

## Procedure

# Equipment Safeguarding

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## Key Control Data Sheet

Procedure Number: RSK-PRO-KCD-001

Scope of Application: Ok Tedi Mining Limited

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Document Owner: Manager – OHS & Training

**Why is the Control Important** — Risks involving moving equipment parts, ejected or flying objects and harmful equipment temperatures must be controlled by effective equipment guarding. This procedure applies to equipment, machines and tools with moving parts such as rotating equipment (pumps, agitators, augers, compressors, etc.), drilling machines, power saws and conveyors. It includes machines that could fail catastrophically and eject material, such as high-speed compressors. It also includes equipment designed to produce a potentially harmful discharge, such as a high-pressure water washer. The guarding may be physical in nature or may be part of an instrument, electrical or mechanical interlock system.

**Exemption** — No exemption permitted.

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## Equipment Safeguarding

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### Operational Requirements

#### 1. Performance Metrics

All equipment is safeguarded to prevent deliberate or accidental human contact with moving parts, ejected or flying objects, surfaces or materials at harmful temperatures and harmful discharges from an uncontrolled pressure release.	All forms of machine guards are registered.
All interlocks are part of a maintenance programme which includes full proof testing. Interlocks could be mechanical, electro-mechanical or electrical in nature.	Equipment is isolated and made safe before any guard is removed.
Equipment safeguarding is only removed or bypassed under a permit to work. This includes live testing.	Emergency-stop (E-Stop) controls are installed for all safeguarded equipment that can be stopped.
Emergency-stop (E-Stop) controls are accessible, visible and clearly identified.	Fail-safe or dead-man switches or devices are installed on all manually operated rotating equipment and power hand tools.

#### 2. Utilisation

All plant and equipment must be protected to, prevent deliberate or accidental personal contact with moving parts, dangerously hot/cold surfaces or materials or flying objects (as a result of normal operation or failure).

#### 3. Safety Critical Defeat Requirements

Equipment safeguarding, on operating equipment, is only removed or bypassed under a permit to work. This includes when there is a need to complete live testing with the guards removed.

#### 4. Testing & Verification

Guarding of existing machinery must be assessed against a recognised guarding standard by a competent engineer at least every 3 years and action must be taken to bring all machinery into compliance with a recognised national standard.

This assessment must be documented, and an action plan must be generated.

All interlocks must be fully proof tested, at least annually. This includes emergency stop controls. Proof testing procedures must be reviewed and authorised by the Responsible Engineer.

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### 5. Maintenance

All equipment safeguards must be inspected and maintained to ensure their integrity. Maintenance teams must NOT remove safeguards until after equipment isolation has been completed and must reinstall safeguards before putting equipment back into service and isolations removed.

### 6. Training & Competency

Personnel must be trained in the hazards of the equipment they manage or operate, or that could cause them injury, and the requirements for safeguarding.

Competent persons must design, maintain and repair equipment safeguards.

Proof testing of interlocks must be done by competent persons.

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### Task Requirements

The following are the key day to day requirements operators/maintainers and supervisors must follow to ensure the control is being used correctly.

#### 1. Task Requirements

No.	Supervisor	Operator/Maintainer
1	Maintain a register of all equipment safeguards, their inspection and testing records.	Verify equipment safeguards are in place and in good condition during pre-start inspections.
2	Arrange for resources to complete maintenance and required proof testing at the defined frequency.	Do not operate equipment with missing or faulty guards.
3	Arrange to effect repairs or replacement of defective, damaged or otherwise faulty equipment safeguards.	Report any missing or faulty safeguards immediately to their supervisor.
4		Isolate equipment before working on or near equipment without the safeguards in place.
5		Remove all entanglement hazards (e.g. loose clothing, scarves, etc.) from the equipment work area.
6		Inspect safeguards after maintenance and before closing out the permit to work.

#### 2. Skills Requirements

No additional requirements.

#### 3. Permits

No additional requirements.

#### 4. Task Specific PPE Requirements

No additional requirements.

#### 5. Special Task Related Tooling

No additional requirements.

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### Design Requirements

#### 1. Design Standard

Equipment safeguards must be designed, constructed, installed, maintained and inspected in accordance with AS4204 - Safety of Machinery.

Responsible Engineers must ensure all equipment safeguards are appropriately designed and constructed.

#### 2. Safety Parameters

Emergency-stop (E-Stop) controls must be installed for all safeguarded equipment that can be stopped. E-Stop controls must be accessible, visible and clearly identified.

Fail-safe or dead-man switches or devices must be installed on all manually operated rotating equipment and power hand tools.

#### 3. Design Life

Not applicable.

#### 4. Safe Separation

Not applicable.

#### 5. Special Requirements

Equipment safeguarding must be selected in the following order of priority:

- a) A permanently fixed physical barrier must be used where no part of a person requires access to the dangerous area during normal operation, maintenance or cleaning.
- b) An interlocked physical barrier must be used where access to dangerous areas is required.
- c) If fixing a guard in accordance with (a) or (b) is not practicable, a physical barrier must be securely fixed in position with fasteners or other suitable devices, so that the guard can only be altered or detached by using a tool or key.
- d) If fixing a guard in accordance with (a), (b) or (c) is not practicable, a presence-sensing safeguarding system must be provided.