



## CRANES AND LIFTING

### PURPOSE AND SCOPE

The intent of this document is to eliminate or minimise the risks of fatalities, injuries and events arising from the use of cranes and lifting equipment at Laing O'Rourke workplaces.

### 1.0 CRITICAL CONTROLS

The following mandatory Critical Controls when implemented reduce the risk of Fatal and Severe Risks (FSR). The following Critical Controls apply to work involving cranes and lifting:

- A Crane Appointed Person is in place
- A Crane Supervisor is appointed
- A Crane Lifting Plan in place
- Temporary works, stability and ground bearing pressure are verified for crane use (including suspended slabs/floors)
- Coordination arrangements are in place to effectively manage multiple crane operations
- Cranes and lifting equipment are inspected and certified before mobilisation and use
- Soft slings are not used (see Section 4 for exceptions and dispensation)
- Personnel involved in lifting operations are trained and competent
- Lifting operations are effectively planned and managed
- Plant is operated in a safe manner
- Lifting gear is certified and fit for use
- A tower crane anti-collision system is operational where there is radius overlap

Refer to the **FSR Control Assessment Tool** for the criteria that apply to the above Critical Controls.

### 2.0 STANDARD CONTROLS

Standard Controls support the Critical Controls, providing a measure of compliance with the relevant Primary Standards.

- Earthmoving equipment is used as a crane only under the following conditions:
  - Plant assessed and approved for lifting operations (load charts, SWML on dipper arm, hose burst valves, closed rated lifting points, level indicators, and rated by OEM to operate as lifting device)
  - No high risk lifting
  - All loads must be slung by a competent person (CN, INT RB, INT DG)
  - Dogman or Riggers in place if the operator is unable to see the load at all times
  - Operator has a VOC for the excavator when configured for crane operation.

### 3.0 ADDITIONAL LOCAL CONTROLS

Local Controls support the Critical Controls, providing a measure of compliance with the relevant Primary Standards.

- A lifting operations plan must be in place, developed by the appointed person with reference to the relevant guidance material which describes in detail the business and project specific requirements for lifting operations
- A schedule of common lifts must be developed as part of the lifting operations plan for regular non-high risk lifts
- Lifting Operations are to be undertaken in accordance with the Lifting Operations Plan, Schedule of Common Lifts or specific lift plan / analysis as approved by the Appointed Person
- A lift analysis must be developed for all non-high risk lifts not covered by the schedule of common lifts
- Coordination meetings must be held for lifting involving multiple cranes
- Free-fall functionality must be deactivated on cranes with free-fall capability
- A tower crane anti-collision system must be operational where there is radius overlap
- All plant used for lifting activities must undergo the pre-mobilisation process as per PS Plant and Equipment and be approved for lifting by the Appointed Person
- Earthmoving equipment is only used as a crane when plant is assessed and approved for lifting by the appointed person, there is no precision lifting required, loads are slung by a competent and licensed Dogman and the operator has a VOC for lifting operations
- All load movements must be controlled by a competent and qualified person
- Crane Supervisors must be inducted into the lifting operations plan by the Appointed Person
- Crane Operators and persons responsible for controlling load movements must be trained in the schedule of common lifts by the Appointed Person
- Positive communications between crane operators and ground crew must be maintained and backup communications available
- Barricading and exclusion zones with clear signage must be in place for all lifting activities undertaken by mobile cranes, earthmoving equipment
- Tower cranes must have a plan implemented to prevent persons working under lifted loads
- No articulating mobile cranes to be used
- A SWMS must be in place for all lifting operations

## 4.0 SOFT SLING DISPENSATIONS

The use of soft slings is not permitted on Laing O'Rourke projects. In instances where specialist works, equipment or lifts justify their use an approved dispensation must be in place. In the instances where an approved soft sling dispensation is in place the following applies:

- Soft slings must be made from polyester or nylon and be fit for purpose in accordance with the relevant Australian Standards
- Slings must have the appropriate tag record attached and be inspected prior to use as per the agreed inspection program
- All lifting and rigging activities involving soft slings must be carried out in accordance with the relevant Lift Study/Analysis and safe work method statement (SWMS)
- On completion of the work/lift, soft slings must be removed from the work area and securely stored.

**Section 4.1 to 4.6** outlines a number of specific activities and tasks where a soft sling dispensation for this activity is in place.

