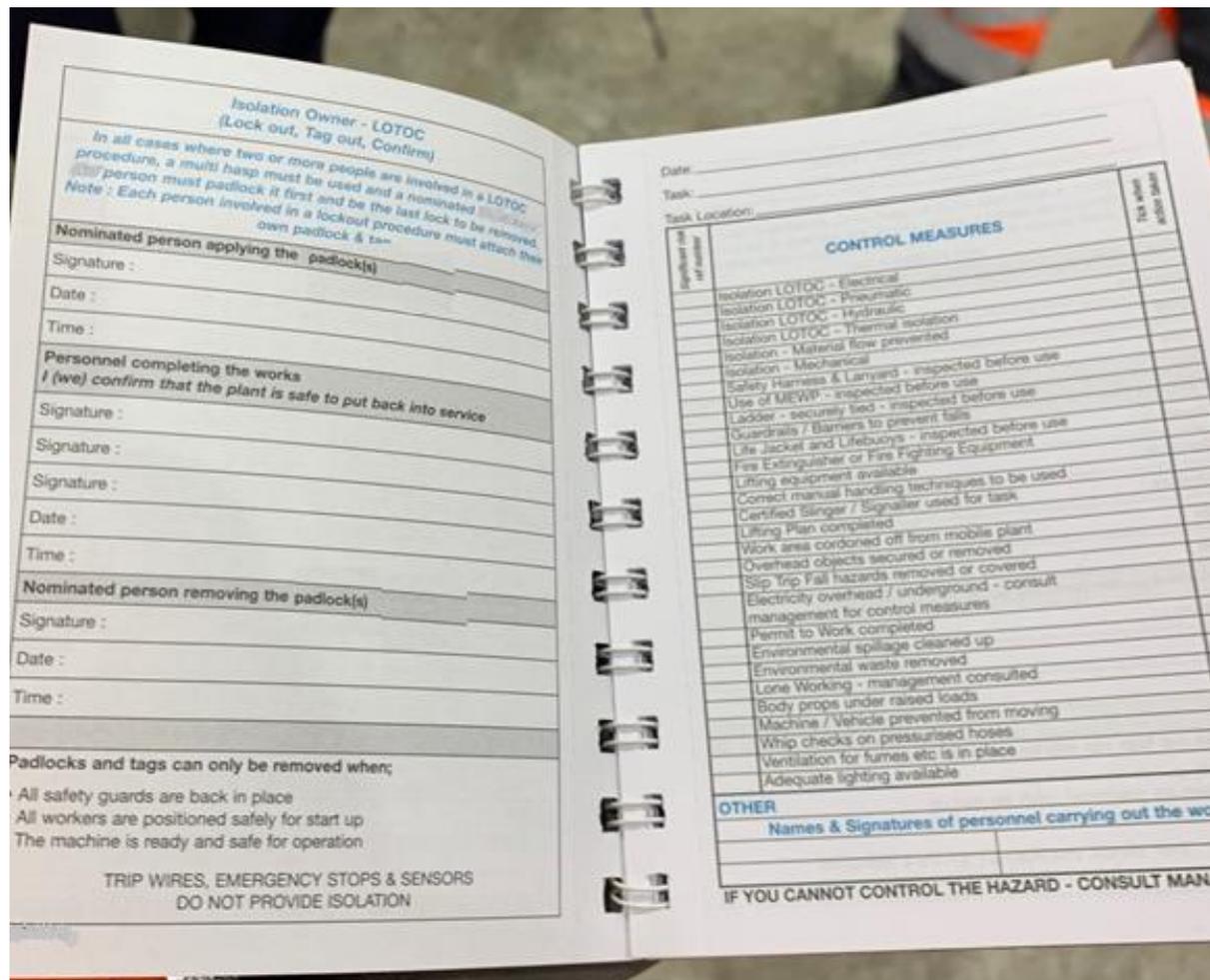
# Risk Reduction

- Hazard identification & Risk assessment
- Written procedures
- Appropriate Controls
- Information, Instruction & Training
- Work permits
- Safe system of work plans
- Frequent checks and audits.

