

# Golden Rules

## 1. Golden Rules

### *1.1 Golden Rules*



## 1.2 Understanding and Managing Risk

### Understanding and Managing Risk

#### Value:

The value of applying the requirements of the Golden Rules is to sustain a work environment where people's lives are not put at risk.

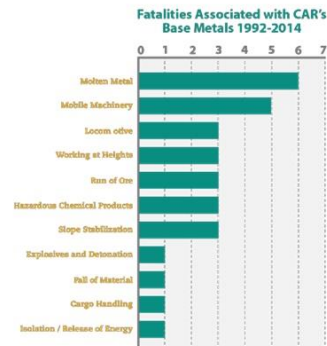
#### Our Commitment:

Vale is committed to preserving life and expects that each business unit apply a set of Golden Rules as a basis for risk control.

Consequently, every person is expected to know and understand the business unit Golden Rules and, prior to executing any critical task, they are to apply them so that they eliminate the risk of a fatal event occurring.

#### Our Experience:

Our experience over the last 22 years indicates that the majority of fatal injuries that have occurred within our organization are attributable to critical activities that were not performed as expected.



### 1.3 Golden Rules



## 1.4 Golden Rule #1 - Alcohol and Other Drugs



**01**  
Alcohol and  
Other Drugs

Never  
work under  
the influence  
of alcohol,  
drugs and  
substances  
that reduce  
fitness for  
work.

Fitness-  
for-work

## 1.5 Golden Rule #2 - Working at Height

02  
Working  
at Height

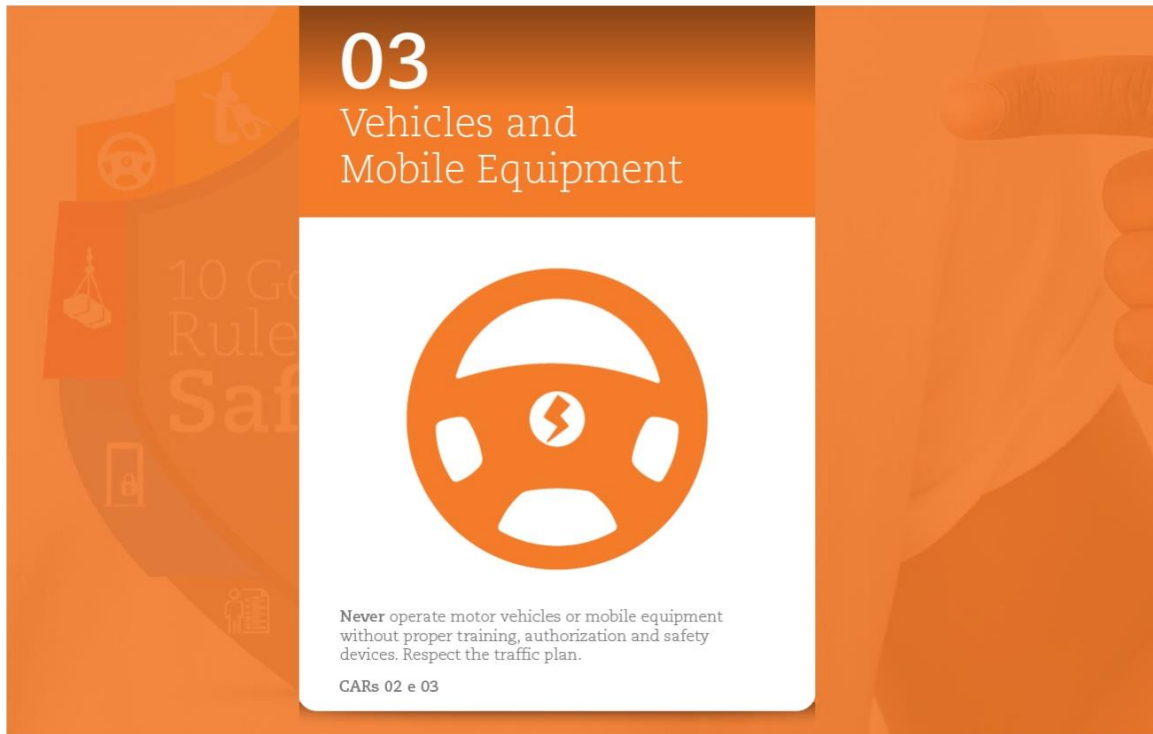


Never perform work at height ( $\approx 1.8\text{m}$ ) without proper training, authorization and always use a safety harness secured to an appropriate anchor point.


CAR 01

10 Golden Rule Safety

## 1.6 Golden Rule #3 - Vehicles and Mobile Equipment



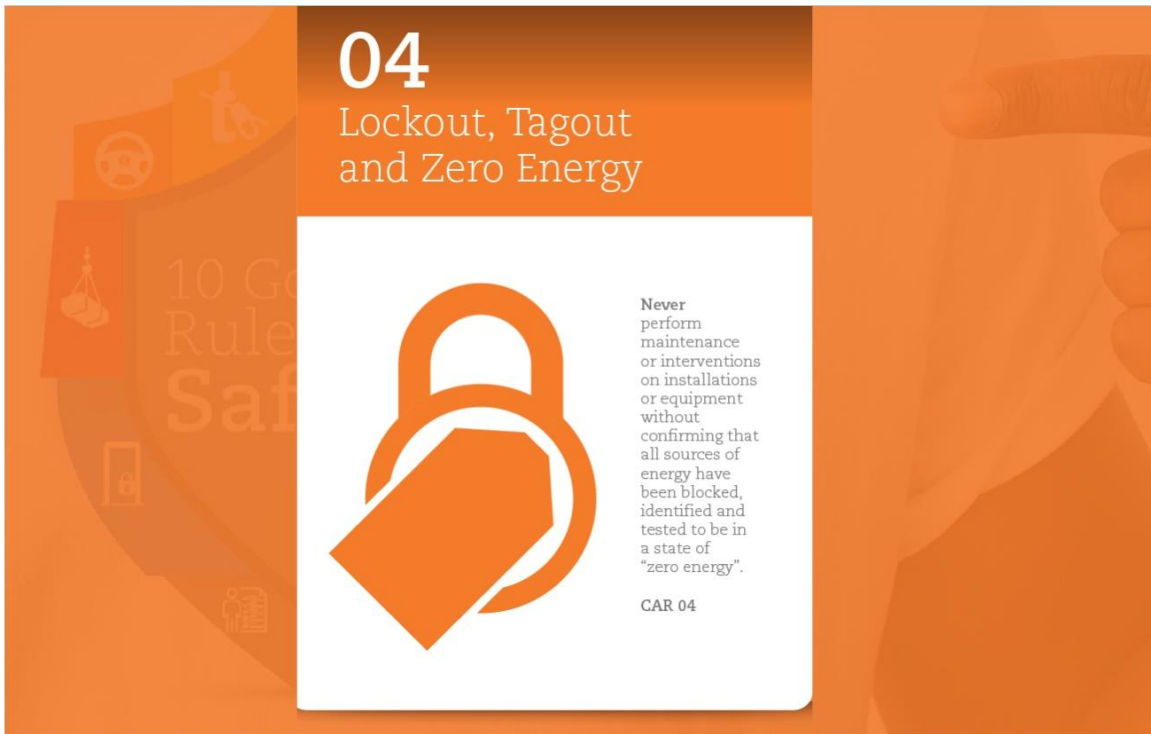
**03**  
Vehicles and  
Mobile Equipment




**Never** operate motor vehicles or mobile equipment without proper training, authorization and safety devices. Respect the traffic plan.

