



# GROUP SAFETY STANDARD 6 CRANES AND LIFTING OPERATIONS

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## 1. INTENT

This standard details the requirements to minimise and control the hazards associated with lifts using cranes and lifting equipment and with the lifting of personnel.

## 2. APPLICATION

This standard shall apply to all IGO sites and exploration, construction and development projects (hereafter referred to collectively as 'sites') and to all IGO employees and contractors. All IGO sites comply with the provisions of this standard, and all relevant legislative requirements for the location.

Where the contractor has an existing process that meets or exceeds the requirements of this standard, the contractor may request authorisation from IGO to use their process in lieu of those outlined in this standard.

Where this standard identifies design standards, codes of practice, and Australian and New Zealand Standards, IGO's international sites shall ensure recognised industry standards relevant to their location meet or exceed the minimum requirements established through this standard and applicable legislation for their jurisdiction.

**Note:** For information on Elevated Work Platforms (EWPs), Integrated Tool Carrier (ITC) mounted work platforms and similar devices (i.e. any equipment combination that is functionally equivalent with the definition of an EWP as defined in Australian Standard Australian Standard AS 1418 Cranes, hoists and winches), refer to **IGO GSS 9 – Traffic, Road Travel & Mobile Plant Management**.

**Note:** For information on Traffic management, refer to **IGO GSS 9 - Traffic and Road Travel Management**.

## 3. CRANES ON IGO SITES

It is the responsibility of the IGO employee hiring, buying or otherwise mobilising a crane (e.g. as part of a service contract) to an IGO site to take reasonable steps to confirm that the crane; a) conforms with the law and applicable Australian Standards (or equivalent), b) conforms with this standard and **IGO GSS 9 – Traffic and Mobile Plant Management**, c) is fit for its intended purpose d) is captured in the site's Mobile Plant Register and e) Lifting equipment captured in the site's Lifting Equipment Register. In making this assessment, the employee shall consult with the site's 'designated competent person' for the mobile plant (refer to **IGO GSS 9 – Traffic and Mobile Plant Management**) if they are in doubt. This assessment must be completed before the crane is mobilised to site.

See Appendix 1 for IGO specifications for cranes and lifting equipment.

## 4. LIFT PLANNING

The use of cranes and lifting equipment for heavy and difficult lifts or for the lifting of personnel in a work box shall be conducted under the control of a lift plan (or equivalent work permit system). Procedures for lift plans shall include:

- lift planning be undertaken by competent personnel including involved workers
- undertaking risk assessments to assess the hazards arising from the lift and to determine whether a generic lift plan can be used (routine lift) or a specific lift plan needs to be developed (non-routine lift)
- identifying and documenting controls including lifting procedures and checklists
- pre-lift inspection, test and checklist requirements



- communication methods, language, protocols, pre-lift meetings etc.
- identification of the lift team member competencies
- processes for verifying lift plans and risk assessments particularly for non-routine lifts
- ensure lift load is fully secure and load mass verified within plant and equipment's Working Load Limit.

## 5. STANDARD WORK PROCEDURES

Standard work procedures, operating manuals and load charts shall be supplied by the crane and lifting equipment manufacturer or supplier as part of the compliance documentation provided with the purchase or hire of the equipment.

Safe Work Procedures and safe systems of work shall be developed and implemented for all relevant tasks and areas related to the operation and maintenance of the cranes and lifting equipment. Standard Work Procedures developed must:

- comply with the information provided by the manufacturer/supplier
- detail the controls required for the hazards identified during risk assessment processes including those arising from lifts:
  - where a person can fall more than two (2) metres
  - of personnel in a work box/ man cage
  - carried out on or near energised electrical installations or services
  - near operating mobile plant
  - involving multiple cranes
  - where there is potential for loads to be suspended over or travel over a person
  - inclement weather conditions
- detail the requirements to designate a person to be in charge of having operational control of the lift (see Appendix 1 for critical practice requirements)
- detail the requirements for carrying out the lifting operations and controlling the load
- detail the required use of barricading, warning signs or other means of ensuring personnel and infrastructure protection during lifting operations and for when cranes are left unattended in wind vane mode
- detail the design and testing requirements for load points in underground situations
- detail the requirements for the reporting of damage or faults and the immediate shut down and tag out of unsafe equipment.
- a direct link shall be established between standard operating procedures and competency training and assessment materials

## 6. LIFTING EQUIPMENT

Sites shall maintain a **Lifting Equipment Register** and all lifting equipment (such as slings, shackles, chains, chain blocks etc.) shall be entered into the register. Manufacturer specifications for cranes and lifting equipment shall be accessible at the site.

Systems shall be in place to ensure that lifting equipment is checked prior to first use at the site to ensure that:

- it meets design requirements and is labelled with relevant information such as Australian Standard markings, its rated capacity, chain size etc.
- limiting and indicating devices are visible to the operator

- it is fit for purpose and is uniquely identifiable
- it has a method of identifying the date it was last formally inspected (e.g. Tag, colour marking etc.).