Communication

Culture of the Organisation

Zero tolerance approach to risky behaviour !



**Isolation Owner - LOTO**  
(Lock out, Tag out, Confirm)

*In all cases where two or more people are involved in a LOTO procedure, a multi hasp must be used and a nominated person must padlock it first and be the last lock to be removed. Note: Each person involved in a lockout procedure must attach their own padlock & tag.*

**Nominated person applying the padlock(s)**  
Signature : \_\_\_\_\_  
Date : \_\_\_\_\_  
Time : \_\_\_\_\_

**Personnel completing the works**  
*I (we) confirm that the plant is safe to put back into service*  
Signature : \_\_\_\_\_  
Signature : \_\_\_\_\_  
Date : \_\_\_\_\_  
Time : \_\_\_\_\_

**Nominated person removing the padlock(s)**  
Signature : \_\_\_\_\_  
Date : \_\_\_\_\_  
Time : \_\_\_\_\_

Padlocks and tags can only be removed when;  
• All safety guards are back in place  
• All workers are positioned safely for start up  
• The machine is ready and safe for operation

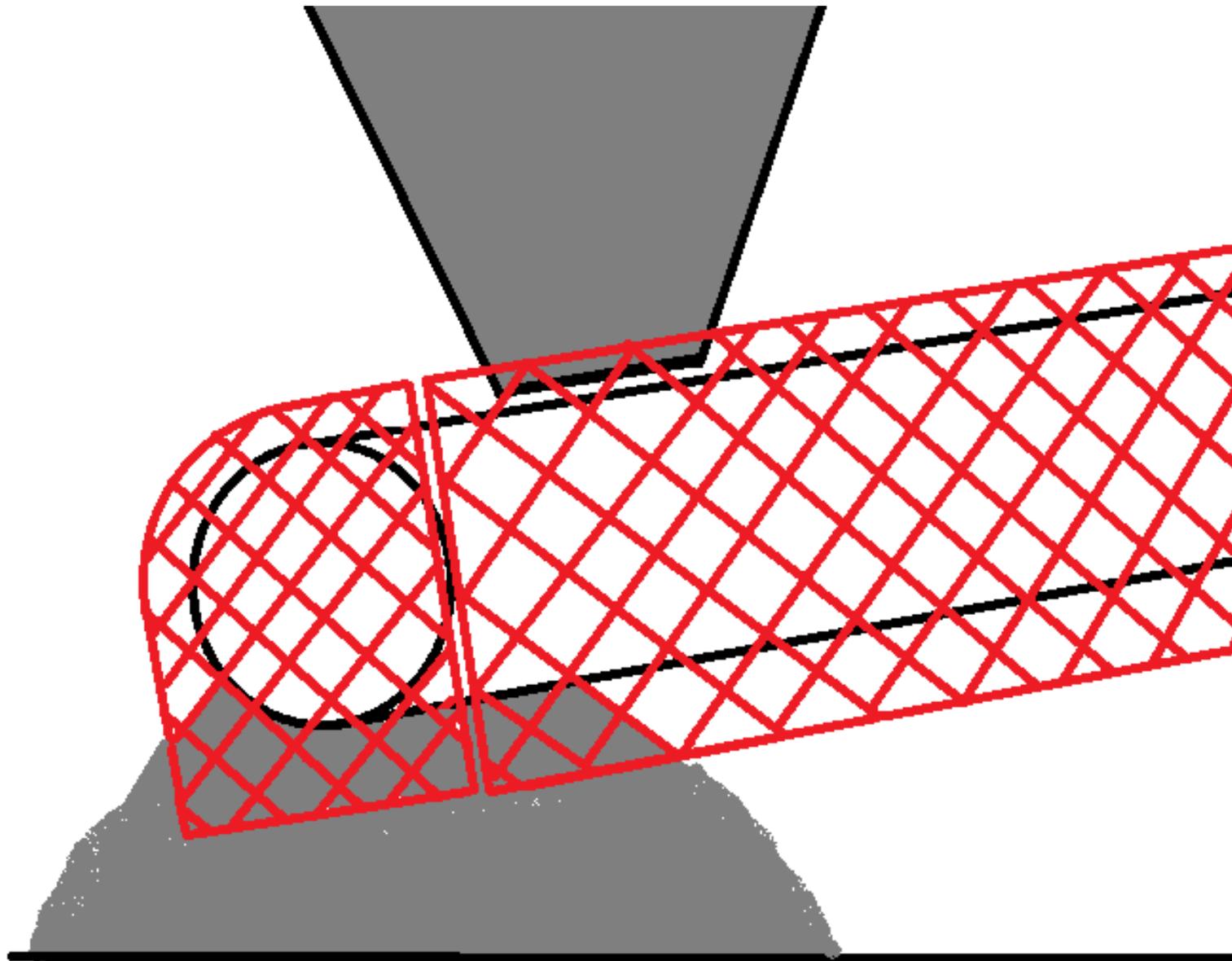
TRIP WIRES, EMERGENCY STOPS & SENSORS  
DO NOT PROVIDE ISOLATION

Date: \_\_\_\_\_  
Task: \_\_\_\_\_  
Task Location: \_\_\_\_\_

Signature (or initials)	CONTROL MEASURES	Tick when action taken
	Isolation LOTO - Electrical	
	Isolation LOTO - Pneumatic	
	Isolation LOTO - Hydraulic	
	Isolation LOTO - Thermal isolation	
	Isolation - Material flow prevented	
	Isolation - Mechanical	
	Safety Harness & Lanyard - inspected before use	
	Use of MEWP - inspected before use	
	Ladder - securely tied - inspected before use	
	Guardrails / Barriers to prevent falls	
	Life Jacket and Lifebuoys - inspected before use	
	Fire Extinguisher or Fire Fighting Equipment	
	Lifting equipment available	
	Correct manual handling techniques to be used	
	Certified Signaler / Signaller used for task	
	Lifting Plan completed	
	Work area cordoned off from mobile plant	
	Overhead objects secured or removed	
	Slip Trip Fall hazards removed or covered	
	Electricity overhead / underground - consult management for control measures	
	Permit to Work completed	
	Environmental spillage cleaned up	
	Environmental waste removed	
	Lone Working - management consulted	
	Body props under raised loads	
	Machine / Vehicle prevented from moving	
	Whip checks on pressurised hoses	
	Ventilation for fumes etc is in place	
	Adequate lighting available	