CARs 02 e 03

## 1.7 Golden Rule #4 - Lockout, Tagout and Zero Energy



**04**  
Lockout, Tagout  
and Zero Energy



Never perform maintenance or interventions on installations or equipment without confirming that all sources of energy have been blocked, identified and tested to be in a state of "zero energy".

CAR 04

## 1.8 Golden Rule #5 - Lifting Loads

**05**  
Lifting  
Loads

Never  
place yourself  
under a  
suspended load  
or enter an  
isolated area.  
Only use  
certified  
lifting devices.




CAR 05

The image is a safety poster with a red background. At the top, the number '05' is in large white font, followed by 'Lifting Loads' in a smaller white font. Below this, on a white rectangular background, is a red illustration of a hook with three cables attached to a rectangular load. To the left of the illustration, there is a block of text in red. At the bottom left of the white background, the text 'CAR 05' is written in red. The background of the poster features faint, semi-transparent icons and text, including '10 Golden Rule Safety' and various safety symbols like a scale, a person, and a lock.



## 1.9 Golden Rule #6 - Confined Spaces

**06**  
Confined  
Spaces



Never work in a confined space alone, without training, authorization, an entry permit and appropriate PPE.

CAR 06

## 1.10 Golden Rule #7 - Restricted Areas

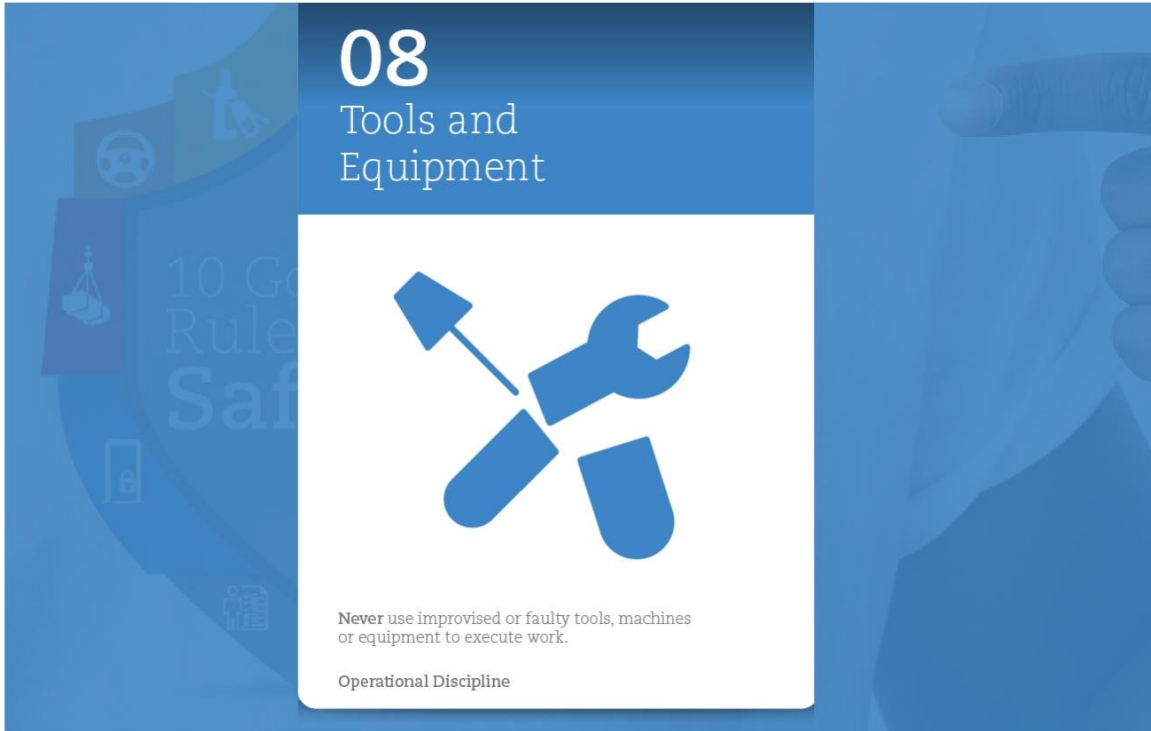
# 07

## Restricted Areas


Never enter into production areas, tailings areas, electrical rooms / substations or any other restricted areas without authorization.

Operational Discipline

## 1.11 Golden Rule #8 - Tools and Equipment



**08**  
Tools and  
Equipment



Never use improvised or faulty tools, machines  
or equipment to execute work.

Operational Discipline

## 1.12 Golden Rule #9 - Risk Analysis

**09**  
Risk  
Analysis

Never  
perform any  
work without  
understanding  
the risks and  
comply with  
all required  
controls.

Operational  
Discipline

### 1.13 Golden Rule #10 - Electronic Devices




**10**  
Electronic  
Devices

Never  
use cell phones  
or any other  
device that  
can cause loss  
of focus in  
non-authorized  
operational  
areas, stairs  
and while  
crossing streets.

Operational  
Discipline

## 2. Rule #1 Alcohol and Other Drugs

### 2.1 Golden Rule #1 - Alcohol and Other Drugs

	<h1>01</h1> <p>Alcohol and Other Drugs</p>	
	 <p>Never work under the influence of alcohol, drugs and substances that reduce fitness for work.</p> <p>Fitness- for-work</p>	

## 2.2 Alcohol



### Alcohol and other Drugs

#### Alcohol

The use, possession (i.e. on your person or in your vehicle on company property), distribution, offering or sale of beverage alcohol is prohibited when on Company business, premises, and property consistent with any applicable site rules and industry regulations.

**In addition, contract workers cannot:**

- Report for work or remain at work under the influence of alcohol from any source;
- Consume any product containing alcohol (including beverage alcohol) when on duty including during meals or breaks;
- Return to work or report for work after consuming alcohol at a social event;
- Have a positive test as determined through the testing program;
- Use alcohol after an incident until tested or advised testing is not required.



## 2.3 Illicit Drugs



### Alcohol and other Drugs

#### Illicit Drugs:

**The following are prohibited while on Vale business, premises, and property:**

- the use, possession, cultivation, manufacture, distribution, offering or sale of illicit drugs or illicit drug paraphernalia;
- reporting to work or being at work while under the influence of illicit drugs; and
- a positive drug test as determined through the testing program.





## 2.4 Medications



### Alcohol and other Drugs

#### Medications

- Contract workers are expected to responsibly use prescribed and over the counter medications.
- They should investigate (through their doctor or pharmacist) whether a medication can affect safe operation, and take appropriate steps to minimize associated risk.

#### **The following are prohibited while on Vale business, premises, and property:**

- The possession of prescribed medications or narcotic substance without a legally obtained prescription.
- Distribution, offering or sale of prescription medications (trafficking).
- The intentional misuse of medications (e.g. using the medication not as it has been prescribed, using someone else's prescription medication, combining medication and alcohol use against direction).



