

Australian/New Zealand Standard™

**Non-destructive examination and
discard criteria for wire ropes in mine
winding systems**

AS/NZS 4812:2003

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee ME-018, Mining Equipment. It was approved on behalf of the Council of Standards Australia on 13 December 2002 and on behalf of the Council of Standards New Zealand on 13 December 2002. It was published on 24 February 2003.

The following are represented on Committee ME-018:

Australasian Institute of Mining and Metallurgy
Australian Chamber of Commerce and Industry
Australian Coal Association
Bureau of Steel Manufacturers of Australia
Chamber of Mines of Western Australia
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PREFACE

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

The Standard is intended to promote the safe use of wire ropes for mine winding systems.

The following documents were referred to when drafting this Standard:

AS 1929 Non-destructive testing—Glossary of terms

AS 2759 Steel wire rope—Application guide

AS 3569 Steel wire ropes

AS 3978 Non-destructive testing—Visual inspection of metal products and components

ASTM E1571 Standard practice for electromagnetic examination of ferromagnetic steel wire rope

MDG No. 26 Guidelines for examination, testing and retirement of mine winder ropes for use in coal mines—Department of Mineral Resources, N.S.W.

SABS 0293:1996 Condition assessment of steel wire ropes on mine winders

Techniques to better exploit the possibilities of wire testing with permanent magnet equipped EM instruments—Canmet Noranda Project 1990—1992

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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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard**Non-destructive examination and discard criteria for wire ropes in mine winding systems**

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies requirements for non-destructive examination and discard of wire ropes of mine winding systems, including winding, hoisting, balance, rubbing, guide and shaft sinking ropes, but excluding full locked-coil ropes.

This Standard is not intended to replace mine-site inspection schedules or destructive tests. Destructive tests may be required in areas not accessible to a non-destructive examination, or in addition to a non-destructive examination.

NOTES:

- 1 This Standard is not a rope management system, but should be used as input for such a system.
- 2 This Standard only applies to the use of full-coil sensor heads with EM instruments.

1.2 REFERENCED DOCUMENT

The following documents are referred to in this Standard:

AS

3785 Underground mining—Shaft equipment

3785.6 Part 6: Guides and rubbing ropes for conveyances

3978 Non-destructive testing—Visual inspection of metal products and components

1.3 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

1.3.1 Anomaly

An irregularity in a rope that results in a change of signal to an NDT instrument.

1.3.2 Area**1.3.2.1 Rope area**

The metallic cross-sectional area of a wire rope.

1.3.2.2 Strand area

The metallic cross-sectional area of a strand.

1.3.3 Competent person

A person having practical and theoretical knowledge and relevant experience of wire ropes, sufficient to enable that person to detect and evaluate any defects and any weaknesses of wire ropes that may affect the intended performance of the winding equipment.