**OTHER**  
Names & Signatures of personnel carrying out the work

IF YOU CANNOT CONTROL THE HAZARD - CONSULT MANA



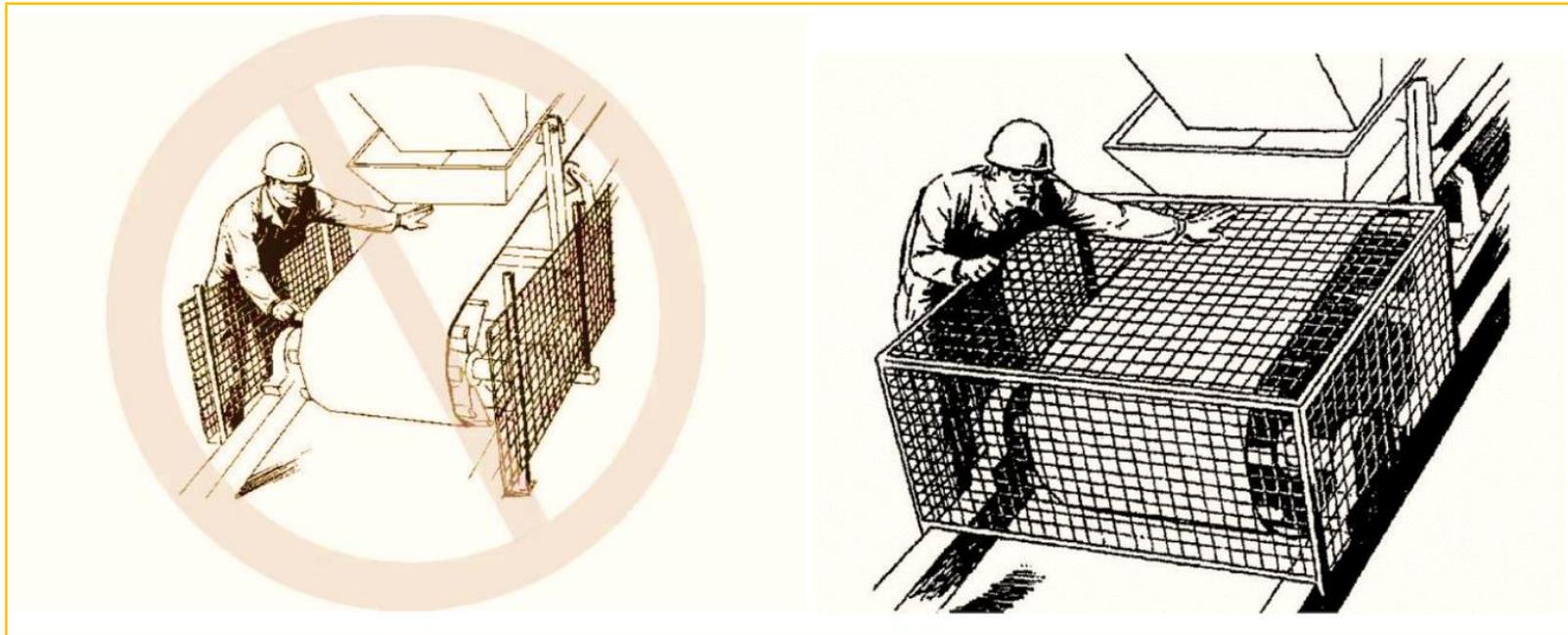
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# Conveyor Safety Questions

# Conveyor Systems

1. Is there a distinctive prestart audible warning on conveyor systems?
2. Are conveyors sufficiently guarded to prevent contact with moving parts where such contact could lead to a serious or fatal injury?
3. Are documented periodic checks carried out on conveyor systems?



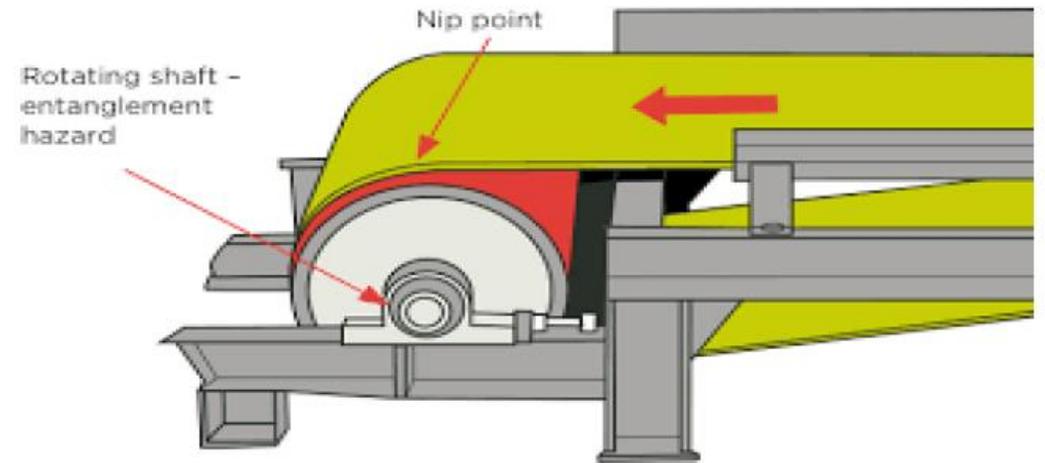
# Conveyor Systems

4. Are return idler rollers that are accessible and have downward pressure adequately guarded/enclosed so that there is no trapping or crushing risk?



# Conveyor Systems

5. Are head drums, tail drums and drive systems adequately guarded?



# Guarding Questions

# Guarding

1. Are appropriate guards in place to prevent contact with moving parts where such contact could lead to a serious or fatal injury?
2. Are guards adequately secured, needing a tool to remove them?



