

Group Standard

C6 – Cranes and lifting

Group standard	Title: Cranes and Lifting			
	Function: Health, Safety, Environment and Communities (HSEC)			
	No. of Pages: 4			
	Approved : 21 January 2015	Effective: 1 April 2015	Supersedes: C6- Cranes and lifting (2008)	Auditable From: 1 April 2015
Owner: Global head of Health, Safety, Environment and Communities		Approver: Executive Committee		Target Audience: All Rio Tinto staff and each Rio Tinto Group business and function
Direct Linkages to other relevant Policies, Standards, Procedures or Guidance notes: Rio Tinto management system standard, C6 – Cranes and lifting guidance note				
Document purpose: To support implementation of the Group Safety policy by providing the minimum requirements for preventing injuries and fatalities in spaces that are enclosed, partially enclosed, not intended as workspaces or where a risk of entrapment has been identified.				

C6 – Cranes and lifting

Intent and scope

This standard applies to employees and contractors working at all Rio Tinto business units and managed operations, through all stages of their lifecycle from exploration through to closure.

This standard applies to use of all cranes, lifting and rigging equipment either owned by Rio Tinto or hired through a contract or contracting company, including equipment used as cranes.

This intent is to prevent injuries and fatalities from:

- loads colliding with people, plant and other structures,
- lifting devices becoming unstable or overturning, and
- failure of cranes and lifting equipment.

Control requirements

Requirements in this standard apply in addition to any defined in the Rio Tinto Management System. At all times, the elimination of risk is the priority.

Planning

- 1.1. Each operation must have a process for assessing and controlling all lifts.
- 1.2. Each operation must develop a documented plan for each critical lift to address the associated hazards. Critical lifts include all multiple crane lifts; lifts over operating facilities where this may endanger personnel; lifts over power lines; lifts involving personnel cages; and lifts at maximum rated loads. The lift plan must include:
 - a) lift data: equipment weight, rigging weight, total weight, height of lift, radius of lift and equipment surface area, centre of gravity,
 - b) equipment data: manufacturer, model, size, boom length, jib length, load block, material size,
 - c) rigging data: sling diameter, length, sling configuration, capacity, hook type, shackle size and capacity,
 - d) lift computation: boom length, radius of lift, equipment capacity, size of outrigger footplates, and wind speed,
 - e) proximity to power lines and process areas: cranes working in proximity to energised overhead power lines must have insulated lifting links and operate under a proximity permit which defines exclusion zones and spotter duties, and
 - f) local hazards and their controls: including the route for the crane, ground stability, proximity of people or equipment and agreed communication method.
- 1.3. Crane drivers and rigging crews involved in critical lifts must have input into the lifting plan.
- 1.4. Where the weight of a lift is uncertain and could exceed the working load limit of the crane, the crane must be fitted with a load cell with the weight of the load displayed and visible to the operator.
- 1.5. All new company owned or leased/hired cranes must be equipped with an anti two- block device or limit switch.

Implementation and operation

- 1.6. There must be a process that ensures all critical components are inspected and in place prior to a crane being commissioned and put into service.
- 1.7. Operators must undertake a pre-operational safety check for each shift the crane or lifting equipment is used and this must be kept with the equipment:
 - a) pre-operational safety checks must be based on a risk assessment for the equipment that identifies defects that the crane must not be operated with, and
 - b) cranes and lifting equipment must not be operated with an inoperable or defective safety device.
- 1.8. There must be a procedure that:
 - a) requires all rigging connections to be checked and correct prior to commencing a lift,
 - b) checks that the load being lifted is within the rated capacity of the crane and lifting attachments and is also within the limits set out in the lift plan, and
 - c) checks all safety devices or overload limiters to ensure they are not overridden or cut out.
- 1.9. All lifting hooks (except for grab and chain shortening hooks) must be fitted with a safety latch to prevent the load from accidentally detaching, unless otherwise specified in a risk assessment.
- 1.10. No person must be under a suspended load or in a position where they can be struck by a falling load. Barricading or similar controls to prevent access to the fall zone must be in place.
- 1.11. The operator must not leave the crane controls while a load is suspended.
- 1.12. Overhead travelling cranes must be fitted with audible alarms or an equivalent warning device for all directions of travel. The warning device must be operated where there is the potential for interaction between people or vehicles.
- 1.13. Where loads require steadying or guiding, controls must be implemented to prevent the load striking personnel.
- 1.14. There must be a documented method for communication between the crane driver and those assisting with the lift.
- 1.15. A process must be in place to prevent the use of lifting or rigging equipment in lifting operations if such equipment has been used for towing.
- 1.16. Cranes must have a rating capacity chart or equivalent, available to the operator.
- 1.17. Operator control stations for vehicle-mounted cranes must be located in an area protected from swinging loads and from the crane jib.
- 1.18. Cranes must not be able to slew inadvertently while travelling.

- 1.19. Slewing to test the integrity of outriggers on mobile cranes and lifting devices must be conducted prior to operation.

Monitoring

Maintenance and inspection

- 1.20. All lifting and rigging equipment must be inspected prior to use.
- 1.21. A register of cranes, hoists, rigging attachments, slings (greater than a one tonne rating), chain blocks and lever hoists must be established and maintained. Although all shackles, eye bolts and bolt on lifting lugs are not required to be on the register, they must be supplied with the manufacturers load rating.
- 1.22. Cranes and lifting equipment brought to site must be inspected and certified for use in accordance with regulatory and manufacturer requirements.
- 1.23. There must be a process for the inspection and maintenance of cranes and lifting equipment that verifies that it functions to its design specifications and manufacturers requirements.
- 1.24. Inspections and repairs to cranes, cables and lifting equipment must comply with the manufacturer's specifications and regulatory requirements as a minimum.
- 1.25. Records of maintenance inspections and cable tests must be kept.

Competency

- 1.26. There must be a process for personnel to be deemed competent and authorised to:
- a) operate each class of crane and lifting equipment,
 - b) set-up or rig loads,
 - c) provide signals for controlling lifts, and
 - d) inspect, maintain or test cranes and/or lifting equipment.