PERSONAL FALL PROTECTION EQUIPMENT | **LOW STRETCH KERNMANTEL ROPE**

EN 1891

This summary of EN 1891 does NOT contain the full details of the standard.
It is a simplified summary to provide an overview of the test methods and safety requirements for the product.
The official version of the standard must be consulted if full information is required. Details of the standard are provided at the end of this summary.

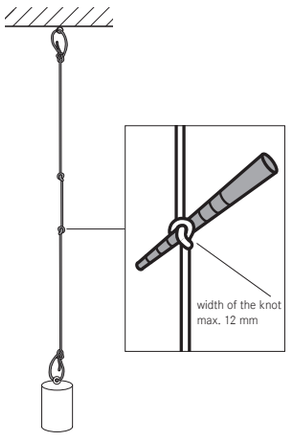
Low stretch kernmantel rope: A rope for use by people in rope access and all kinds of work positioning and restraint.
The core is usually the main load bearing element and typically consists of parallel elements which have been pulled and twisted together in single or several layers, or of braided elements.

Type A ropes: Low stretch kernmantel ropes designed for general use by people in rope access, including all kinds of work positioning and restraint; in rescue and in speleology.

Type B ropes: Type B low stretch kernmantel ropes of a lower performance than type A ropes. Deployed in systems as auxiliary ropes.

SAFETY REQUIREMENTS

KNOTABILITY



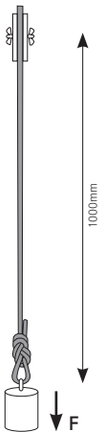
Two single overhand knots are applied to the 3000 mm rope sample with the knot loops running in opposite directions. One end of the rope sample is attached to a suitable fixture. An impact-free load of 10 kg is applied to this piece of the rope for 60 seconds.
A test cone is pushed in the eye of the knot. The maximum width of the knots eye must not exceed 12mm.

STATIC ELONGATION TEST

Static elongation is tested as follows:

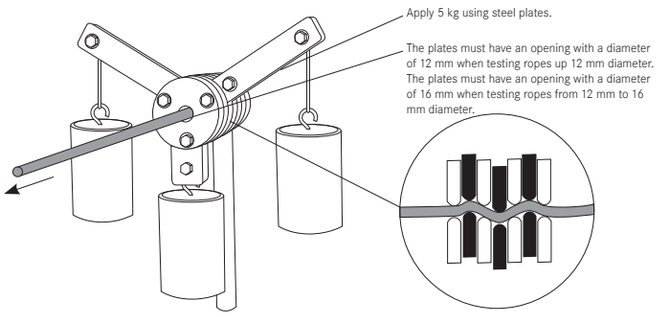
1. Apply a load of 50 kg to the rope; for 5 minutes
2. Apply a load of 150 kg to the rope; for 5 minutes

Elongation may not exceed 5%.



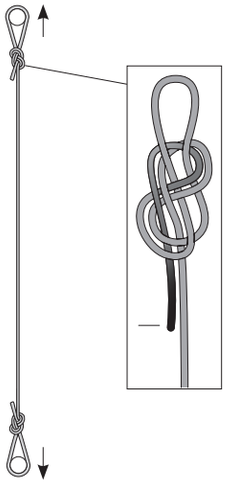
F = 1. 50 kg for 5 min
2. 150 kg for 5 min

SHEATH SLIPPAGE TEST



The rope test sample must be 2250 mm long.
Separate the inserted plates with spacers at an angle of 120° and apply loads of 5 kg. The rope sample must be pulled through the test apparatus five times. Sheath slippage for type A ropes may not exceed 1 %. Sheath slippage for type B ropes may not exceed 1.5 %.

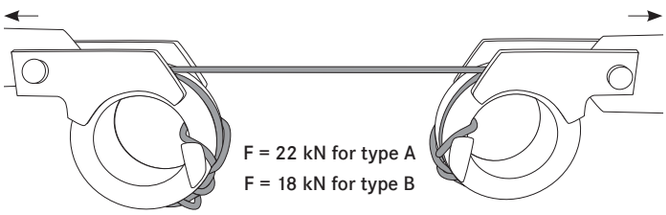
STATIC STRENGTH WITH TERMINATIONS



The low stretch kernmantel rope, including terminations with a figure-of-eight-knot, must be able to withstand a force of 15 kN for type A ropes and 12 kN for type B ropes, each for a period of 3 minutes.

STATIC STRENGTH WITHOUT TERMINATIONS

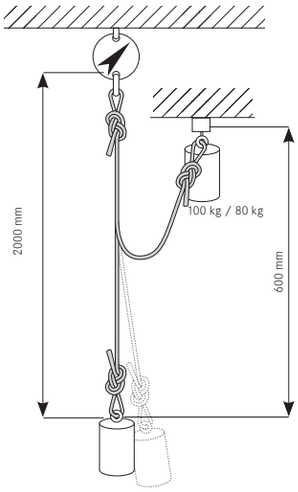
The low stretch kernmantel rope must be able to withstand a force of at least 22 kN for type A ropes and at least 18 kN for type B ropes.



F = 22 kN for type A
F = 18 kN for type B

EN 1891

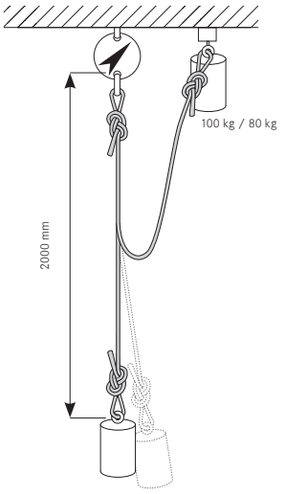
1. FALL ARREST PEAK FORCE



A 100 kg mass is suspended for type A ropes, or a 80 kg mass for type B ropes from the rigid structural anchorage point, by connecting the sample between them for 60 seconds.
The mass is raised by 600 mm and allowed to free-fall.
The peak force is measured.

The peak force must not exceed 6 kN.

2. DYNAMIC PERFORMANCE TEST



A 100 kg mass for type A ropes is suspended, or a 80 kg mass for type B ropes, from the anchorage point.
The mass is released and descends into free-fall.
The test is repeated five times, or until the kernmantle rope is released.
The test specimen has to withstand at least 5 falls.

ROPE DIAMETER

Rope diameter of a rope with low elongation must not be less than 8.5 mm and not greater than 16 mm.

INFORMATION SUPPLIED

The following compulsory information is provided by the manufacturer on the product:

- Reference to user manual;
- Permanent markings at both ends of the rope:
  - Letter A or type A;
  - Letter B for type B;
  - EN 1891 with year of issue;
- Internal markings repeated at least every 1 000 mm over the entire length as follows:
  - Manufacturer;
  - EN 1891 + year of issue rope type A or type B;
  - Year of manufacture;
  - Name of the material(s) from which the low stretch kernmantel rope is made
- CE mark with 4-digit identification number.

For additional information, see either the labelling or the user manual.

Source: EN 1891:1998. Persönliche Schutzausrüstung zur Verhinderung von Abstürzen. Kernmantelseile mit geringer Dehnung.

