Federal Safety Commissioner's Hazard 2020 Online Educative Forum – Ground Conditions for Cranes Additional Q&A

The following questions were asked by attendees at the FSC Online Educative Forum on Articulated Mobile Cranes on Thursday 23 September. The questions were not answered due to time constraints on the day.

Q: Why are both a mobile plant risk assessment and a mobile plant Safe Work Method Statement (SWMS) required on site?

A: Scheme audit criteria H16.2 and H16.3 specifically outline that both a Plant Risk assessment and a SWMS are required. A Plant Risk assessment is an assessment used to identify and manage risks associated with an item of plant. The assessment should address a number of items including commissioning, operation, inspection, maintenance, repair, storage and dismantling and then any controls need to consider the hierarchy of risk controls and consider safety features associated with the plant such as warning devices, ROPS, FOPS and guarding.

Any controls identified in the plant risk assessment must be implemented on site and incorporated into any associated site documentation such as the SWMS. A safe work method statement (SWMS) is a legislative requirement and is required for all high-risk construction work, which includes the movement of powered mobile plant. The SWMS is intended to be a site-specific document and focus on the work being undertaken on site.

The SWMS should include, but not be limited to:

- hazards relating to the high-risk construction work, such as ground collapse,
- associated risks, such as damage to persons and or plant, and
- identify appropriate controls - prior to crane set up an assessment of ground conditions is to be undertaken to ensure any loads imposed will not impact the stability of the crane.

Q: What can be done to combat the issue of generic and non-specific risk plant assessments on-site?

A: When reviewing plant risk-assessments, checks need to be undertaken to ensure the details are correct and the focus is on the correct item of plant. Manufacturers are often able to provide suitable plant risk assessment for the item of plant. There are other organisations which can also assist and provide plant specific risk assessments. There may be opportunity to capture this when you are onboarding the plant to site and having a check list item confirming the plant risk assessment is plant specific. All details provided on site for the use of plant should be plant specific this includes the plant pre-start.

Q: Is it necessary to re-inspect crane pads after an earthquake?

A: Any event which has the potential to impact the structural integrity of the crane pad needs to be managed and the system should address this and provide what needs to occur post event i.e. reinspection of the pad prior to commencing works.

Q: Regarding F-grade of (hardwood) timber, how should a determination be made for structural adequacy in bending and shear?

A: *AS1720* standard sets out limit state design methods for the structure use of timber. The loading method of timber can impact the capacity greatly, and the designer must establish the correct design actions and capacity factors. As with any structural design, a suitably qualified and experienced engineer should be consulted.

Q: Are OEM software products available that are compatible with Apple computer operating systems?

A: There are various software products available, suitability may depend on the crane in use. Please consult with the crane manufacturer to determine the correct resource; or contact CICA (admin@cica.com.au) for further information.

Q: In reference to the provided formula:

Pressure (tonnes per m^2) applied by outrigger feet

$$P_{out} = \frac{0.65 \times (\text{total crane mass} + \text{lifted load})}{(\text{individual outrigger area})}$$

$$P_{out} = \frac{0.65 \times (C_M + L)}{\text{area}}$$

Why is 0.65 used:

- ***is this to calculate a conservative pressure?***
- ***are there different factors for different cranes/ outrigger pads?***

A: This formula is a reasonable approximation for maximum ground pressure applied by the outriggers, and is useful when the manufacturer's data is unavailable or hard to obtain.

- The 0.65 factor is a conservative factor, which accounts for consideration of the load reacting across multiple outriggers.
- For this particular formula, there are no other factors for different cranes / outrigger pads.

Information on the Hazard 2020 Safety Campaign, and videos from the session and previous webinars are available at www.fsc.gov.au/hazard-2020. If you have additional questions please email ofsc@jobs.gov.au.