For all other activities that require the use of soft slings due to the specialist nature of the works or equipment and fall outside of the defined dispensations, a formal dispensation request is required to be submitted and approved by the Delivery Director, by utilising the **FSR SER Critical Control Dispensation Approval Form** in conjunction with the **Soft Sling Dispensation Form**.

- All approved dispensations must be submitted to Central HSEQ ([centralhseq@laingorourke.com.au](mailto:centralhseq@laingorourke.com.au))
- Central HSEQ will maintain a register of approved soft sling dispensations and incorporate these into corporate HSEQ project audits

### 4.1 OVERHEAD WIRING (OHW) & TRANSMISSION LINES (TML)

- Due to the specialist nature of the rigging activities associated with OHW and TML works the use of soft slings is permitted subject to the following clarifications:
  - The slings are used specifically for OHW and TML rigging operations **ONLY**
  - The slings are used for tensioning and de-tensioning operations **ONLY** – no direct vertical lifting operations.

### 4.2 MILD STEEL CEMENT LINED (MSCL) PIPEWORK AND SIMILAR PRODUCTS

- Due to the specialist nature of the rigging activities associated with the Installation of MSCL and similar product pipework and the specialist nature of the coatings / compositions of these products, the traditional lifting devices such as chains can cause damage to their surface treatment or structural integrity. The use of soft slings for MSCL and similar pipework is permitted subject to the following clarifications:
  - The manufacturer specifies the use of soft slings, and does not allow for/warranty the use of chains
  - Only Flat webbed synthetic slings are used to lift the pipe
  - The slings are used specifically for the pipework rigging operations **ONLY**.

### 4.3 HYDRAULIC CYLINDERS/RAMS & HYDRAULIC PUMPS

- Lifting activities associated with hydraulic cylinders, rams, and pumps, using lifting devices like chains/wire ropes, may cause damage to hydraulic components may be caused, surface finishes, and increase the risk of uncontrolled movement. The use of soft slings for these items is permitted by Select Plant Australia subject to the following:
  - Endless Round Slings shall be used for the lifting, installation, and removal of hydraulic cylinders, rams, and pumps **ONLY**
  - The slings must be used in a choked configuration to prevent slipping and enable controlled lifting
  - Use of soft slings will be risk assessed, and lift study completed
  - Soft slings must be managed and consider age, serviceability, and WLL (Working Load Limit).

#### 4.4 TELEHANDLER BOOM SECTION REMOVAL & REPLACEMENT

- When removing and replacing telescopic boom sections, the use of chains or wire ropes may cause damage to components and increase the risk of uncontrolled movement. The use of soft slings for these activities are permitted by Select Plant Australia subject to the following:
  - Endless round slings may be used for the removal and replacement of telehandler boom sections **ONLY**
  - Slings must be secured in a choked configuration to prevent shifting or slippage during the lift
  - The soft sling dispensation is only applicable to boom section removal and replacement and is not to be extended to other telehandler lifting tasks.

#### 4.5 LIFTING OF LATTICE SECTIONS (CRAWLER CRANE BOOM SECTIONS, TOWER CRANE JIB SECTIONS, MOBILE CRANE FLY SECTIONS)

- When removing and replacing certain crane lattice section, the use of chains or wire ropes may cause damage to components and compromise structural integrity via point loading. The use of soft slings for these activities are permitted by Select Plant Australia subject to the following:
  - This is strictly restricted to:
    - Crawler Crane Boom Sections
    - Tower Crane Jib Sections
    - Mobile Crane Fly Sections
  - Soft slings shall only be used for lifting jib/boom sections. All other crane build, dismantling, and handling activities must use chain slings
  - Soft slings must have a **minimum 10t capacity and 6m length** to ensure adequate load-bearing capacity for all lattice boom lifts.

#### 4.6 LIFTS REQUIRING ELECTRICAL INSULATION

- Crane activities where insulation between the load and crane is required, lifting components like chains, may introduce conductivity risks that have the potential to compromise crane safety systems. This includes works near overhead power lines, welding from a crane, or where radio frequency (RF) induced current may be present. The use of soft slings for these activities are permitted by Select Plant Australia subject to the following:
  - Use of soft slings will be risk assessed, and lift study completed.

