



BSI Standards Publication

Ships and marine technology — Marine combined connecting mooring line

National foreword

This British Standard is the UK implementation of ISO 18821:2025.

The UK participation in its preparation was entrusted to Technical Committee SME/32, Ships and marine technology - Steering committee.

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Published by BSI Standards Limited 2025

ISBN 978 0 539 29139 1

ICS 47.020.50

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 October 2025.

Amendments/corrigenda issued since publication

Date	Text affected



**International
Standard**

ISO 18821

**Ships and marine technology —
Marine combined connecting
mooring line**

*Navires et technologie maritime — Ligne d'amarrage
combinée marine*

**First edition
2025-10**

Reference number
ISO 18821:2025(en)

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Published in Switzerland

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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.

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This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 4, *Outfitting and deck machinery*.

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Ships and marine technology — Marine combined connecting mooring line

1 Scope

This document specifies the classification, structure and code, design requirements and testing methods of a marine combined connecting mooring line (hereinafter referred to as a combined line), which consists of a mooring line, connection device and tail.

This document applies to the design, manufacture and inspection of combined lines for tankers.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1140, *Fibre ropes — Polyamide — 3-, 4-, 8- and 12-strand ropes*

ISO 1141, *Fibre ropes — Polyester — 3-, 4-, 8- and 12-strand ropes*

ISO 2307:2019, *Fibre ropes — Determination of certain physical and mechanical properties*

ISO 2408:2017, *Steel wire ropes — Requirements*

ISO 9554, *Fibre ropes — General specifications*

ISO 16143-1:2014, *Stainless steels for general purposes — Part 1: Corrosion-resistant flat products*

ISO 10325, *Fibre ropes — High modulus polyethylene — 8-strand braided ropes, 12-strand braided ropes and covered ropes*

ISO 10556, *Fibre ropes of polyester/polyolefin dual fibres*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 fibre rope

rope made from synthetic fibre

3.2 tail

short length of rope attached to the end of a mooring line to provide increased elasticity and also ease of handling

3.3

cow hitch

method of joining two *fibre ropes* ([3.1](#)) without connection device

3.4

ship design minimum breaking load

ship design MBL

minimum breaking load of new, dry mooring lines for which a ship's mooring system is designed

Note 1 to entry: This minimum breaking load is expressed in kN.

3.5

line design break force

LDBF

minimum force at which a new, dry, spliced mooring line will break when tested

Note 1 to entry: This minimum force is expressed in kN.

3.6

tail design break force

TDBF

minimum force at which a new, wet, spliced tail will break when tested

Note 1 to entry: This minimum force is expressed in kN.

3.7

working load limit

WLL

maximum allowable load the mooring line is able to sustain

Note 1 to entry: This maximum allowable load is expressed in t.

3.8

proof load

force applied as a test to a finished connection device

Note 1 to entry: This force is expressed in kN.

3.9

ultimate load

maximum force reached during a static tensile test before the assembly being tested fails to retain the load

Note 1 to entry: This maximum force is expressed in kN.

3.10

safe working load

SWL

rated capacity of the connection device to withstand tensile force

4 Classification, structure and code

4.1 Classification

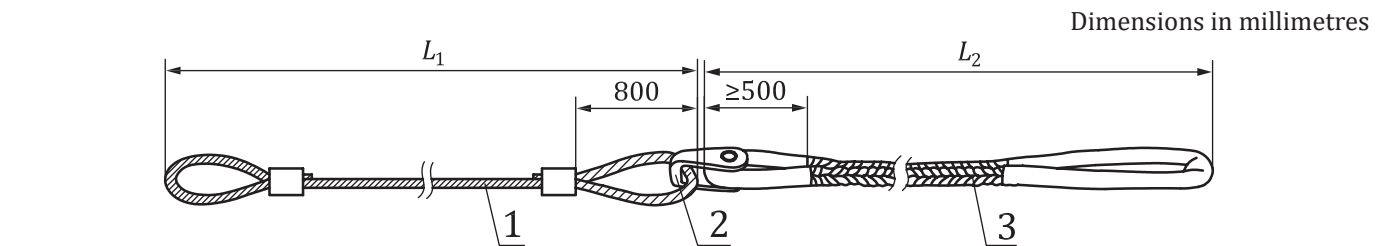
The combined lines can be classified into three types according to the way it can be connected. The three types include T type, M type and C type. The code, type and content of combined line are shown in [Table 1](#).

Table 1 — Three types of combined lines

Code	Type	Content
T	T type combined line	link without roller type combined line, see Figure 1
M	M type combined line	link with roller type combined line, see Figure 2
C	C type combined line	cow hitch type combined line, see Figure 3

4.2 Structure

The T type combined line is shown in [Figure 1](#).

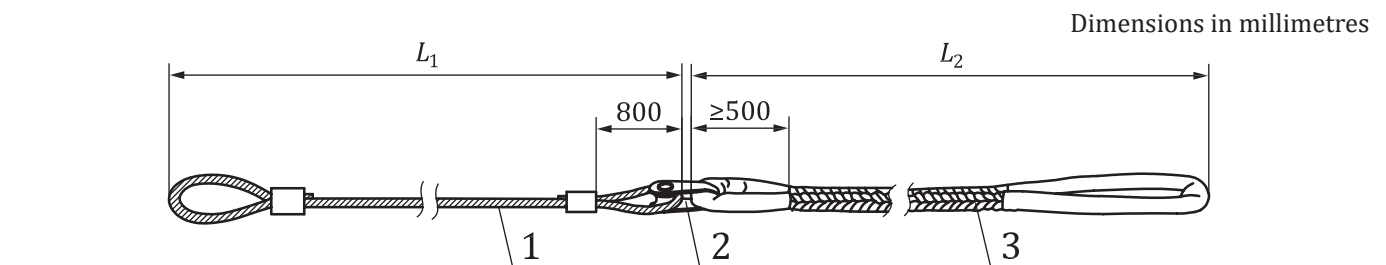


Key

- 1 mooring rope
- 2 link without roller
- 3 tail
- L_1 length of mooring rope
- L_2 length of tail
- NOTE L_1 and L_2 can be selected according to users' demands.

Figure 1 — T type combined line

The M type combined line is shown in [Figure 2](#).



Key

- 1 mooring rope
- 2 link with roller
- 3 tail
- L_1 length of mooring rope
- L_2 length of tail
- NOTE L_1 and L_2 can be selected according to users' demands.

Figure 2 — M type combined line

The C type combined line is shown in [Figure 3](#).