Australian Standard®

Carbon steel spring wire for mechanical springs

This Australian Standard was prepared by Committee MT/1, Iron and Steel. It was approved on behalf of the Council of Standards Australia on 20 July 1990 and published on 11 February 1991.

The following interests are represented on Committee MT/1:

Australian Foundry Institute
Australian Institute of Steel Construction
Bureau of Steel Manufacturers of Australia
Confederation of Australian Industry
Department of Defence
Metal Trades Industry Association of Australia
Railways of Australia Committee
Society of Automotive Engineers, Australasia

Review of Australian Standards. *To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.*

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This Standard was issued in draft form for comment as DR 88187.

Australian Standard®

Carbon steel spring wire for mechanical springs

First published as AS 1472 — 1973.
Second edition 1979.
Third edition 1991.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140
ISBN 0 7262 6499 7

PREFACE

This Standard was prepared by the Standards Australia Committee on Iron and Steel under the direction of the Metals Standards Board, to supersede AS 1472 — 1979.

In this edition, the scope of the Standard has been extended to include drawn galvanized steel spring wire. Micro-alloying elements comprising chromium and vanadium have been introduced into the chemical composition of the steel to provide improvements in mechanical properties and microstructure.

CONTENTS

STANDARDS AUSTRALIA

Australian Standard
Carbon steel spring wire for mechanical springs

1 SCOPE This Standard specifies requirements for carbon steel spring wire of round cross-section for mechanical springs, supplied in coils in one of the following conditions:

(a) Hard-drawn.
(b) Drawn galvanized.
(c) Oil-hardened and tempered.
(d) Soft-drawn.

NOTES:

1 Advice and recommendations on information to be supplied by the purchaser at the time of enquiry or order are contained in the purchasing guidelines set out in Appendix A.
2 Alternative means for determining compliance with this Standard are given in Appendix B.

2 REFERENCED DOCUMENTS The documents below are referred to in this Standard:

AS
1050 Methods for the analysis of iron and steel
1199 Sampling procedures and tables for inspection by attributes
1213 Iron and steel—Methods of sampling
1391 Methods for tensile testing of metals
1399 Guide to AS 1199—Sampling procedures and tables for inspection by attributes
1442 Carbon steels and carbon-manganese steels—Hot-rolled bars and semi-finished products
2003 Methods for the measurement of decarburization in carbon and low alloy steels
2505 Methods for bend and related testing of metals
2505.5 Part 5: Torsion and wrapping tests on wire
2706 Numerical values—Rounding and interpretation of limiting values
3900 Quality systems—Guide to selection and use
3904 Quality systems—Guide to quality management and quality system elements
K1 Methods for the sampling and analysis of iron and steel

ISO
Guide 44 General rules for ISO or IEC international third-party certification scheme for products

3 DEFINITIONS For the purposes of this Standard, the definitions below apply.

3.1 Batch—a quantity of some commodity produced under conditions which are considered to be uniform.

NOTE: Each batch is assumed, as far as practicable, to consist of materials or items of a single type, grade, class, size, and composition, and to have been manufactured under essentially the same conditions at essentially the same time.

3.2 Cast—the form taken by the individual waps (turns or circles) of a wire in a coil.

3.3 Drawn galvanized—carbon steel wire drawn to final size after galvanizing and with a relatively high reduction of cross-sectional area from a heat-treated (patented or similar process) base.

3.4 Hard-drawn—carbon steel wire drawn with a relatively high reduction of cross-sectional area from a heat-treated (patented or similar process) base.

3.5 Oil-hardened and tempered—carbon steel wire continuously hardened by quenching in oil followed by tempering.

3.6 Soft-drawn—wire drawn with a reduction of area of approximately 10 percent from an annealed base.

4 MATERIALS

4.1 Materials source The wire may be drawn from rods complying with the requirements of AS 1442 or other appropriate Standards, providing the chemical composition of the rod material meets the requirements of Clause 4.2.