## 2.5 Investigations



### Alcohol and other Drugs

#### Investigations

The following situations may result in investigations being carried out.

##### 1. Suspected Possession of Banned substances:

- Supervisors or security will advise senior management of any concern.
- Senior management will determine whether and how to initiate an investigation, including whether to involve law enforcement.
- A contract worker, who refuses to submit to an investigation requested by Vale representative, will be removed from the premises. Confirmed possession of substances or paraphernalia may result in testing.

##### 2. Unfit for Work Investigations:

- Vale reserves the right to require a Contractor to fully investigate a possible Instruction violation, including the requirement for a reasonable cause test.

## 2.6 Investigations



### Alcohol and other Drugs

#### Investigations

The following situations may result in investigations being carried out.

##### **3. Impaired Driving Situations: (off property resulting in license suspension)**

- If required to operate any company vehicle on behalf of Vale, contract workers are expected to report the loss of their drivers license.
- They are required to immediately report receipt of an impaired driving charge to their contract manager or supervisor if it is received while operating a vehicle on behalf of Vale, and to comply with all investigation procedures and consequences.

##### **4. Incident Investigations:**

- Vale reserves the right to require a contract worker to be tested for alcohol and drugs as part of an investigation into a serious or potentially serious incident.
- The decision to refer someone for a test will be made by the Vale representative investigating the incident in conjunction with the Contractor supervisor, if available.

## 2.7 Testing Program



### Alcohol and other Drugs

#### Testing Program

All test decisions involve consultation with the contractor supervisor or management representative (if available) and Vale management.

**All persons on premises are subject to testing in the following select circumstances:**

##### 1. Reasonable Cause:

Testing will be conducted when there is reasonable grounds to believe alcohol or other drug use is a factor in an unfit for work investigation; Testing is initiated based on direct observations.

##### 2. Post incident:

Testing will be conducted as part of an investigation into a serious or potentially serious work related incident; examples include:

- A fatality or serious injury to any individual;
- A serious environmental incident with adverse effects;
- Significant loss or damage to property, equipment or vehicles;
- Significant loss of Company or client revenues;
- A near miss with significant potential for serious consequences.

**Note:** All tests are conducted through the Vale program at Vale discretion. Tests include both Breath Alcohol and Point of Collection Urine Drug screening

## 2.8 Pick One


*(Pick One, 10 points, unlimited attempts permitted)*

### 3. Rule #2 Working at Height

#### 3.1 Golden Rule #2 - Working at Height

# 02

## Working at Height



Never perform work at height ( $\approx 1.8\text{m}$ ) without proper training, authorization and always use a safety harness secured to an appropriate anchor point.

CAR 01

### 3.2 Golden Rule #2



#### Golden Rule #2 – Working at Height

Working at height standards are applied for any height that is equal to or greater than 1.8 meters above the ground or level lower than this where there is risk of injury from falling while performing work.



Workers need to be trained, qualified and authorized to work at heights

### 3.3 Definitions



## Golden Rule #2 – Working at Height

### Definitions

#### Open Hole or Fall Arrest Condition:

An opening or unguarded edge at a work level, that is large enough that an employee could fall through it, or over it to a lower level or obstruction that is 1.8 m or more below the work level.

#### Fall Hazard:

The fall hazard area begins when a person is within 2m of an open hole or fall arrest condition, or 2m from the point where unsafe footing or ground slope might cause a slip or fall towards the open hole or fall arrest condition.



SPI-06

### 3.4 Definitions

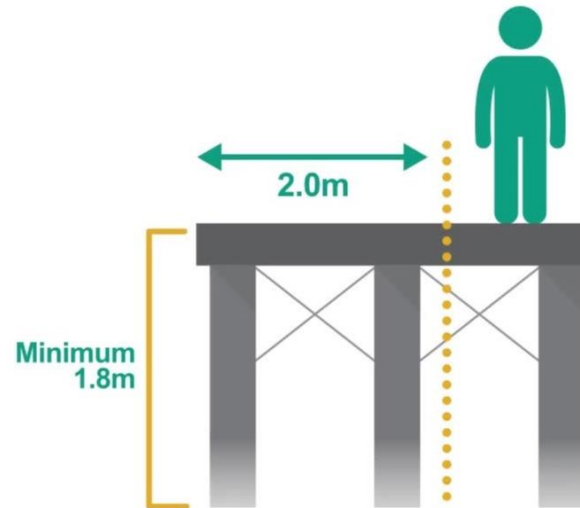


## Golden Rule #2 – Working at Height

### Definitions

#### Guardrail:

A proper guardrail will eliminate an open hole condition and typically, not require the worker to use any further Fall Protection Equipment.





### 3.5 Definitions

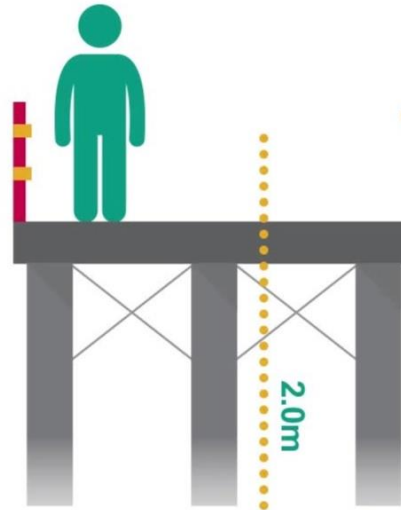


## Golden Rule #2 – Working at Height


### Definitions

#### Travel Restraint System:

An assembly of components (lanyard, miners belt or full body harness without energy absorber) that, when properly assembled and used together, and when connected to a suitable anchorage, prevents an employee from reaching an unprotected edge or opening where a fall could occur.



### 3.6 Definitions



## Golden Rule #2 – Working at Height

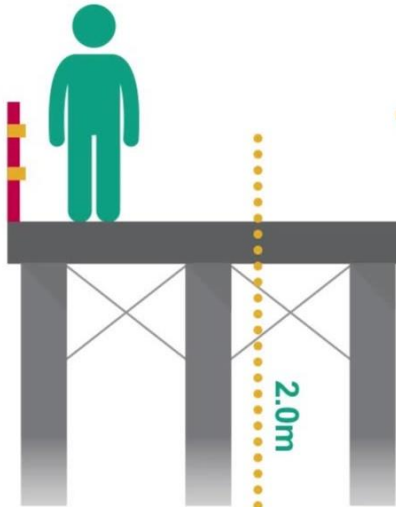
### Definitions

**Fall Arrest System:**

Consists of a full body harness, an energy absorber, a connecting device, a suitable anchor point and a written rescue plan.

This occurs when a worker is in a position that they can reach past the edge or slope leading to an edge of an open hole.

All workers using fall protection equipment must be trained and be able to provide supporting documentation upon request.



The diagram shows a green silhouette of a worker standing on a grey platform. To the left of the worker is a vertical red and yellow striped barrier. To the right of the worker is a vertical dotted yellow line representing the edge of an open hole. A vertical dimension line with a '2.0m' label indicates the height from the platform to the edge of the hole.

