

Coatings

Abrasion and heat generation can often be the enemy of synthetic fibre ropes. To that end, Marlow have a range of options to protect single and double braided fibre ropes, reduce fatigue and extend life. These include:

ArmourCoat

- Specially formulated polyurethane coating
- Improves abrasion resistance and durability
- Increases friction, aids handling & splicing
- Provides colour coding (Black as standard, other colour options available on request)

CoolCoat

- Enhances bending performance
- Reduces yarn on yarn abrasion and heat generation by a factor of 2
- Applied at rope manufacture stage

GripCoat

- Synthetic Polymer Anionic Coating
- Prevents ingress of dirt and abrasive particles
- Provides "self healing" properties
- Increases coefficient of friction
- Significantly improves core/cover adhesion

Dyneema XBO

- Improves flex fatigue experienced in continuous cyclic bending
- Reduces yarn on yarn abrasion and heat generation by a factor of 5
- Applied at yarn manufacture stage – can be used in conjunction with any of the above coatings

For further information on all Marlow products, including construction, physical properties, elongation characteristics and termination options, please see the relevant technical data sheets.

Physical Properties

Load Extension Characteristics

Extension and Elasticity
Synthetic fibre load-extension characteristics are non-linear and time dependent. These characteristics are important as they will determine rope behaviour. Over all extension is made up of several elements:

Permanent extension is non-recoverable and will occur when a rope is first used. Individual fibre components of the rope will "Bed In" to their preferred position.

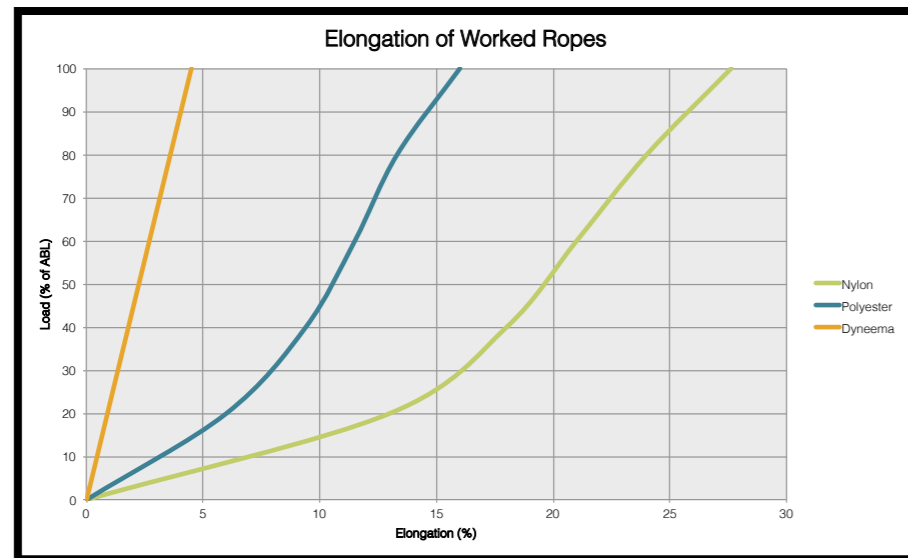
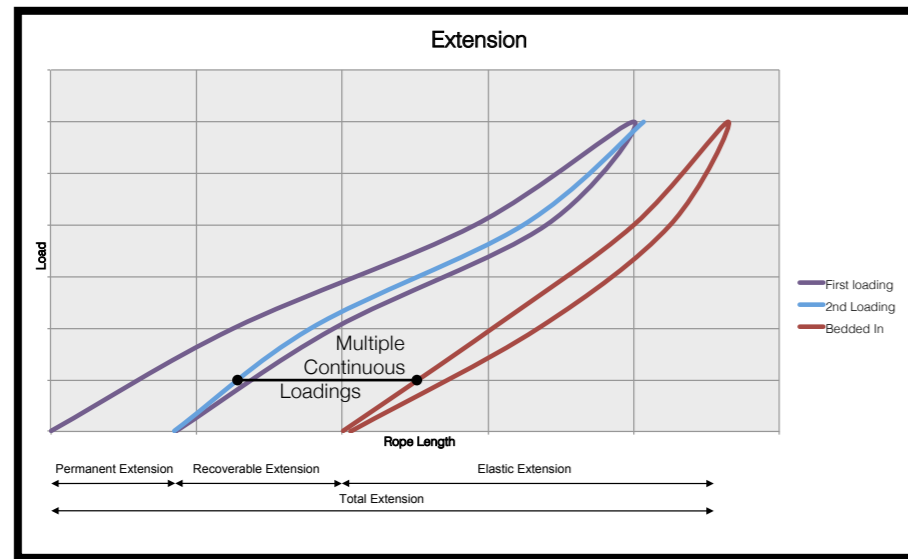
Higher loads will experience a higher degree of bedding-in and increase the "stiffness" of the rope. This is often known as "Storm Stiffness" versus the normal loads of "Tidal Stiffness".

Extension due to "Bedding-In" will continue over subsequent multiple loadings until a "plateau" is reached. If the load is released, over time some of this further extension will be recovered. This is known as **Visco-Elastic Extension**. Ropes subjected to occasional high loads will be influenced by this element of extension.

Elastic Extension occurs with a "Bedded-In" or "Worked" rope and is immediately recoverable upon the release of the load. Elastic extension will dominate a rope's behaviour in a continuously working / cycling environment.

Creep is also permanent, non-recoverable extension and occurs at the yarn molecular level when the rope is under continuous load. Creep can have a significant impact on a rope's behaviour in situations of continuous load.

The graph (right) compares the load-extension characteristics of worked ropes but does not include permanent extension.



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