SafeWork NSW

NSW GOVERNMENT

Findings report

Tower crane

Tower crane results

Tower Crane are a permanent fixture across city skylines but failures and accidents can be catastrophic and can result in serious injury or death.

Active inspection days **95**

Between July - October 2022

The Inspectors focus was on high risk work crane and dogging licences, safe slinging and load movements, planning, consultation and communication, and equipment maintenance.

The objective of these inspections was to reduce the number of tower crane incidents in NSW. The focus was on safe lifting operations and improving SafeWork NSW's understanding of Tower and self-erecting Cranes organisational practice.

21 total notices

Due to the high level of compliance on sites, a small number of notices were issued. Some of the reasons for notices included:

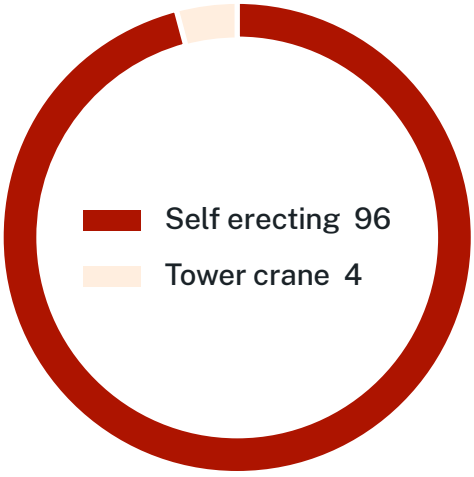
- construction hazards
- unsafe workplace
- plant maintenance
- electrical risks.

As reflected in the number of notices, tower crane incidents are low frequency but of high consequence when they do occur. If accidents occur, there is potential for significant or catastrophic impact to workers property, and the community. SafeWork NSW will continue to monitor crane usages across NSW and will keep industry up-to-date with the relevant information and resources.

Site visits **72**

SafeWork inspectors aimed to reduce the number of tower crane incidents in NSW collaborating with principal contractors (PC), sub-contractors, site supervisors, doggers and operators to ensure safe tower crane operations, systems and practices are implemented.

Crane type



The major hazards related to tower cranes include:

- structural collapse
- falling objects
- contact with buildings and powerlines
- risk of falls from the tower crane
- faults and maintenance.

Tower crane overview

Sites types

71% Mid-high rise

17% Major infrastructure

9% Other (see below)

3% House construction

Other: commercial, civic and industrial.

Safety campaign social interactions

101,599

Analytics

352,613 Impressions

34,532 ThruPlays

89 Link Clicks

Observations

High compliance

Low compliance

Paperwork and records

- 99% had the plant item registration certificate available on site.
- 96% had pre-erection inspection records available.
- 96% had a major inspection report available if the crane was over 10 years of age.
- 97% had a crane commissioning report available.
- 51% had signage attached to the crane other than the crane manufacturer signage.
- 89% had an engineer's report available that provides approval of crane signage.
- 69% of PCBU had a 'letter of advice' from electricity network operator.

Tower crane observations (Pre-job planning)

- 99% had evidence of adequate consultation between the PC, crane company and workers regarding job planning.
- 99% have considered collision and snagging hazards within the load path.
- 97% had a representative from the crane company visit the site prior to the crane arriving.
- 100% had a site-specific SWMS been prepared.
- 100% of PC/PCBU had a copy of the crane SWMS.
- 100% of PC/PCBU inducted the crane crew onto the site.
- 100% of PC/Crane companies ensured that there is a suitably qualified person for the crane operations being undertaken.
- 100% had crane appropriate for the radius and load of the proposed lifts.

Observations

High compliance

Low compliance

Paperwork and records

100%	had appropriate controls in place to minimise the risk of workers and others.
100%	had appropriate controls in place to prevent tower crane loads striking or snagging other structures e.g. buildings, scaffolds.
97%	had appropriate controls in place to prevent workers and others from entering the loading zone.
100%	had appropriate communication in place between the supervisor and CT/CS operator.
97%	of supervisor's had appropriate systems in place to manage their workers HRW licence currency and validity.
98%	of supervisor's had appropriate systems in place to ensure newly licenced operators/doggers are supervised and supported.

Conclusion

Key messaging on tower cranes

Our research and inspections have revealed that the most comment incidents occur from:

- falling loads
- unintended contact with overhead powerlines,
- unintended contact with buildings
- unintending contact with scaffolding or other plant
- cranes tipping or rolling over.

We also found operators with less than 5 years' experience are likely to be involved in accident. To prevent accidents and keep up-to-date with the latest information please us the www.safework.nsw.gov.au to access resources and tools.

Tower crane conclusion

This tower crane intervention program observed a high level of compliance in the majority of safety categories. These areas were:

- high risk work crane and dogging licences safe slinging and load movements planning, consultation and communication, equipment maintenance.

These are encouraging results, and reflective of a high industry standard across the tower crane industry. The relatively lower compliance levels were minor issues around the signage attached to the crane. Safework NSW will look to monitor the use of cranes across the state and develop an intervention program to address any emerging issues or trends in the future.

Access more information

- PCBU Tower Crane Checklist
- Code of Practice - Managing the Risk of Falls at Workplaces
- Guide for Crane Operators
- Pocket Guide to Construction Safety
- Safework SafetyCast on High Risk Work Licences