

# Selecting the right rope

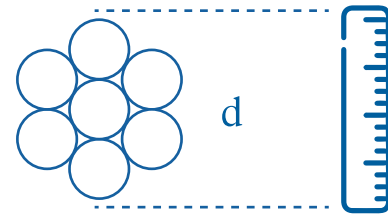
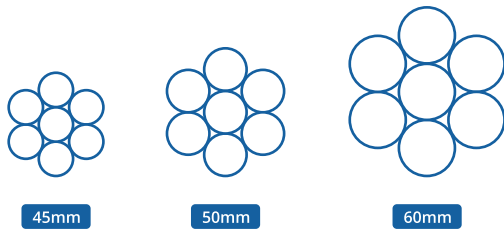
## Why you should be looking at LDBF instead of nominal diameter

Mooring ropes have typically been selected based on their nominal diameter. However, the nominal diameter of a rope is rarely equal to its actual measured diameter. Two ropes with the same nominal diameter can also be of different strength.

Given this, the Oil Companies International Marine Forum (OCIMF) has recommended the Line Design Break Force (LDBF) of a rope as the criterium for mooring rope selection instead. Let's examine why.



## The difference between nominal and actual diameter



**Nominal diameter:** a reference number assigned to a rope based on its approximate diameter (ISO 10325). It is calculated from the linear density of the rope and is often the value used in product descriptions.

**Actual diameter:** a measurement of the circle around the cross section of the rope, usually under a given tension and method (ISO 1968). This often differs from the nominal diameter of a rope.

## Various factors influence the measured diameter of a rope



Construction



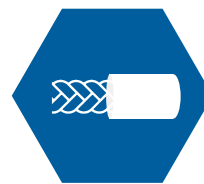
Coating



Load



Design



Cover



Material



50mm



50mm

## Why this matters in mooring rope selection

Choosing the right set of ropes with enough strength to withstand forces from swell, tide, or wind is critical for the safety of the crew during mooring operations and for compliance with international regulations.

Two ropes with the same nominal diameter can have very different LDBFs and linear densities, under various circumstances – in other words, they may not be able to withstand the same amount of force before breaking.

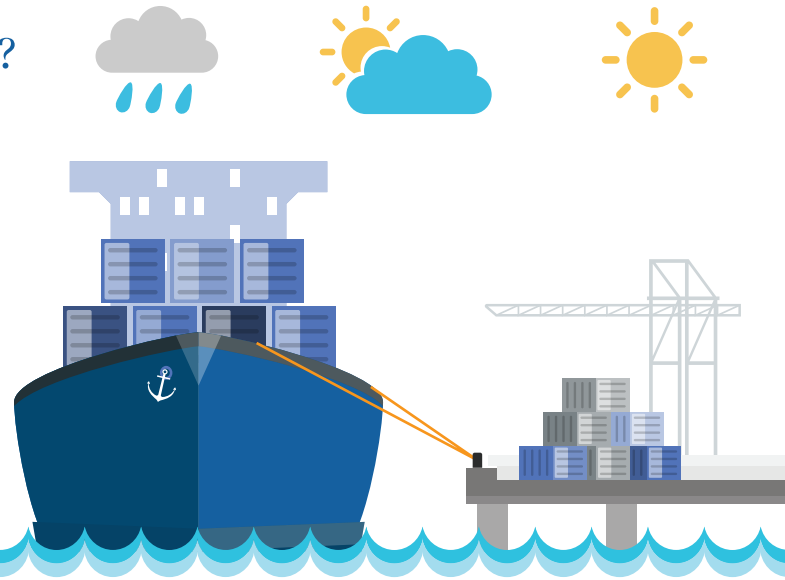
This makes nominal diameter less reliable in determining if a rope will be strong enough for mooring operations, especially when comparing ropes from different suppliers.

# What is Line Design Break Force (LDBF)?

LDBF is the minimum strength at which a new, dry, spliced mooring rope will break, when tested in accordance with OCIMF MEG4.

The required strength of a mooring rope depends on the weight and size of the ship and the weather conditions it will encounter during mooring operations.

When selecting a mooring rope for a specific vessel, the LDBF of the rope needs to be equal to or greater than the Ship Design Minimum Breaking Load (the strength required by a ship's mooring system) to ensure that the rope is strong enough for mooring the vessel.



## Why it's more reliable than nominal diameter

Using LDBF, there is a lower risk of choosing ropes that can be unsuitable for application and of these ropes being rejected by vetting inspectors.

Rather than diameter, selecting a rope with the correct LDBF ensures it is suitable for the Ship Design MBL of the vessel. This also translates to compliance with relevant guidelines and regulations such as OCIMF MEG4, reduced risks for the crew, as well as a lower chance of damage to the equipment during mooring.

Select the right rope for the right application



Reduce damage to equipment during mooring



Crew Safety

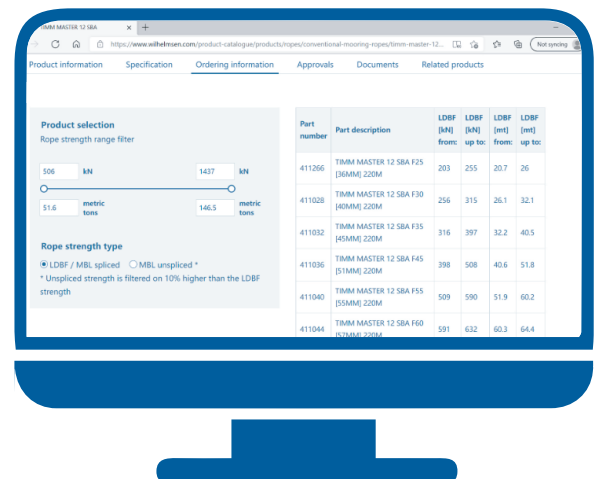


## Simplify rope selection with a rope strength selector

Using a rope selector that factors in LDBF can help streamline the rope selection process. Wilhelmsen's Marine Products Catalogue enables you to compare and filter ropes by strength, so you can easily find the best set of ropes for your vessel.

506 kN 1437 kN

51.6 metric tons 146.5 metric tons



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