



Standard Specification for Grade 80 and Grade 100 Alloy Steel Chain Slings for Overhead Lifting¹

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1. Scope

1.1 This specification covers the requirements and method of rating and testing for alloy chain slings. Slings shall be assembled using components manufactured in accordance with Specification [A391/A391M](#) for Grade 80 chain, Specification [A973/A973M](#) for Grade 100 chain, and Specification [A952/A952M](#) for other components. This specification covers welded and mechanically assembled slings.

1.2 This specification does not cover slings used at elevated temperatures (above 400°F [200°C]), in harmful or corrosive environmental conditions or for applications such as nonsymmetrical legs or loading.

1.3 This specification is a performance and assembly specification. Other standards, such as OSHA 1910.184, ASME B30.9, and ASME B30.10, apply to the use of the products in this specification.

1.4 The values stated in either inch-pound units or SI units shall be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore each system shall be used independently of the other, without combining values in any way.

2. Referenced Documents

2.1 ASTM Standards:²

[A391/A391M](#) Specification for Grade 80 Alloy Steel Chain
[A952/A952M](#) Specification for Forged Grade 80 and Grade
100 Steel Lifting Components and Welded Attachment
Links
[A973/A973M](#) Specification for Grade 100 Alloy Steel Chain

¹ This specification is under the jurisdiction of ASTM Committee A01 on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee A01.27 on Steel Chain.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

2.2 Other Standards:

OSHA 1910.184³
ASME B30.9 Slings⁴
ASME B30.10 Hooks⁴

3. Terminology

3.1 Definitions:

3.1.1 *chain sling*—an assembly consisting of alloy steel chain or chains joined to suitable upper and lower fittings, according to the provisions of this specification, for attaching loads to be lifted by a crane or lifting machine.

3.1.2 *coupling link*—a link fitted to the end of the chain to connect to another component of the sling. See [Fig. 1](#).

3.1.3 *master coupling link (secondary or intermediate link)*—a link used on three and four leg slings to connect the legs to a master link. See [Fig. 1](#).

3.1.4 *master link*—a link used as the upper end component of a chain sling and by means of which the sling is attached to a crane or other lifting machine. See [Fig. 1](#).

3.1.5 *overhead lifting*—that process of lifting which would elevate a freely suspended load to such a position that dropping the load would present a possibility of bodily injury or property damage.

3.1.6 *proof test*—a term designating a quality control test applied to a sling or to components of a sling. It is the minimum force in pounds or newtons which the sling and components have withstood under a test in which a constantly increasing force has been applied in direct tension.

3.1.7 *length (reach)*—the distance from the bearing point of the upper end fitting to the bearing point of the lower end fitting. See [Fig. 1](#).

3.1.8 *sling angle*—that angle measured between the horizontal plane and the leg (legs) of the sling. See [Tables 1-3](#).

³ Available from Occupational Safety and Health Administration (OSHA), 200 Constitution Ave., NW, Room Number N3626, Washington, DC 20210, <http://www.osha.gov>.

⁴ Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Two Park Ave., New York, NY 10016-5990, <http://www.asme.org>.