

# USE OF FIBER ROPE

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Traditional manufacturer since 1949

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# INSTRUCTION FOR USE

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General specifications for fibre ropes and lines are given in ČSN EN ISO 9554 and other related terms are given below in this document. The technical parameters of fibre mooring lines are given in the relevant mooring line certificates and the manufacturer's line data sheets which are supplied to the user on request.

The lines are tested in accordance with the test methods according to ČSN EN ISO 2307 and the OCIMF regulations.

When using a line, the user must follow the Ship Design Minimum Breaking Load, which is the key to calculating the Working Load Limit – WLL.

However, it is important to bear in mind that in many industries the manufacturer's recommendations

replace the state legal regulations on maximum working loads.

**Responsibility for compliance with these laws, standards and regulations lies with the users of the ropes and lines.**

The marking of the material, the diameter of the rope or line, and the date of manufacture are indicated on the identification label (sign)

## Ship Design Minimum Breaking Load

The minimum breaking load of new, dry mooring lines for which a ship's mooring system is designed, to meet OCIMF standard environmental criteria restraint requirements. The ship design MBL is the core parameter against which all the other components of a ship's mooring system are sized and designed with defined tolerances.

Nylon (polyamide) mooring lines should be specified as break tested wet because nylon lines change strength characteristics once exposed to water and generally do not fully dry to their original construction state.

## Line Design Break Force - LDBF

LDBF is the minimum force that a new, dry, spliced mooring line will break at when tested. This is for all mooring line and tail materials except those manufactured from nylon which is tested wet and spliced. This value is declared by the manufacturer on each line's mooring line certificate and is stated on a manufacturer's line data sheet. When selecting lines, the LDBF of a line shall be 100%–105% of the ship design MBL.

The LDBF for nylon (polyamide) mooring lines should be specified as break tested wet because nylon lines change strength characteristics once exposed to water and generally do not fully dry to their original construction state.

# Working Load Limit - WLL

The maximum load that a mooring line should be subjected to in operational service, calculated from the standard environmental criteria. The WLL is expressed as a percentage of ship design MBL and should be used as a limiting value in both ship design and operational mooring analyses. During operation, the WLL should not be exceeded.

In the same way that SWL is a limit for fixed equipment, the WLL value is used as a limit with the standard environmental criteria and mooring layout when designing mooring systems in establishing mooring system designs. All cordage (synthetic) ropes have a WLL of 50% of the ship design MBL.

# Design Basis Load (DBL)

The design load on a fitting, calculated by multiplying the ship design MBL by the Geometric Factor (GF).

## **Recommendations for rope uncoiling**

### **a) Uncoiling**

When removing the rope from a coil, one should start with the end from the inside (see Figure no. 1). The rope should run out counterclockwise. If the rope is pulled out clockwise, kinks (rope kinking) will occur (see Figure no. 2). If this problem happens, it is recommended to re-place the length of the rope back into the coil, turn the coil over and pull the rope from the centre again. Now the rope should run out counterclockwise and thus without any kinks. Also, it is not advisable to remove the rope from the outside of the coil (see Figure no. 3). After removing the first layers, the coil may collapse, making it difficult to work with the rest of the rope on the coil.

An even better way of uncoiling is by using a turntable. The rope can now be uncoiled from the outside end, as shown in Figure no. 4.

A short length of rope can also be rolled out over the ground, as shown in Figure no. 5.

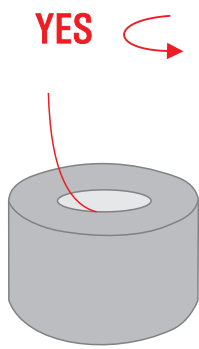


Figure no. 1: **right way of the uncoiling the rope**

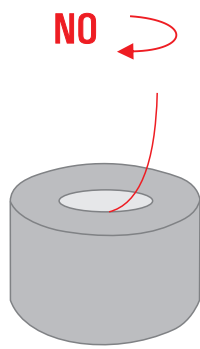


Figure no. 2: **wrong way of the uncoiling the rope 1**

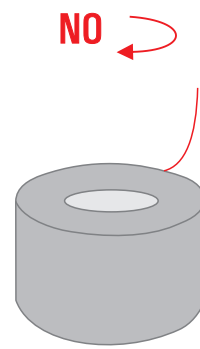


Figure no. 3: **wrong way of the uncoiling the rope 2**



Figure no. 4: **rope uncoiling - turntable**



Figure no. 5: **rope uncoiling - rolling out over the ground**

# RESOURCES

1. OCIMF. Mooring Equipment Guidelines (MEG-4), Fourth Edition 2018
2. ČSN EN ISO 9554 Fibre ropes - general specifications, May 2011

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