
**Ships and marine technology — Loose
gear of lifting appliances on ships —
Shackles**

*Navires et technologie maritime — Accessoires mobiles des appareils
de levage sur les navires — Manilles*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 8, *Ships and marine technology*, Subcommittee SC 4, *Outfitting and deck machinery*.

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Ships and marine technology — Loose gear of lifting appliances on ships — Shackles

1 Scope

This International Standard specifies the types and basic parameters, technical requirements, marking, storage, and transportation, use and maintenance of shackles, loose gear of lifting appliances on ships.

This International Standard is applicable to lifting appliances on ships.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 261, *ISO general purpose metric screw threads — General plan*

ISO 2415, *Forged shackles for general lifting purposes — Dee shackles and bow shackles*

ISO 16855, *Ships and marine technology — Loose gear of lifting appliances on ships — General requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2415 and ISO 16855 apply.

4 Types and basic parameters

<https://standards.iteh.ai/catalog/standards/iso/b219bfaa-5bef-4be7-a49d-4e4a5a5f029b/iso-16857-2013>

4.1 Dee shackles

For the shapes and dimensions of Dee shackles, see [A.1](#).

4.2 Bow shackles

For the shapes and dimensions of Bow shackles, see [A.2](#).

4.3 Pins of shackles

For the types of pins of shackles (Type W, Type X, and Type Y), see [A.3](#).

4.4 Pinholes of shackles

For the diameters of pinholes of shackles, see [A.4](#).

4.5 Designation method of models

The model of shackles shall be designated as follows:

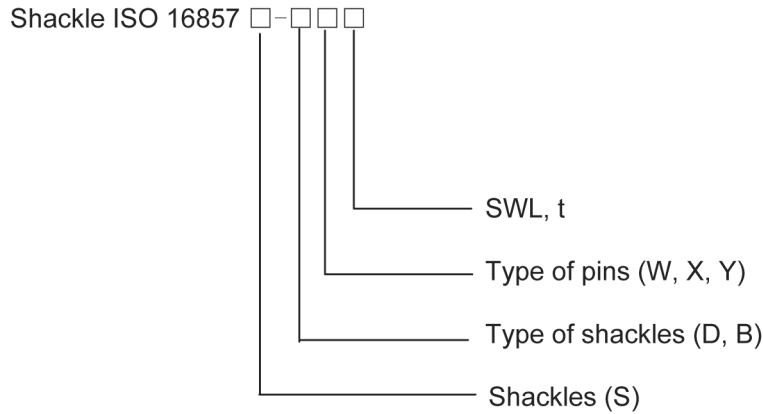


Figure 1 — Example

EXAMPLE 1 Dee shackles with Type W pins and 20 t SWL:

Shackle ISO 16857 S-DW20

EXAMPLE 2 Bow shackles with Type X pins and 10 t SWL:

Shackle ISO 16857 S-BX20

5 Technical requirements

5.1 Materials

5.1.1 Shackle materials shall use solid steel manufactured by Martin furnaces, electric furnaces, or oxygen top blown converters; it is recommended to use the electroslag remelting process.

5.1.2 For the chemical composition of shackle materials, see [Table 1](#). Other materials can be used (see [5.6](#)).

Table 1 — Chemical composition of shackle materials

Materials	Chemical composition (heat analysis)						
	%						
	C	Si	Mn	P	S	Cr	Al
Carbon steel	0,17-0,24	0,17-0,35	0,45-0,80	≤0,035	≤0,035	≤0,030	≥0,025
Carbon-manganese steel	0,17-0,24	0,20-0,35	1,20-1,50	≤0,035	≤0,035	≤0,030	≥0,025

5.1.3 For the mechanical properties of shackle materials, see [Table 2](#). Other mechanical properties can be used (see [5.6](#)).