### 3.7 Pick One

*(Pick One, 10 points, unlimited attempts permitted)*

### 3.8 What are the components of a Fall Arrest System?



## Golden Rule #2 – Working at Height

## What are the components of a Fall Arrest System?

A Fall Arrest System consists of a full body harness, an energy absorber, a suitable connecting device, a suitable anchor point and a written rescue plan.

**Body Harness**



**Energy Absorber**

**Connecting Device**



**Anchor Point**



**Written Rescue Plan**



### 3.9 What are the components of a Fall Arrest System?



#### Golden Rule #2 – Working at Height

#### What are the components of a Fall Arrest System?

**Suitable Anchor Point:** Anchorage that will arrest a worker's fall. A anchoring hitch shall be capable of sustaining twice the force it may be subjected to. (Regulation 854 section 14(3)).

An anchorage is generally a structural member such as a beam, girder, column, floor or wall. **For example: Do not tie off to handrails, electrical cable trays or process piping.**



### 3.10 Definitions



## Golden Rule #2 – Working at Height

### Definitions

**Energy Absorber:** A device that dissipates kinetic energy, limits deceleration forces during fall arrest, and does not return energy to the system or into the human body. (Regulation 854 section 14 (3) (b)) In a free fall situation the energy absorber will elongate.



### 3.11 Definitions



## Golden Rule #2 – Working at Height

### Definitions

**Self Retractable Lanyard (SRL):** A device that performs a tethering function while allowing vertical movement (below the device) to the maximum working length of the device, which will arrest a user's fall.

The SRL is designed to arrest a fall while minimizing free fall distance and impact force.



Do not use a full body harness with an attached energy absorber when using a SRL.



### 3.12 Pick One

*(Pick One, 10 points, unlimited attempts permitted)*

### 3.13 Ladder Safety



## Golden Rule #2 – Working at Height

### Ladder Safety

#### Rules for safely using ladders:

- Inspect all ladders prior to use for defects or damage.
- Aluminum ladders are not permitted. Non-conducting ladders manufactured to CSA standard, only Grade 1 ladders are allowed.
- Watch for electrical sources when erecting ladders.
- The maximum height of an extension ladder is 7 meters and the maximum height of a step ladder is 6 meters.
- Step ladders may not be used by leaning against a structure. They may only be used with both halves fully deployed and the braces locked in the horizontal position.
- Maintain three point contact when climbing or descending any ladder.
- Work can be done from a step ladder.
- Extension ladders are for accessing work platforms only. Three point contact must be maintained on extension ladders at all times.



### 3.14 Rules for safely using extension ladders



#### Golden Rule #2 – Working at Height

#### Rules for safely using extension ladders:

Extension ladders must be erected such that the horizontal distance from the foot of the ladder to the base of the wall against which it rests is one quarter the length of the ladder.

- 1 foot out at base for every 4 feet up
- 1m overhang to level being accessed
- Lashed at the top
- Sitting square and level
- Extension ladders require 3 point contact always



LOAD CAPACITY*	DESCRIPTION	CSA CODE	ANSI CODE
250 lbs. /113 kg	Construction and Industrial - Heavy Duty	Grade 1	Type I
300 lbs. /136 kg	Construction and Industrial - Heavy Duty	Grade 1A	Type IA
375 lbs. /170 kg	Construction and Industrial - Heavy Duty	Grade 1AA	Type IAA

### 3.15 Pick One

(Pick One, 10 points, unlimited attempts permitted)



### 3.16 Scaffold

## Golden Rule #2 – Working at Height

### Scaffold

Before it is used, inspect the scaffold and look for the Green Tag before using.

**Green Tag** - Safe to use

**Yellow Tag** - Safe to use with the listed restrictions

**Red Tag** - Not safe to use



### 3.17 Scaffold

## Golden Rule #2 – Working at Height

### Scaffold

**Check for:**

- Gaps or open holes in platforms
- Missing handrails or toe-boards
- Loose or damaged bracing or wedges
- Other safety hazards are controlled such as: pinch points, hot surfaces, low overhead access, rotating equipment, or electrical sources

**Never use a scaffold that you think is unsafe. Check with your supervisor, and tag out the scaffold if it is unsafe to use.**



## 3.18 Scaffold



### Golden Rule #2 – Working at Height

## Scaffold

#### Safety Rules for Scaffolding:

- Good housekeeping is essential. Ensure platforms are free of trip and slip hazards.
- Do not overload platforms with materials.
- Do not alter a scaffold unless you are Qualified and Authorized.
- Scaffolding must be inspected monthly by a competent person, and on each shift by the group using the scaffolding when in use.
- Never straddle, stand on, or work outside the guardrail.
- Do not use unstable objects or makeshift devices to increase the working height of the scaffolds. Only use a ladder on a scaffold if intended for that purpose.
- Only use mobile scaffolds while the castors are locked in place. Never 'ride' a mobile scaffold. Remove all loose objects before mobile scaffolds are moved.

### 3.19 Scaffold



## Golden Rule #2 – Working at Height

### Scaffold

#### Safety Tips for Others:


- Avoid walking under or close to a scaffold that is being built or is in use.
- Watch for hazards when material is being hoisted or work is being done overhead.
- When operating mobile equipment, take extra care near scaffolding, or have solid barricades installed around them.

## 4. Rule #3 - Vehicles and Mobile Equipment

### 4.1 Golden Rule #3 - Vehicles and Mobile Equipment

# 03

## Vehicles and Mobile Equipment



**Never** operate motor vehicles or mobile equipment without proper training, authorization and safety devices. Respect the traffic plan.

CARs 02 e 03

## 4.2 Mobile Equipment and Light Vehicles



### Golden Rule #3 – Vehicles and Mobile Equipment

## Mobile Equipment:

### Safety Tips for Others:

High Potential Incidents are incidents that had the potential to result in permanently disabling injuries and fatalities.

RISK MATRIX		LIKELIHOOD				
		RARE ONCE EVERY 100 YEARS OR LONGER	UNLIKELY WITHIN 10 YEARS	OCCASIONAL WITHIN 1 AND 10 YEARS	LIKELY WITHIN ONE YEAR	FREQUENT ONCE OR MORE A MONTH
		LEVEL OF RISK				
SEVERITY	CATASTROPHIC - (E) MULTIPLE FATALITIES	MODERATE	HIGH	VERY HIGH	VERY HIGH	VERY HIGH
	CRITICAL - (D) PERMANENTLY DISABLING/ SINGLE FATALITY	MODERATE	MODERATE	HIGH	VERY HIGH	VERY HIGH
	SERIOUS - (C) LOST TIME	LOW	LOW	MODERATE	HIGH	HIGH
	MODERATE - (B) MEDICAL TREATMENT/ RESTRICTED WORK	LOW	LOW	LOW	MODERATE	MODERATE
	MINOR - (A) FIRST AID/TREATMENT	LOW	LOW	LOW	LOW	MODERATE



