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Supplement No1 (May 1977) to AS1418, Part1-1977

EXTRACTS FROM

AS CB2-1960 SAA CRANE AND HOIST CODE

STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

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SUPPLEMENT No 1

to

AS 1418, Part 1–1977

RULES FOR CRANES
(including hoists and winches)

known as the

SAA CRANE CODE

EXTRACTS FROM AS CB2 CRANE AND HOIST CODE

This Supplement reproduces those rules of AS CB2–1960 that are related to matters which have not been covered by AS 1418. Other rules on which those matters depend have also been reproduced for reference purposes.

No attempt has been made to update or revise the rules of AS CB2 contained in this Supplement because necessary revision will be incorporated in AS 1418 as work progresses on the Parts and Sections still in course of preparation.

Published on 1 June 1977.

4.70 STABILITY—GENERAL.

4.70.1 Design Loads. The margin of stability for cranes and crane structures shall be determined under the effects of:

(i) Wind pressure

(ii) Safe working load (AS 1418 Part 1 Definition 2.8.2)

(iii) Wind pressure and safe working load

4.70.2 Margin of Stability. The design margin of stability expressed as a percentage shall be calculated as follows:

$$\text{Margin of stability} = 100 \left(\frac{\text{stabilising moment}}{\text{overturning moment}} - 1\right)$$

Stabilising moment shall be the moment of the crane weight about its axis of tipping, neglecting the effects of rail grips.

Overturning moment shall be the moment of the design loads (see Rule 4.70.1) about the crane's axis of tipping. Where the load is handled by a magnet, grab or similar appliance, the basic design load shall be increased by 25 per cent of the safe working load.

4.71 STABILITY UNDER STORM CONDITIONS. The stability of a crane under storm conditions shall be such that the stabilising moment is at least 1.25 times the overturning moment due to the maximum wind effects specified in AS 1418, Part 1, Rule 5.5.

4.72 STABILITY UNDER SERVICE CONDITIONS.

4.72.1 General. Except for cranes specifically covered by Rule 4.72.3, the design margin of stability shall be not less than the amounts stated below:

(i) For cranes not capable of gravity (free) lowering of the load or jib, but fitted with an effective device which warns the driver when the margin of stability is reduced to 33 per cent .... 50 per cent

(ii) For cranes not capable of gravity (free) lowering of the load or jib, but not fitted with a warning device as in item (i) .... 60 per cent

(iii) For cranes capable of freely lowering their loads under the influence of gravity or controlled by brakes alone .... 80 per cent

4.72.3 Mobile Cranes (Road Wheel or Crawler Type).

4.72.3.1 *Margin of Stability.* The margin of stability shall be not less than the amounts stated below:

(i) For cranes "free on wheels" .... 50 per cent

(ii) For cranes with blocked base or on crawler tracks:

up to and including 8 tons basic design load .... 50 per cent

exceeding 8 tons up to and including 12 tons basic design load .... $\frac{400}{\text{basic design load in tons}}$ per cent

over 12 tons basic design load .... 33 per cent

Where the load is handled by a magnet, grab or similar appliance, the basic design load shall be increased by 25 per cent for purposes of determining the margin of stability.

4.72.3.2 *Stability in Condition for Travelling.* The crane shall be stable when travelling across a gradient of 1 in 20 with the jib removed and the superstructure slewed transversely in either direction.

The manufacturer shall state the maximum slope at which the crane, in normal travelling condition, is stable when travelling forward or backward and up or down a smooth hard gradient.

4.72.5 Floating Cranes of All Types, including Pontoon Hulls, Square or Swim-ended, Ship-shaped, Self-propelled or Dumb. The stability of hulls of floating cranes shall be such that, under maximum conditions of loading, the hulls shall have a reasonable excess righting (stabilising) moment over the overturning moment imposed by the conditions of maximum loading with the crane jib in any position.