**Note: All lifting hooks must be fitted with a safety latch to prevent the load from accidentally detaching.**

Systems shall also be in place to ensure that lifting equipment is:

- stored in accordance with manufacturer's specifications
- inspected pre-use and during use by a competent person to ensure that it is not damaged and is appropriate for the loads being lifted
- marked or tagged to identify the date of the lifting equipment's last formal inspection
- calibrated on a regular basis (for load limiting and indication devices).

## **7. MAINTENANCE, INSPECTION, TESTING AND CERTIFICATION**

General requirements for maintenance, inspection, testing and certification is addressed in **IGO GSS 9 – Traffic and Mobile Plant Management**.

Inspections and tests must include the checking of crane and lifting gear items in accordance with appropriate Australian Standards (or local industry equivalent), design specifications and the Original Equipment Manufacturer's Guidelines for:

- major inspection (e.g. completed for all cranes every 10 years)
- plant re-registration
- annual inspection
- commissioning inspection and tests
- routine inspection and maintenance
- pre-operational inspections.

If a fault is identified which may compromise the safety of any lifting plant or equipment, the operation must not commence until the fault has been rectified. A process must be established to remove faulty equipment from service.

## **8. TRAINING AND COMPETENCY**

General requirements for training and competency assessment for the use of cranes and mobile plant is addressed in the **IGO GSS 9 – Traffic and Mobile Plant Management**.

A system shall be implemented to ensure the following personnel have the necessary skills, qualifications, competence and experience to perform the required tasks:

- personnel required to carry out dogging and/or rigging
- personnel required to carry out maintenance, inspection and testing on cranes
- personnel required to inspect, maintain or test a specific part of a crane for the engineer as part of a major inspection
- personnel required to carry out periodic inspection of lifting gear and equipment
- dedicated spotters for an EWP operation.

**Note: EWP spotters must hold the relevant High-Risk Work license and competency for the equipment being attended in order to operate the ground controls in an emergency.**



## 9. RECORDS

General records requirements are addressed in ***IGO GSS 9 – Traffic and Mobile Plant Management***.

Record keeping procedures in relation to cranes and lifting equipment shall include:

- records as required for the crane as a piece of plant, including those relating to modifications
- retention of lifting gear test certificates
- information regarding damage and repairs
- maintenance and availability of routine, annual and major inspections and test reports.
- documentation stating that the crane has been inspected by a competent person, and is in a safe and satisfactory condition, should be readily available upon request.

## 10. RELATED DOCUMENTS

### 10.1 Common Management System Standards

- CMSS 3 - Risk Management
- CMSS 6 - Training & Competency
- CMSS 12 - Management of Change

### 10.2 HSES Standards, Procedures and Guidelines

- IGO GSS 9 – Traffic & Mobile Plant Management
- IGO GSS 14 - Defined Hazardous Work and Permit to Work
- IGO GSS 19 - Electrical Safety
- IGO Safety Risk Management Procedure

### 10.3 External Standards

- AS/NZS 1418: Cranes, hoists and winches-Mobile cranes (EN 13000:2010, MOD)
- AS2550: Set 2011 hoists and winches safe use set

## APPENDIX 1: CRANES AND LIFTING EQUIPMENT

Sites and projects shall maintain a **Lifting Equipment Register** and all lifting equipment (such as slings, shackles, chains, chain blocks etc.) shall be entered into the register. Manufacturer specifications for cranes and lifting equipment shall be accessible at the site.