## 4.3 Mobile Equipment and Light Vehicles



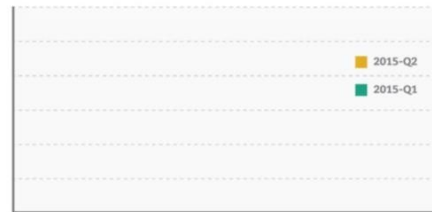
### Golden Rule #3 – Vehicles and Mobile Equipment

#### Mobile Equipment:

Many of the high potential incidents that occur within Vale each year are attributed to Mobile Equipment. Some of the main hazards associated with Mobile Equipment include:

- Equipment Failure
- Vehicle traffic
- Roadway conditions
- Line of sight and overall visibility
- Low clearance areas
- Pedestrians encounters

2015 High Potential Incident  
Ontario Division



## 4.4 Equipment



### Golden Rule #3 – Vehicles and Mobile Equipment

#### Equipment:

##### The most common locations where equipment may fail include:

- Hydraulic hoses and fittings
- Brakes
- Steering components
- Electrical wiring
- Exhaust systems

##### Controls of Hazards for Equipment Failure include:

- Preventative maintenance programs
- Effective daily pre-operational inspections of equipment
- Prompt reporting of problems



## 4.5 Pre-Operational Checks



### Golden Rule #3 – Vehicles and Mobile Equipment

#### Pre-Operational Checks

- Each piece of mobile equipment must have a pre-use checklist on board that covers the critical items for that piece of equipment.
- The equipment must be inspected once per shift prior to use in order to identify any deficiencies that might prevent it from being operated safely and kept with the equipment for the duration of the shift.
- Report any safety concerns about equipment condition to your supervisor immediately.

**MOBILE FLEET**  
**OPERATOR'S PRE-OPERATION INSPECTION**

SHEET \_\_\_\_\_ ODOMETER READING \_\_\_\_\_ VEHICLE # \_\_\_\_\_

Before entering vehicle check off first South & Home Road below

CHECK ITEM	Y	N	IDENTIFY PROBLEM
Fluid levels			
Engine Coolant Level			
Brake Oil Level			
Electrical Oil Level			
Transmission Oil Level			
Battery Level / Charge			
Fuel Level			
Seat Belts			
Light Mirrors			
Windshield Washers			
Signal Lights			
Tires / Wheels / Brakes			
Parking Brake			
Service Brake			
Braking system - horn			
Steering Control			
Windshield			
Clutch / Brake			
General Condition			

Circle Damaged Area

Comments: \_\_\_\_\_

Test Drive for Normal Operation  OK If the above items OK  
 UNSATISFACTORY  UNSATISFACTORY

Operator's Signature: \_\_\_\_\_ Time: \_\_\_\_\_

Date: \_\_\_\_\_

White Copy - Supervisor Yellow Copy - Remains in Unit

## 4.6 Visibility



### Golden Rule #3 – Vehicles and Mobile Equipment

#### Visibility

**An operator's poor view of the area ahead of their equipment is a contributing factor in many unfortunate incidents yearly.**

- On mobile equipment, the operator's line of sight is partially obstructed at times by different components on the equipment such as a bucket, headlight brackets or air intakes.

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## 4.7 Visibility



### Golden Rule #3 – Vehicles and Mobile Equipment

#### Visibility

##### Control of Hazards Include:

- Open holes or drop off conditions are identified and marked to keep mobile equipment within boundaries.
- Use barricades or spotters are in place in areas of low clearance areas, or areas with high pedestrian traffic.
- Follow established traffic plans including light signals and signs to maintain a proper flow of traffic in and around permitted areas.
- Inspect unfamiliar areas before entering with mobile equipment
- Follow good communication practices when approaching areas that are using mobile equipment.

## 4.8 Pick One


*(Pick One, 10 points, unlimited attempts permitted)*

## 5. Rule #4 - Lockout, Tagout

### 5.1 Golden Rule #4 - Lockout, Tagout and Zero Energy

# 04

## Lockout, Tagout and Zero Energy



Never perform maintenance or interventions on installations or equipment without confirming that all sources of energy have been blocked, identified and tested to be in a state of "zero energy".

CAR 04

## 5.2 Zero Energy State (ZES)



### Golden Rule #4 – Lockout, Tagout and Zero Energy

#### Zero Energy State (ZES):

Vale has a program for Locking and Tagging called the ZERO Energy State (ZES). Everybody on Vale property must have the appropriate ZES training for the work they are doing and follow the ZES program.

This includes the knowledge and use of Personal Protection Tags, Status Tags, personal locks, project locks, lock boxes and forms.

All contractors who will be tagging must be qualified in the appropriate ZES Module and be authorized to perform the work.



## 5.3 Zero Energy State (ZES)



### Golden Rule #4 – Lockout, Tagout and Zero Energy



The rules of the ZES Program support Ontario Regulations and have one goal: to help ensure the safety of workers by reducing stored energy levels to manage risk.

#### Energy and Machinery Isolation - ZES Rules for Locking and Tagging

1. One Person - One Lock
2. A RED Personal Protection Tag is the only tag to be used for personal protection on energy isolating devices.
3. Only a Tagger can install/ remove his/her personal protection. (If the Tagger is unable to, or fails to, remove their personal protection, the Supervisor can remove the personal protection.)
4. Taggers shall remove their personal protection by the end of their working shift.
5. DO NOT operate an energy isolating device that has personal protection on it.
6. DO NOT operate an energy isolating device unless qualified and authorized to do so.
7. Verify a Zero Energy State before working on machinery.
8. RED personal protection and BLUE project locks are to have ONLY one key.
9. A RED Personal Protection Lock shall ONLY be used for personal protection. It should not be used for any other purposes.
10. A BLUE project lock shall be used ONLY for securing keys in a Lock Box and not be used for any other purposes.
11. Personnel who require personal protection from electrocution shall have positive isolation from all sources of power.
12. Only qualified personnel can install grounds on electrical equipment.
13. Control power or pilot pressure shall not be used for personal protection.
14. Defective energy isolating devices are to be immediately tagged with a Status Tag.
15. A Status Tag is required to identify the condition of equipment or why it cannot to be operated.
16. Do not remove a Status Tag unless authorized to do so.  
Authorization to remove a Status Tag can be given by:  
A) Any Tagger who is continuing the work as stated on the Status Tag.  
B) The Tagger's Supervisor.  
C) The Operating Superintendent or his/her designate in charge of the Equipment or process.
17. A variance to a Zero Energy State Locking and Tagging procedure is only valid in the plant/mine that has developed and approved it.

