AS 4730.1:2018

Australian STANDARD

Mining—Winding equipment

Part 1: Winder control systems

STANDARDS Australia

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Australian Industry Group
Construction and Mining Equipment Industry Group
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Engineers Australia
Minerals Council of Australia
Mining Electrical and Mining Mechanical Engineering Society
NSW Department of Planning and Environment

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First published as AS 4730.1:2018.

Preface

This Standard was prepared by the Standards Australia Committee ME-018, Mining Equipment.

The objective of this Standard is to assist designers, manufacturers and managers of winder control systems, including shaft sinking winder control systems, by providing control measures for the purpose of protecting the safety of people in the workplace and property.

This Standard is Part 1 of a new series of Standards for mine winding equipment. This series comprises the following:

AS 4730.1, *Mining — Winding equipment, Part 1*: *Winder control systems* (this Standard)

AS 4730.2, *Mining — Winding equipment*, *Part 2: Braking systems*

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The term “informative” has been used in this Standard to define the application of the appendix to which it applies. An “informative” appendix is only for information and guidance.

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Part 1: Winder control systems

Section 1 Scope and general

1.1 Scope

This Standard specifies requirements for the design and testing of powered mine winder control systems and their management through all stages of their lifecycle.

NOTE Appendix A describes typical hazardous events that can arise during the operation of winding systems, and the associated actions that may be used to address the hazards.

This Standard applies to all powered winding systems, whether vertical or inclined, where the travel distance is more than 40 m, and to powered winding systems carrying more than two people if the travel distance is less than 40 m.

This Standard does not apply to winder braking systems (refer to AS 4730.2).

1.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents for informative purposes are listed in the Bibliography.

AS 61508.1, *Functional safety of electrical/electronic/programmable electronic safety-related systems, Part 1: General requirements*

AS 62061, *Safety of machinery — Functional safety of safety-related electrical, electronic and programmable electronic control systems*

AS IEC 61511, *Functional safety — Safety instrumented systems for the process industry sector (all parts)*

AS/NZS 4024.1604, *Safety of machinery, Part 1604: Design of controls, interlocks and guarding — Emergency stop — Principles for design*

IEC 60204-1, *Safety of machinery — Electrical equipment of machines, Part 1: General requirements*

1.3 Terms and definitions

For the purposes of this Standard the following terms and definitions apply.

1.3.1
abnormal condition
condition that needs to be actioned to prevent either injury to personnel or damage to equipment

Note 1 to entry: This may be determined by industry experience, user experience or risk assessment. Examples of such conditions include operation outside the defined speed and distance requirements, conveyance door not secured, unauthorized shaft access, shaft obstruction and slack rope.

1.3.2
basic process control system
electrical, electronic, programmable electronic system(s), mechanical device, or combination of any; that implements control functions of the mine winding equipment