

Australian Standard[®]

Galvanized steel wire strand



This Australian Standard® was prepared by Committee ME-007, Steel Wire Ropes. It was approved on behalf of the Council of Standards Australia on 13 September 2004. This Standard was published on 4 January 2005.

The following are represented on Committee ME-007:

- Australian Chamber of Commerce and Industry
 - Institute of Materials Engineering Australasia
 - Shipping Australia
-

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STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 2841—2005

Galvanized steel wire strand

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The Crane Industry Council of Australia

NOTES

Australian Standard[®]

Galvanized steel wire strand

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PREFACE

This Standard was prepared by the Standards Australia Committee ME-007, Steel Wire Ropes to supersede AS 2841—1986.

This Standard incorporates Amendment No. 1 (February 2011). 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 a consistent set of specifications for galvanized steel wire strand to aid communication between manufacturers, users and regulators of these products.

The designation system used to describe the mechanical properties and construction of the strand is generally taken from ISO 17893, *Steel wire ropes—Vocabulary, designations and classifications*. An obvious departure is the Australian terminology for Spiral Strand is ‘Strand’.

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

Australian Standard

Galvanized steel wire strand

S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard specifies requirements for galvanized round steel strand of the constructions given in Tables 1.1 and 1.2 and which are used for structural, and general purpose applications.

This Standard excludes strand for concrete stressing and for automobiles and aeroplanes.

1.2 REFERENCED DOCUMENTS

The following Standards are referred to in this Standard:

AS

1391 Methods for tensile testing of metals

1394 Round steel wire for ropes

2193 Calibration and grading of force-measuring systems

1.3 DEFINITIONS

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

1.3.1 Minimum breaking force

The tensile force that a sample of the strand must withstand without breaking when loaded in the prescribed manner.

1.3.2 Measured breaking force

The maximum tensile force measured when a sample of strand is tested to destruction using the prescribed method.

1.3.3 Contra-lay

Strand with more than one layer in which at least one layer of wires is laid in the opposite direction to the other layers.

1.3.4 Core

The central member of a strand, which may be one of the following:

- (a) A single wire (king).
- (b) A group of wires.

1.3.5 Galvanized strand

Strand manufactured from zinc-coated or zinc alloy-coated wire produced in accordance with AS 1394.

1.3.6 Grade of wire

The minimum value of the tensile strength of the wire in megapascals (MPa), expressed as a number.

1.3.7 Joint

A weld made in a wire after final drawing of the wire.

1.3.8 Lay

The term applied to—

- (a) the manner of laying wires in strands;
- (b) the direction of laying; and
- (c) the pitch of the wire helix in the strand.

1.3.9 Lay length

The pitch of the helix of the outside wires of the strand in the longitudinal axis of the strand.

1.3.10 Direction of lay

The direction of lay is defined as right-hand or left-hand. With right-hand lay, the slope of the wires is in the direction of the central part of the letter Z when the strand is held vertically. With left-hand lay, the slope of the wires is in the direction of the central part of the letter S when the strand is held vertically. In this Standard, the direction of lay is defined by the outer layer.

1.3.11 Layer

A group of wires in a strand laid around the core, the same distance from the core.

1.3.12 Spiral strand rope

See 'strand'.

1.3.13 Strand diameter

The diameter of the circumscribing circle.

1.3.14 Strand

An assembly of round wires laid helically in one or more layers around a core.

1.4 DESIGNATION

1.4.1 Form of designation

The complete designation of a steel wire strand shall specify the following characteristics in the order in which they are given:

- (a) *Nominal diameter* Expressed in millimetres.
- (b) *Strand construction* The number of wires in each separate layer, including the core, separated by the symbol '+'. The abbreviated construction is $1 \times$ total number of wires in the strand.
- (c) *Tensile grade of wires (MPa)* A number that is the value, in megapascals, of the minimum tensile strength of the wires from which the strand is manufactured. This number is known as the grade of the strand.
- (d) *Surface finish of the wire:*
 - (i) *Class A* hot dip coated (as a final operation) and with Class W10 coating in accordance with AS 1394.
 - (ii) *Class B* drawn after hot dip zinc coating and with Class W05 coating in accordance with AS 1394.