## 5.4 ZES Rules for Locking and Tagging



### Golden Rule #4 – Lockout, Tagout and Zero Energy

## ZES Rules for Locking and Tagging

There are specific procedures associated with locking and tagging. Each plant will have resources available to help with tasks. For example:

- Job Procedures
- ZES Tools
- Orientation Handbook
- Vale Contact and Safety Representatives

#### Installing Personal Protection without a Lock Box

- | PREPARE  | DO IT   |
|--|---|
| <ul style="list-style-type: none"><li>1. Identify the personal protection to be used.</li><li>2. Check the personal protection is suitable for the task.</li><li>3. Check the personal protection is in good condition.</li><li>4. Check the personal protection is suitable for the task.</li></ul> | <ul style="list-style-type: none"><li>1. Lock the personal protection into the work area.</li><li>2. Check the personal protection is secure.</li><li>3. Check the personal protection is suitable for the task.</li><li>4. Check the personal protection is suitable for the task.</li></ul> |

#### Installing Personal Protection

- | PREPARE  | DO IT   |
|--|---|
| <ul style="list-style-type: none"><li>1. Identify the personal protection to be used.</li><li>2. Check the personal protection is suitable for the task.</li><li>3. Check the personal protection is in good condition.</li><li>4. Check the personal protection is suitable for the task.</li></ul> | <ul style="list-style-type: none"><li>1. Lock the personal protection into the work area.</li><li>2. Check the personal protection is secure.</li><li>3. Check the personal protection is suitable for the task.</li><li>4. Check the personal protection is suitable for the task.</li></ul> |

#### Removing Personal Protection

- | PREPARE   | DO IT   |
|---|---|
| <ul style="list-style-type: none"><li>1. Identify the personal protection to be removed.</li><li>2. Check the personal protection is suitable for the task.</li><li>3. Check the personal protection is in good condition.</li><li>4. Check the personal protection is suitable for the task.</li></ul> | <ul style="list-style-type: none"><li>1. Lock the personal protection into the work area.</li><li>2. Check the personal protection is secure.</li><li>3. Check the personal protection is suitable for the task.</li><li>4. Check the personal protection is suitable for the task.</li></ul> |



## 5.5 ZES Rules for Locking and Tagging



### Golden Rule #4 – Lockout, Tagout and Zero Energy



## CAUTION

Other companies use similar tags to establish personal protection and equipment status; however, it is important to note these companies may use different coloured formats for their tags.

It is **IMPORTANT** to **READ ALL INFORMATION** on tags affixed to locks, equipment, process controls, valves etc. to **UNDERSTAND** their purpose and to ensure you **MANAGE RISK**.

If you are unsure of the purpose of a tag, talk to your supervisor.



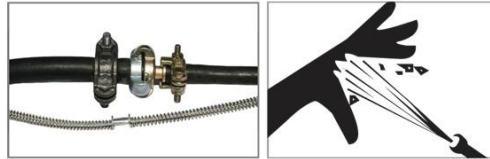
## 5.6 Pressurized Lines



### Golden Rule #4 – Lockout, Tagout and Zero Energy

#### Pressurized Lines

- Pressurized lines can pose many hazards to personnel working near them.
- Never turn on air, steam or water into a hose unless you are certain that the free end is secured and cannot whip about and strike you or someone else.
- Never clean clothing or skin with compressed air, never direct compressed air towards yourself or another person. Compressed air entering the body can be harmful or fatal.
- Never look for hydraulic leaks using your hands or body. Use cardboard or other method. Hydraulic fluid entering the body can cause serious injury.



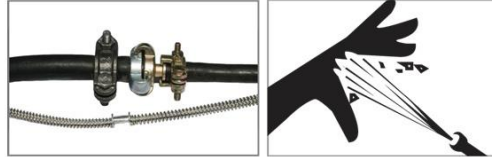
## 5.7 Pressurized Lines



### Golden Rule #4 – Lockout, Tagout and Zero Energy

#### Pressurized Lines

- When using air tools, whip checks should be used to secure the air hose to the tool.
- Air and water hoses should be de-energized and properly stored when not in use.
- Always ensure that air lines are de-energized, isolated and open-ended before beginning repair work.



## 5.8 Pressurized Cylinders



### Golden Rule #4 – Lockout, Tagout and Zero Energy

#### Pressurized Cylinders

- Compressed Gas Cylinders can pose an explosion hazard when not handled correctly.
- Compressed gas cylinders should not be stored near sources of heat or in direct sunlight.
- Gas cylinders should be stored in authorized areas only. When transporting gas cylinders they must be supported in the upright position and stored in approved racks.
- Oxygen and acetylene bottles must be stored in an upright position and be properly secured to prevent them from falling over. Hoses and gauges must be removed, and protective caps installed when not in use.
- Oxygen and Acetylene bottles with integrated and shielded gauges are preferred for use where possible.



## 5.9 Pick One

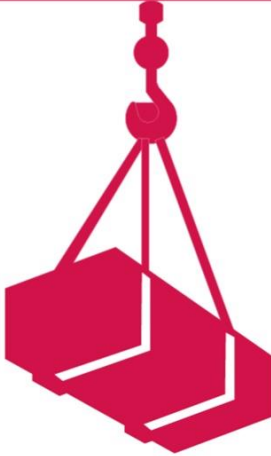
*(Pick One, 10 points, unlimited attempts permitted)*

## 6. Rule #5 - Lifting Loads

### 6.1 Golden Rule #5 - Lifting Loads

# 05

## Lifting Loads



Never place yourself under a suspended load or enter an isolated area. Only use certified lifting devices.

CAR 05

## 6.2 Golden Rule #5 - Lifting Loads



### Golden Rule #5 – Lifting Loads

Operators must be trained and qualified to perform tasks of hoisting and lowering material and supplies.

Equally important is the training and authorization of the person directing the lift or transfer. They both must know the capabilities of the machine they are working with and the loads it can handle safely. This along with a standard set of signals so that they can communicate properly will lead to a safe efficient operation.



## 6.3 Overhead Work-Guidelines



### Golden Rule #5 – Lifting Loads

#### Overhead Work-Guidelines

##### Safe lifting practices will require:

- Hoisting equipment that is designed and rated to lift the load.
- Hooks / slings / chains / clamps applied as designed for lifting.
- A balanced load using a controlled lift.
- Restriction of vehicle and pedestrian in the travel of a lift.
- Rigging plan for critical lifts.
- Lifting equipment is to be regularly tested / maintained to ensure its ability to hoist loads safely. It should be inspected prior to use.
- Know the approximate weight of the material or object that is being lifted so that the proper capacity lifting equipment is applied.
- Rigging shall be performed by a person trained and qualified to perform the task. Industry standard rigging principles shall be understood and applied for safe lifting of loads.
- Rigging equipment must have a certified capacity and must be physically inspected for any defects that would compromise its integrity during a lift.

## 6.4 Overhead Work-Guidelines



### Golden Rule #5 – Lifting Loads

#### Overhead Work-Guidelines

- Defective rigging equipment must be permanently removed from service and properly disposed of. Never use damaged slings or lifting devices. Never work under a suspended load.
- Always ensure that the area under the lift is barricaded to pedestrian and vehicle traffic.
- Loads can shift sideways when they are first lifted off the ground. Never position yourself between the load and another stationary object.
- Ensure that slings are protected from sharp corners at all times.
- If using a signal person to direct the load, standard hand signals for directing a crane shall be used. (See next page)
- If using radios to direct a lift, Critical Lift Radio's must be used to ensure that there is no break in communication. Blind lifts must have radio communication between the signal person and the crane operator.

