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AS 1418.1—2002
(Incorporating Amendment No. 1)

AS 1418.1—2002

Australian Standard™

Cranes, hoists and winches

Part 1: General requirements

This Australian Standard was prepared by Committee ME-005, Cranes, General. It was approved on behalf of the Council of Standards Australia on 15 February 2002.

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The following are represented on Committee ME-005:

Association of Consulting Engineers Australia
Australian Elevator Association
Australian Industry Group
Australian Institute for Non-destructive Testing
Bureau of Steel Manufacturers of Australia
Crane Industry Council of Australia
Department of Administrative and Information Services (SA)
Department of Industrial Relations (Qld)
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PREFACE

This Standard was prepared by the Standards Australia Committee ME-005, Cranes, to supersede AS 1418.1—1994, *SAA Crane Code*, Part 1: *General requirements*.

This Standard incorporates Amendment No. 1 (November 2004). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

The objective of this Standard is to provide uniform requirements within Australia for the design and construction of cranes and similar lifting appliances.

Requirements that apply to more than one type of crane are included in Part 1: *General requirements*. Any requirements that apply to only one type of crane should only appear in the specific part for that crane and not in Part 1. Some requirements have been deleted from this Standard and are being moved to their applicable Part.

The term ‘shall’ is used to indicate those requirements that have to be met for compliance with the objectives and intent of this Standard.

The Commonwealth, State and Territory governments may choose to incorporate this Australian Standard into their laws and regulations. The exact manner of incorporation will determine whether the whole document is incorporated or whether specific sections or provisions of the Australian Standard are incorporated. The manner of incorporation will determine which of the Standard’s requirements (‘shall’ statements) have been made a legal requirement in a jurisdiction. As a general principle, where an Australian Standard is incorporated by a regulation, the legal status of the Standard’s requirements and recommendations is made clear by the incorporation of provisions of the regulation.

Thus, the requirements (‘shall’ statements) in an Australian Standard are not mandatory for legal purposes unless incorporated specifically by an Act or regulation. Readers will need to refer to their jurisdiction’s law to determine which parts of the Australian Standard (if any) have been incorporated and the manner of incorporation.

This Standard deviates from ISO 11660.1 in regard to access requirements for safety reasons.

This revision includes the following changes:

- (a) The maximum temperature of touchable surfaces is now 55°C.
- (b) The term ‘safe working load’ has been changed to ‘rated capacity’ and other uses of the word ‘safe’ have been avoided due to the legal significance placed on the word.
- (c) Reference to approval by the relevant authority has been removed to reflect the current regulatory environment.
- (d) Tear-out/tear-off forces for cranes equipped with magnets or grabs have to be taken into consideration.
- (e) There is a new method of calculating the hoisting factor (ϕ_2), which is taken from DIN 15018.
- (f) Out-of-service wind loads are now considered additional loads instead of special loads.
- (g) Transport loads have to be taken into consideration where the crane is transported during its life.
- (h) The design of monorail beams has been moved to a new Part 18: *Runways and monorails*.

- (i) The factor of safety against drifting during operation has changed to 1.5.
- (j) The design life of mechanisms may be less than 10 years provided this is documented.
- (k) In determining the group classification of mechanisms, an adjustment to an equivalent number of running hours is allowed after the load spectrum factor has been set.
- (l) Requirements for gearing have been expanded.
- (m) Requirements for hoisting, travel, and traverse motion brakes have been expanded.
- (n) A minimum worn wheel flange thickness has been defined.
- (o) Hookbolts used for rail fastening are required to be ductile.
- (p) Detachable parts are required to be designed for safe assembly and disassembly.
- (q) The attachment of hooks directly attached to structural members is required to be designed such that no bending moment is experienced by the hook shank.
- (r) Some requirements for counterweights have been added.
- (s) Requirements for controllers have been revised.
- (t) Requirements for limit switches have been revised.
- (u) Motor protection requirements have been revised.
- (v) Mention is made of electromagnetic compatibility (EMC) and phase sequence protection.
- (w) Extra requirements for cranes with lifting magnets have been added.
- (x) Emergency egress requirements have been revised.
- (y) Requirements for installation of cranes in hazardous areas have been revised to interface with recently revised applicable Standards.
- (z) Requirements for operators and maintenance manuals have been added.

Questions concerning the meaning, the application, or effect of any part of this Standard, may be referred to the Standards Australia Committee on Cranes. The authority of the Committee is limited to matters of interpretations and it will not adjudicate in disputes.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

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