# Guarding

3. Is there a system in place to prevent unauthorised start up when guards are not in place for maintenance operations or repairs? e.g. captive key/interlock or lock out/tag out system.
4. Are drive systems adequately guarded?
5. Are there signs in place in hazardous areas?



# Machinery Guarding Guidance

## Machinery Guarding Training Pack for Quarries.

The Covid-19 pandemic has prevented the delivery of Quarry Safety Campaign workshops to ICF members as normally happens when the HSA run initiatives for the quarrying Industry.

To continue to support improvement in safety standards in the Quarry Sector, the Authority has decided to provide campaign guidance material within this information document that may help in achieving compliance.

Please consider the contents, distribute & explain to your staff, and take any actions as appropriate.

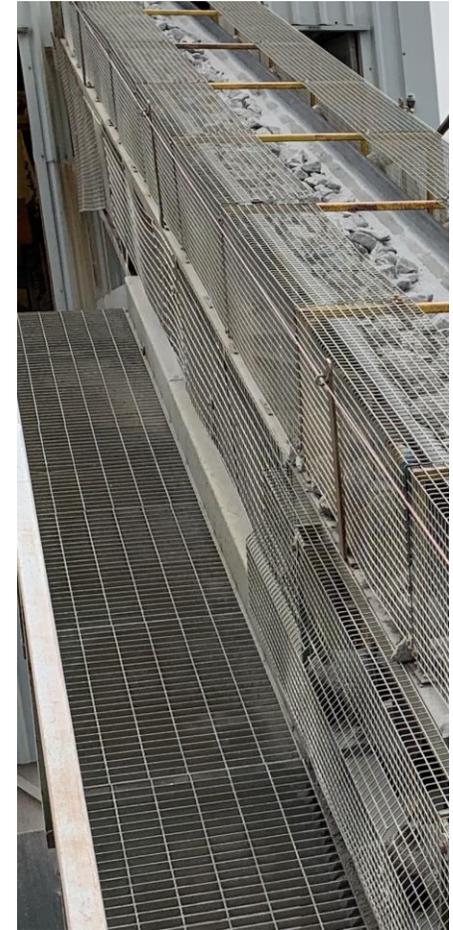
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[https://www.hsa.ie/eng/your\\_industry/quarrying/maintenance\\_operations/machinery\\_guarding\\_training\\_pack.pdf](https://www.hsa.ie/eng/your_industry/quarrying/maintenance_operations/machinery_guarding_training_pack.pdf)

# Emergency Stops

# Emergency Stops

1. Are there emergency stops fitted?
2. Are they appropriately located?
3. Are the emergency stops readily identifiable?
4. Are the emergency stops clean and operational?
5. Are routine checks of emergency stops carried out and documented?
6. Are pull-cords provided?
7. Are pull-cords operational?
8. Are routine checks of pull-cords carried out and documented?



# Access/Egress Questions

# Access Egress

1. Is there a risk assessment for access and egress?
2. Are walkways free of spillage and other materials?
3. Are walkways structurally safe and safe underfoot for travelling on?
4. Are appropriate guardrails provided?
5. Are work areas, walkways and catwalks free of trip hazards?



# Work stations Questions

# Workstations

1. Where control rooms are provided are they clean and free from dust?
2. Do control rooms (where provided) shield operative/s from noise?
3. Are control panels clean and marked so that controls are easily identifiable?
4. Are power sources marked so that they are easily identifiable?
5. Can power sources be isolated easily?
6. Are control panels located away from hazards?



# Work at Height Questions

# Work at height

1. Is there a work at height risk assessment in place?
2. Are there collective measure in place to prevent falls?
3. Where work at height PPE is provided, are the operatives trained in its use?
4. Where Mobile Elevated Work Platforms are used to lift persons, are operatives given appropriate training?



Unsafe system of Work at Height



# Confined Space Questions

# Confined Space Work

1. Where confined space works are undertaken, is there a risk assessment for this type of work?
2. Have operatives received confined space training?
3. Is there appropriate confined space equipment provided?
4. Is there a confined space permit to work in place?