Item	Requirement	Requirement Notes
Cranes	Specifications	<ul style="list-style-type: none"> <li>shall comply with <b>AS 1418 (series)</b> and <b>AS 2550 (series) Cranes, hoists and winches</b></li> <li>are fitted with operational anti-freefall devices (auto troll or similar)</li> <li>air-conditioned operator cabins.</li> </ul>
	Documented Records	<ul style="list-style-type: none"> <li>all cranes must be registered with Work Safe Australia and display a work safe registration number (premobilisation requirement)</li> <li>shall be recorded site Classified Plant Management Record Book</li> <li>must be maintained in accord with OEM instructions</li> <li>copy of the crane's Operators Manual and applicable Load Charts are present in the crane operator's cabin.</li> </ul>
	All cranes except: <ul style="list-style-type: none"> <li>vehicle loading cranes</li> <li>earthmoving machinery used as a crane</li> <li>non-slewing cranes with a maximum rated capacity of 20 tonnes or less</li> </ul>	Must be fitted with external rated capacity indicator lighting and audible alarms: <ul style="list-style-type: none"> <li>green, amber and red lights to indicate the percentage of the crane's rated capacity being lifted</li> <li>audible alarms to sound inside and outside the crane if the load being lifted exceeds 100% of the cranes rated capacity.</li> </ul>
	Lifts on two (2) hooks	<ul style="list-style-type: none"> <li>under no circumstances can independent loads be lifted on two hooks at the same time</li> <li>one crane shall not lift on two hooks at the same time unless a risk assessment has been undertaken and there is written confirmation from the manufacturer that the lifting method is within the design criteria of the crane and does not compromise and safety or integrity of the crane.</li> </ul>
	Outriggers	<ul style="list-style-type: none"> <li>placed in accordance with the manufacturer's recommendations</li> <li>shall be of an appropriate size to ensure the stability of the crane in all lifting operations and adequate for the prevailing ground conditions</li> <li>must be visually inspected and the ground integrity determined to ensure it has been properly set to the ground.</li> </ul>
	Drums	<ul style="list-style-type: none"> <li>not be used for lifting tools, fittings or other material unless fitted into an approved drum lifter</li> </ul>
	Rubbish skips	<ul style="list-style-type: none"> <li>only be used for the collection of rubbish and waste and are not to be used as a substitute Materials Box</li> <li>under no circumstances are these units to be hoisted using the existing lugs as lifting points unless the lugs are specifically designed for lifting purposes, a lifting test certificate is available for each lug, and the skip is registered on the lifting equipment register.</li> </ul>

Item	Requirement	Requirement Notes
	Bridge and Gantry Cranes	<ul style="list-style-type: none"> <li>● crane controls should:               <ul style="list-style-type: none"> <li>– have ‘fail-safe’ control buttons e.g. constant pressure type</li> <li>– have function buttons appropriately labelled</li> <li>– be fitted with a manually reset emergency stop button.</li> </ul> </li> <li>● lockable isolation switches</li> <li>● interlocking devices</li> <li>● appropriate safety devices (e.g. anti-collision, deceleration, load limiting, anti-fall devices etc.)</li> <li>● Radio, microwave and infrared controls should only allow operation from safe viewing or designated areas.</li> </ul>
Critical Practices	Lifting operations	<p>The following critical practices shall be applied:</p> <ul style="list-style-type: none"> <li>● lifting appliance operator shall obey an emergency stop signal at all times, no matter who gives it</li> <li>● load to be lifted (including lifting accessories) shall be confirmed as within the rated capacity of the lifting equipment and attached by means of suitable lifting accessories</li> <li>● the operator of the lifting appliance shall not leave the operating controls while the load is suspended</li> <li>● no one is positioned under a suspended load or between suspended/lifted load and fixed objects.</li> </ul> <p>Note (1) This does not include personnel involved in rigging loads with spreader frames and bars; in this instance, a JSEA shall be completed to ensure adequate management of risks</p> <ul style="list-style-type: none"> <li>● operators shall never move a load directly over people</li> <li>● personnel shall have an escape route in case of unexpected movement of the load or equipment.</li> <li>● Riggers and dogman must keep their load in sight and maintain a travel path clear of people and obstacles</li> </ul> <p>Note (2) If tag line needs to be attached to the load it must be long enough to keep personnel out of the exclusion zone and be used to orientate the load as required (unless a risk assessment can demonstrate otherwise)</p>
Lifting Equipment	Systems shall be in place to ensure that lifting equipment is checked prior to first use at the site	<p>To ensure:</p> <ul style="list-style-type: none"> <li>● it meets design requirements and is labelled with relevant information such as Australian Standard markings, its rated capacity, chain size etc.</li> <li>● limiting and indicating devices are visible to the operator</li> <li>● it is fit for purpose and is uniquely identifiable</li> <li>● it has a method of identifying the date it was last formally inspected (e.g. Tag, colour marking etc.).</li> </ul>
	Systems shall also be in place to ensure ongoing care and maintenance	<p>To ensure:</p> <ul style="list-style-type: none"> <li>● stored in accordance with manufacturer’s specifications</li> <li>● inspected pre-use and during use by a competent person to ensure that it is not damaged and is appropriate for the loads being lifted</li> <li>● marked or tagged to identify the date of the lifting equipment’s last formal inspection.</li> <li>● calibrated on a regular basis (for load limiting and indication devices).</li> </ul>



Item	Requirement	Requirement Notes
	Recertification requirements	Equipment that has been involved in any of the following shall be withdrawn from use prior to recertification: <ul style="list-style-type: none"><li>• an incident results in material damage to plant or vehicle</li><li>• overload of plant or vehicle beyond rated capacity</li><li>• subject to material modification or repair</li><li>• material changes in the condition of use</li><li>• as required by law or industry as an accepted practice.</li></ul>
	Quick Hitch Devices	<ul style="list-style-type: none"><li>• Refer to requirements addressed in <b><i>IGO GSS 9 – Traffic, Road Travel &amp; Mobile Plant Management</i></b></li></ul>