## 6.5 Resources Associated with Lifting and Mechanical

Golden Rule #5 – Lifting Loads

### Resources Associated with Lifting and Mechanical

Each plant will have resources available to help with Lifting Operations. For example:

- Job Procedures
- ZES Tools
- Orientation Handbook
- Vale Contact and Safety Representatives

Orientation Handbook


## 6.6 Pick One

*(Pick One, 10 points, unlimited attempts permitted)*



## 7. Rule #6 - Confined Spaces

### 7.1 Golden Rule #6 - Confined Spaces

	<h1>06</h1> <p>Confined Spaces</p>	
	 <p>Never work in a confined space alone, without training, authorization, an entry permit and appropriate PPE.</p> <p>CAR 06</p>	

## 7.2 Confined Space Definition;



### Golden Rule #6 – Confined Spaces

#### Confined Space Definition;

A “confined space” is a fully or partially enclosed space:

- A. that is not both designed and constructed for continuous human occupancy, and
- B. in which atmospheric hazards may occur because of its construction, location, or contents or because of the work that is to be done in it.



## 7.3 Confined Spaces



### Golden Rule #6 – Confined Spaces

Vale Ontario Operations has a confined space program.

All personnel entering a confined space, or acting as an attendant or rescuer must have specific confined space training on this program.

Planning for a Confined Space entry is required to ensure that all risks are controlled.



#### Planning will include:

- Identification of all energy sources and process line entry points requiring isolation.
- Testing and understanding the control of atmospheric conditions prior to and during the work that will be performed.
- Having a tested rescue plan defined.
- Acquiring all necessary rescue equipment and setting it in place.
- Having rescue personnel available.
- Establishing a means of communication between those working in the confined space and those providing rescue.
- Completing the entry procedure and entry work permit.

## 7.4 Confined Spaces



### Golden Rule #6 – Confined Spaces

- Air quality is the primary concern. If in doubt, **Test!** Subsequent air quality testing is required if the job being performed may affect air quality, or if the air quality could change.
- An attendant is to be stationed immediately outside of a confined space at all times to monitor the work that is taking place and mobilize in the event of a rescue situation.
- The entry permit must be in place and approved by plant operations personnel before any entry into the confined space may take place.
- The attendant must never enter the confined space while acting as the attendant. The attendant must never leave their post at the entrance to the confined space, unless it is vacated and barricaded.



## 7.5 Confined Spaces



### Golden Rule #6 – Confined Spaces

- Regular communication must be established between the confined space workers and the attendant.
- The attendant must be in communication with site rescue personnel and first aid resources to initiate medical assistance if required.
- All rescue equipment is to be in place at the confined space prior to any entry taking place.
- Lifting rescue devices must be assembled and inspected.
- All personnel entering the confined space will need to wear a full body harness if that is part of the rescue procedure.



## 7.6 Pick One

*(Pick One, 10 points, unlimited attempts permitted)*

## 8. Rule #7 - Restricted Areas

### 8.1 Golden Rule #7 - Restricted Areas

# 07

## Restricted Areas



Never enter into production areas, tailings areas, electrical rooms / substations or any other restricted areas without authorization.

Operational Discipline

## 8.2 Safe Work Practices - Barricading in Surface Plants



### Golden Rule #7 – Restricted Areas

## Safe Work Practices - Barricading in Surface Plants

### Only enter areas you are authorized to be in.

- Work areas that present hazards should be restricted by being roped-off to prevent inadvertent entry by outside personnel.
- Permission should be obtained from Vale personnel before establishing a roped off area.



## 8.3 Safe Work Practices - Barricading in Surface Plants



### Golden Rule #7 – Restricted Areas

#### Safe Work Practices – Barricading in Surface Plants

**The following situations illustrate where barricading and roping off an area is necessary:**

- Personnel working above;
- Unsafe, deteriorating or slippery walkways;
- Unsecured structures;
- Danger of falling process material or other items overhead;
- Temporary removal of existing protection such as guards;
- Any opening in a floor, sump, vessel, bin or other surface that may create a falling hazard to a worker;
- To protect the immediate area where a critical injury has occurred;
- When leaving a Confined Space entrance unattended;
- To limit access to a hazard posed by work being done in the plant.





## 8.4 Safe Work Practices - Barricading in Surface Plants



### Golden Rule #7 – Restricted Areas

## Safe Work Practices - Barricading in Surface Plants

Use Yellow Caution Ribbon with Yellow “Roped off Area” Tag completed and affixed on all sides.

- Write your information LEGIBLY on all Tags
- Inform the Area Operator before installing the barricade. Remove when safe to enter.
- **Do not enter a roped off area unless you are authorized to do so!**



## 8.5 Pick One

*(Pick One, 10 points, unlimited attempts permitted)*

## 8.6 Safe Work Practices - Barricading in Surface Plants



### Golden Rule #7 – Restricted Areas

## Safe Work Practices - Barricading in Surface Plants

### Roped Off Areas

- Restricted areas must be barricaded using caution tape and a yellow barricading tag. If the barricade will be in place for longer than 1 day then a 3/8" yellow nylon rope must be used along with a yellow barricade tag.
- The barricade must prevent entry to the area from all access points.
- The tag should include the reason for the barricade, and describe the hazards in the area beyond the ropes. The tag should also include the contact information including phone number for the person who established the roped off area, and the date it was roped off.
- Entry must never be made to a restricted area without authorization from the group who established the roped off area. Workers must understand the potential hazards and the required controls to protect a person from harm if entry is approved.



## 8.7 Safe Work Practices - Barricading in Surface Plants



### Golden Rule #7 – Restricted Areas

## Safe Work Practices - Barricading in Surface Plants

### Roped Off Areas

- Depending on the nature of the hazard, additional precautions such as warning lights, signs, guards or permanent barricades may also be required.
- The person in charge of the last group performing work is responsible for the removal of the barricade when work is completed and the area is made safe to enter.



## 8.8 Safe Work Practices - Barricading in Surface Plants



### Golden Rule #7 – Restricted Areas

## Safe Work Practices - Barricading in Surface Plants

### Open Holes

- A barricade shall be installed a minimum of 3 meters back from an open hole situation.
- The minimum acceptable barricade in an open hole situation will consist of two guardrails or a single guardrail plus a worker who is attending the condition.
- **A single guardrail is a warning only and does not constitute protection from an open hole condition.**
- Note: 1/4" link chain or 3/8" polypropylene rope is the minimum acceptable standard material to be used for guarding open hole situations. This does not preclude the use of other materials on a temporary basis to guardrail a condition while the required materials are found and installed.




## 8.9 Pick One

*(Pick One, 10 points, unlimited attempts permitted)*

## 9. Rule #8 - Tools and Equipment

### 9.1 Golden Rule #8 - Tools and Equipment

	<h1>08</h1> <p>Tools and Equipment</p>	
	 <p>Never use improvised or faulty tools, machines or equipment to execute work.</p> <p>Operational Discipline</p>	

## 9.2 Equipment Protection & Guarding



### Golden Rule #8 – Tools and Equipment

#### Equipment Protection & Guarding

- Equipment and systems are not to be operated without safeguarding in place and in working order.
- Unless required and authorized to do so under controlled conditions, no one is allowed to remove or disable an equipment safeguard device.
- Where guarding has been removed to maintain a piece of equipment, a final check of all guarding should be made in order to ensure the equipment is safe to operate.
- Any guards that are modified or manufactured must be done with the permission of the operating groups, and be done in accordance with appropriate standards.