## What is a confined space?

Confined Space refers to any place, including any vessel, tank, container, pit, bund, chamber, cellar or any other similar space which, by virtue of its enclosed nature, creates conditions that give rise to a likelihood of an accident, harm or injury of such a nature as to require emergency action due to

- the presence or reasonable foreseeable presence of:
  - flammable or explosive atmospheres
  - harmful gas, fume or vapour
  - free flowing solid or an increasing level of liquid
  - excess of oxygen
  - excessively high temperature
- the lack or reasonably foreseeable lack of oxygen

# Confined Space Guidance

The screenshot shows the top section of the HSA website. On the left is the HSA logo with the tagline 'Healthy, safe and productive lives and enterprises'. To the right are navigation links for Home, News, Events & Media, About Us, Careers, Contact Us, and Customer Service. Below these are social media icons for RSS, YouTube, Facebook, and Twitter. A search bar with the text 'How can we help you?' is positioned to the right of the navigation. Below the search bar is a horizontal menu with categories: Topics, Your Industry, Chemicals, Education, Legislation, Publications and Forms, Safety Alerts, Supports for Business, Vehicles at Work, and Workplace Health. At the bottom of this menu, the breadcrumb trail reads 'Home / Topics / Confined Spaces'.

- > Accident and Dangerous Occurrence Reporting
- > Accreditation
- > Asbestos
- > ATEX
- > BeSMART.ie
- > Biological Agents
- > Brexit
- > Bullying at Work
- > Business Licensing and Notification Requirements
- > Chemicals
- > Classification and Labelling
- > Complaint
- > Confined Spaces
- > Consultation
- > COVID-19 (Coronavirus) Information and Resources
- > Display Screen Equipment
- > Education
- > Electricity

## Working in Confined Spaces

### Frequently Asked Questions

- > [What is a confined space?](#)
- > [What are the key characteristics which define a confined space?](#)
- > [What are the hazards associated with confined spaces?](#)
- > [What are the legal requirements in regard to confined space entry?](#)
- > [What are legal requirements in relation to Emergency Arrangements for confined spaces?](#)
- > [What must I look for in a confined space risk assessment?](#)



[https://www.hsa.ie/eng/Topics/Confined\\_Spaces/#cs](https://www.hsa.ie/eng/Topics/Confined_Spaces/#cs)

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The cover features a large background image of a person in a white protective suit and helmet walking through a dark, circular tunnel. Below this are four smaller inset images: a person in an orange safety vest, a person in a white protective suit, a person in a white protective suit, and a close-up of a circular hatch. The title 'Code of Practice for Working in Confined Spaces' is written in white text on a dark blue background. At the bottom right is the HSA logo, which consists of a blue triangle containing the letters 'H', 'S', and 'A' in white, with the text 'HEALTH AND SAFETY AUTHORITY' below it.

# Emergency Planning Questions

# Emergency Plans

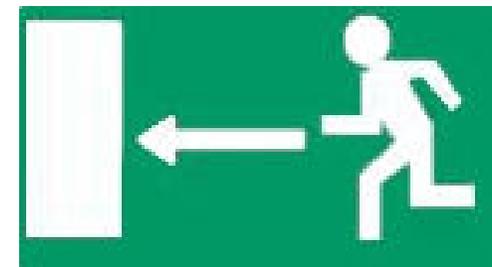
1. Is there an emergency plan in place?
2. Are emergency drills carried out to assess the effectiveness of emergency plans?
3. Is there a trained first aider?
4. Is emergency equipment provided?
5. Are documented checks carried out to ensure that emergency equipment provided is in good order?



*The Safety, Health and Welfare at Work Act 2005 requires that employers, including self-employed persons, prepare and revise as appropriate, adequate plans and procedures to be followed and measures to be taken in the case of an emergency or serious and imminent danger.*

*In an emergency situation, people can react differently to normal, yet rapid decisions will have to be made in a short period of time. The stress of the situation can lead to poor judgement, panic and confusion and the inability to think clearly and logically. Normal channels of authority and communication may also break down.*

*So pre-planning is essential in order to enable people to act to prevent disaster. It will also highlight any deficiencies or lack of resources, which can then be addressed before an actual emergency occurs*





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Go raibh maith agaibh  
Thank you

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