## 5.0 ROLES AND RESPONSIBILITIES

Table 1 Cranes and Lifting Roles and Responsibilities

ROLE	RESPONSIBILITIES
RELEVANT OPERATIONAL DIRECTOR	<ul style="list-style-type: none"> <li>Granting or denying approval for the use of soft slings on a case-by-case basis. Requests for an exemption must be supported by advice from the relevant Appointed Person. Delegation of Authority for soft sling dispensation is not permitted.</li> </ul>
PROJECT LEADER/WORKPLACE MANAGER	<ul style="list-style-type: none"> <li>Holds overall responsibility for lifting operations on the project under their control</li> </ul>
APPOINTED PERSON	<ul style="list-style-type: none"> <li>Responsible for all lifting operations within the scope defined by the Project Leader and for development, review and maintenance of the lifting operations plan. The Appointment shall be in writing using the pro-forma within the lifting operations plan.</li> <li>A Laing O'Rourke employee who holds a CPCS Appointed Person, or NPORS Appointed Person certificate or equivalent must be in place to act as the primary Appointed Person</li> </ul>
CRANE SUPERVISOR	<ul style="list-style-type: none"> <li>Is appointed by the Appointed Person to ensure lifting activities are carried out in accordance with the lifting operations plan. The Appointment shall be in writing using the pro-forma within the lifting operations plan.</li> <li>Is a competent person who must hold either the same qualifications as an Appointed Person, or hold one of the following qualifications:           <ol style="list-style-type: none"> <li>1) A National License to Perform High Risk Work for crane operation Class C6 or above, or</li> <li>2) A Crane Supervisor qualification issued by Crane Supervisor &amp; Appointed Person (Lifting Operations - CTI Course); or NPORS (National Plant Operators Registration Scheme) or equivalent qualification verified by Laing O'Rourke, or 3) A National License To Perform High Risk Work Class Intermediate Rigging (RI) or above</li> </ol> </li> </ul>
COMPETENT AND QUALIFIED PERSONS	<ul style="list-style-type: none"> <li>Competent Person is a person who has acquired through training, qualification or experience the knowledge and skills to carry out a task.</li> <li>Qualified Person is a person who holds a National License to Perform High Risk to undertake Scheduled Work as required by the relevant Regulatory Authority, and has had their competency verified via the application of a VOC assessment process.</li> </ul>

## 6.0 REGULATIONS, CODES AND STANDARDS

Key Regulations, Codes of Practice and Guidelines are as follows:

- Work Health and Safety Regulation 2011 (QLD, ACT), 2012 (SA) and 2017 (NSW, NT) Part 3.1 (regs 32–38) Division 3.2.1 (reg 39), regs 206, 214, 215, 219, Division 6.3.2 (regs 299–303, and Reg 235 Major Inspection of Registered Mobile Cranes and Tower Cranes)
- Work Health and Safety (General) Regulation 2022 (WA) Part 3.1 (regs 32–38) Division 3.2.1 (reg 39), regs 206, 214, 215, 219, Division 6.3.2 (regs 299–303, and Reg 235 Major Inspection of Registered Mobile Cranes and Tower Cranes)
- Occupational Health and Safety Regulations 2017: Reg 3.3.7, 3.3.8, 3.3.9, Part 3.5, Plant, Reg 3.5.40, 3.5.50, Part 6.2, Part 2 of Schedule 2, Schedule 3 Part 1 (VIC)
- SafeWork Australia Managing the Risks of Plant in the Workplace Code of Practice
- SafeWork Australia National Standard for Licensing Persons Performing High Risk Work
- Mobile Crane Code of Practice (QLD)
- AS 2550.1 Cranes, Hoists and Winches – Safe Use – General Requirement' and the series of AS 2550 as they relate to the crane type
- AS 1418.1 Cranes Hoists and Winches – General Requirements and the series of Australian Standards AS 1418 as they relate to the crane type.

## 7.0 ADDITIONAL INFORMATION

For additional information on cranes and lifting, see the following

- HSE Information Sheet – Floor Mounted Mini-Cranes
- Select Safe Operation of Cranes publication.

## 8.0 PLANS, FORMS AND TEMPLATES

For relevant plans, forms and templates below see the Laing O'Rourke HSEMS at [www.lorhsems.com](http://www.lorhsems.com).

- Lifting Operations Plan Template
- Crane Lift Analysis Template
- Crane Lift Study Plan Template
- Critical Lift Plan Template
- Lifting Categories and Associated Approvals
- Crane Work Box Permit
- Earthmoving Lifting Suspended Loads Approval
- Appointed Person for Lifting Operations Template
- Appointed LOR Crane Supervisor Template
- Crane Team Meeting Agenda Template
- Soft Sling Dispensation Approval
- Lifting Operation Assessment Part 1
- Lifting Operation Assessment Part 2
- Lifting Operation Assessment Truck Mounted Crane