## 9.3 Proper Hand Tool Use



### Golden Rule #8 – Tools and Equipment

#### Proper Hand Tool Use

- Inspect all hand tools and hand held power tools before use.
- All hand tools should be operated with the supplied guards, shields and handles in place.
- Where appropriate both hands should be used to operate a tool.
- Electrical cords should be free of defects, and an electrical cord with a GFI circuit interrupter should be used whenever water or wet conditions are present.
- Face shields are required for cutting and grinding operations.
- Select the right tool for the job. Substitutes increase the chance of having an accident.



## 9.4 Open Blade Knives



### Golden Rule #8 – Tools and Equipment

#### Open Blade Knives

- Open bladed knives are not permitted at Vale Ontario operations except for designated personnel for designated activities.
  - Electrical Department
  - Employees working with explosives
  - Other trades that have been granted an exemption through General Safety
  - Cutting Snips and Shielded Blades are the preferred cutting tools and should be used whenever possible.
- If these tools cannot be used for the work you are performing, stop and discuss with your supervisor.





## 9.5 Struck Tool Safety



### Golden Rule #8 – Tools and Equipment

#### Struck Tool Safety

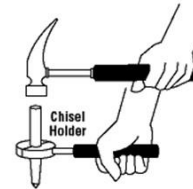
- Struck Tools include cold chisels, punches, nails sets, and wedges.
- Always use the correct tool for the job and tools in good condition.  
Discard broken and damaged tools.
- For chisels and chipping, use an angle that holds the bevel tip flat along the plane.
- Use tools with a rubber hand protector on the shaft of the tool.
- Never use cold chisels to break stone or concrete.
- NEVER hold a struck tool while another employee strikes the tool.
- NEVER use a flat screwdriver as a struck tool.
- ALWAYS wear proper eye protection (glasses or face shield).
- If trained, restore flattened points or mushroomed heads by grinding.
- Use a chisel tip angle of 70° for hard metal, 60° for soft metal.



#### CHISELS

- Never use a chisel with a mushroomed head, or a hammer with a damaged face.

- Wear eye protection.
- See diagram for safe way to hold a cold chisel.



## 10. Rule #9 - Risk Analysis

### 10.1 Golden Rule #9 - Risk Analysis

	<h1>09</h1> <p>Risk Analysis</p>	
	<p>Never perform any work without understanding the risks and comply with all required controls.</p> <p>Operational Discipline</p> 	

## 10.2 Risk Analysis



### Golden Rule #9 – Risk Analysis

#### Risk Analysis

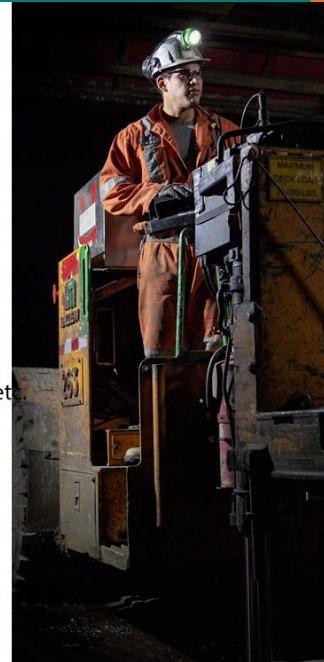
Never perform any work without understanding the risks and comply with all of the required controls.

Effective risk management is essential to the achievement of Vale's goal of zero harm.

Managing health and safety risks is an ongoing process.

Triggers for a risk assessment include:

- New facility or process
- Change in process, equipment, chemicals, work practices, procedures, etc.
- New hazard or risk is identified; new information about the workplace becomes available
- Responding to a workplace incident or concerns raised
- Required by legislation (ex. designated substances)
- Routine (daily) , prior to starting work



## 10.3 Risk Management Tools



### Golden Rule #9 – Risk Analysis

#### Risk Management Tools



**SLAM:** Is a field level risk assessment tool to help employees identify, understand and determine how to manage risk in their tasks. The intent of SLAM is to help employees identify, understand and determine how to manage risk in their tasks. For routine and relatively simple activities, an employee will use SLAM. If a worker is not confident that they can manage risk after completing SLAM, they must ask their supervisor for help.




**JHA:** A Job Hazard Analysis is a formal risk assessment that is performed by a worker(s), supervisor and joint health and safety representative. It is mandatory when faced with a non-routine task in an abnormal condition.



**Management of Change (MOC):** A process to identify and assess the hazards and risks related to changes made within the organization. Always conduct a management of change assessment before implementing any temporary or permanent change (to process, equipment or facility).

## 11. Rule #10 - Electronic Devices

### 11.1 Golden Rule #10 - Electronic Devices

	<h1>10</h1> <p>Electronic Devices</p>	
	 <p>Never use cell phones or any other device that can cause loss of focus in non-authorized operational areas, stairs and while crossing streets.</p> <p>Operational Discipline</p>	

## 11.2 Electronic Devices



### Golden Rule #10 – Electronic Devices



SPI-22

#### Radio Frequency Devices (RFD)

Any device that emits radio frequencies, including:


##### Consumer RF Device:

- Laptops/tablets
- Cell phones/mobile Internet devices
- Media players
- Bluetooth keyboards/headsets
- ***(that do not exceed 4 Watts)***
- ***Underground must not exceed 1 Watt***


##### Industrial RF Device:

- Two-way radios
- Remote control radios for mobile equipment
- Media players
- Any radio device used for process control

## Resume Training (Slide Layer)



### Golden Rule #10 – Electronic Devices



**Radio Frequency Devices (RFD)**  
Any device that emits radio frequencies, including:

**Consumer RF Device:**

- Laptops/tablets
- Cell phones/mobile Internet devices
- Media players
- Bluetooth keyboards/headsets
- (that do not exceed 4 Watts)*
- **Underground must not exceed 1 Watt**

**Industrial RF Device:**

- Two-way radios
- Remote control radios for mobile equipment
- Media players
- Any radio device used for process control

## 11.3 Electronic Devices



### Golden Rule #10 – Electronic Devices



Consumer RF Device

Consumer Electronic RF Devices can be used on Vale property, except in Radio Frequency (RF) Restricted Areas (as indicated by signage).

It is the user's responsibility to ensure their device meets the Consumer RF Device definition and is liable for non-compliance and incidents related to misuse.



## 11.4 Radio Protocol

### Safety Procedures – Radio Protocol



Industrial RF Device

Any Industrial RF Device (owned by Vale or a contracting company doing business with Vale) that is to be used on Vale property must be verified for use by the IT RF Department.

Contact the IT RF Department for more information.

## 11.5 Radio Protocol

### Safety Procedures – Radio Protocol

#### Radio Protocol

##### Radio Frequency Devices (RFD) General Information

- No hand held RFD's are to be operated while operating a vehicle.
- The use of RFD's is prohibited when fueling vehicles.
- Consumer RF Devices are not permitted for personal use in the workplaces with the exceptions of offices, lunchrooms or meeting rooms.
- When using a consumer RF device for business reasons in the operating environment, you must be stationary and aware of your surroundings to ensure that you are not compromising your own or another person's ability to operate in a safe manner.