

Steel wire rope for general purpose and for mine hoisting and mine haulage



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***Steel wire rope for general purpose and for
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Preface

This is the seventh edition of CSA G4, *Steel wire rope for general purpose and for mine hoisting and mine haulage*. It combines and supersedes the requirements of the previous editions of the following:

- CSA G4, *Steel Wire Rope for General Purpose and for Mine Hoisting and Mine Haulage*, published in 2000 and 1992;
- CSA G4-M, *Steel Wire Rope for Mine Hoisting and Haulage Purposes*, published in 1977;
- CSA G4, *Steel Wire Rope for General Purpose and for Mine Hoisting and for Mine Haulage*, published in 1976;
- CSA G4, *Steel Wire Rope: General Purpose*, published in 1967, 1958, and 1921; and
- CSA G18, *Steel Wire Rope for Mine Hoisting and Haulage Purposes*, published in 1965.

A number of revisions have been made to this edition of the Standard, including the following:

- addition of a definition for “Metallic area”;
- updating of the reference publications;
- addition of two metric grades and two inch/pound grades of wire rope;
- clarification of the method for determining the grade of rope;
- testing of the fibre core is now permitted at the yarn stage;
- clarification of the testing procedure for the diameter of the wire rope;
- alignment of the breaking load test with ISO 10425:2003, *Steel wire ropes for the petroleum and natural gas industries — Minimum requirements and terms of acceptance*;
- changes to the Manufacturer’s Certificate of Compliance; and
- changes to the information on the packing slip.

CSA gratefully acknowledges the financial assistance provided by the Ontario Ministry of Labour, the Saskatchewan Ministry of Advanced Education, Employment and Labour, and Haggie North America in the development of this Standard.

This Standard was prepared by the Technical Committee on Wire Rope, under the jurisdiction of the Strategic Steering Committee on Occupational Health and Safety, and has been formally approved by the Technical Committee.

November 2009

Notes:

- (1) Use of the singular does not exclude the plural (and vice versa) when the sense allows.
- (2) Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.
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G4-09

Steel wire rope for general purpose and for mine hoisting and mine haulage

1 Scope

1.1

This Standard covers mine hoisting, mine haulage, and ski-lift ropes, and ropes for general applications. It includes requirements for raw materials and construction features for

- (a) round strand and flattened strand rope;
- (b) locked coil rope;
- (c) plastic impregnated and jacketed rope; and
- (d) compacted strand rope in bright and galvanized finish.

Note: Although Tables specifying physical properties for a number of the more common classifications of wire rope are provided in this Standard, this Standard is not limited to those specified and may be used to evaluate non-typical wire rope constructions within the wire rope grades specified in [Clause 4.1.3.1](#).

1.2

The Standard also includes requirements for in-service destructive testing of steel wire ropes for mine hoisting applications.

1.3

This Standard is not intended for use in the manufacture and purchase of

- (a) aircraft cable;
- (b) elevator rope;
- (c) tiller rope;
- (d) swaged rope;
- (e) marlin-covered rope;
- (f) marine or shipping ropes;
- (g) bridge rope, and strand;
- (h) galvanized sash cord;
- (i) zinc-coated strand; or
- (j) galvanized guard rail cable.

1.4

The values stated in either SI units or inch/pound units are regarded as standard. Within the text, the inch/pound units are shown in parentheses and in separate tables (except for [Tables 12](#) and [17](#), which do not contain measurement values). The values stated in each system of measurement are not exact equivalents; each system is to be used independently of the other.

Note: Combining values from the two systems can result in nonconformance with the specification.