

## CICA HOIST SECTOR FAQs - CRANE DESIGN SPECIFICATION

### A. How do I specify a crane?

**Summary:** Refer to AS1418.3 Appendix A2 for a detailed list of information. Design registration is required for bridge and gantry cranes with SWL greater than 10t.

Refer to AS1418.3 Appendix A2 (this Standard is available to CICA members through CICA website members only section, subscribe to CICA membership to get access to this Standard) for a detailed list of information to be supplied with tender. Providing as much of this information as possible will help in ensuring supply of a crane suited to your required tasks.

According to WHS Regulation (2011), Schedule 5, design registration is required for gantry cranes with a safe working load greater than 5 tonnes or bridge cranes with a safe working load of greater than 10 tonnes, and any gantry crane or bridge crane which is designed to handle molten metal or Schedule 11 hazardous chemicals

### B. What does a crane classification mean?

**Summary:** Cranes are classified to be suitable for the application and the duty they are expected to handle during their design life.

Cranes are generally designed with a specific application in mind. The duty for which the crane is intended will determine the required classification. The duty is made up of number of lifts, magnitude of load lifted and duration of operations of motions. This system allows cranes and their components to be designed to be suitable for the load cycles they are expected to see during their design life without suffering fatigue damage. It means that more robust structures and components will be used in a design where needed and excessive expenses are not incurred where they are not. A crane which lifts loads close to its rated capacity at a high frequency might have a classification of C9 where a crane that is rarely used and lifts loads well below its rated capacity may have a classification of C1.

## C. What is Mechanical and Structural Classification?

***Summary: Structural classification S1-S9 are derived from expected state of loading and expected number of load cycles. Mechanical classification M1-M8 comes from the expected state of loading and the duration of expected operation of the component.***

*Overall crane classification C1-C9 and structural classification S1-S9 are derived from expected state of loading and expected number of load cycles. State of loading refers to how many lifts are expected at various percentages of the total rated capacity.*

*Mechanical components are classified using a system of M1-M8. The classification comes from the expected state of loading and the duration of expected operation of the component.*

*These classifications are also often used on existing cranes to determine the appropriate level of inspection and maintenance in lieu of manufacturer's instructions.*

*If the crane's actual duty differs from the duty which was anticipated at the time of specification then the level of inspection and maintenance should reflect the duty which it is actually performing. Cranes performing higher duty than their classification will need extra attention and are likely to have reduced life.*