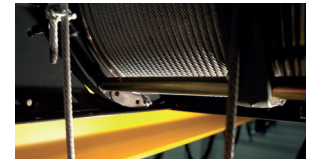


Synthetic rope vs. steel wire rope



FEATURE	SYNTHETIC ROPE	STEEL WIRE ROPE
ENVIRONMENT		
Low temperature	-40 C (-40 F)	-20 C (-4 F)
High temperature	+40 C (+104 F)	+55 C (+131 F)
UV resistance	Medium resistance	High resistance
Humidity	Maximum resistance	Good resistance
Clean assembly/maintenance	Cleaner	Lubricated steel wire prone to attracting dirt
Dust/abrasion	Resistant to abrasion	Lubricated steel wire prone to attracting dust and accelerating abrasion
Electrical conductivity	Non-conductive in dry environments	Conductive
Corrosion	Acid/alkyd resistant	Highly corrosive to acid/alkyd
Rust	Rust-proof	Subject to rust
PHYSICAL PROPERTIES		
Material	High performance synthetic	High strength steel
Breaking strength	Very high (consistently exceeds 5:1)	High (meets or exceeds 5:1)
Construction	Braided	Strands
Rope variations	One	Multiple (left lay/right lay, etc.)
Shape retention	Retains and/or returns to original shape	Does not retain original shape
Friction	Low coefficient of friction increases rope life	High coefficient of friction reduces rope life
Rotation resistant	Yes	No (rotation resistance requires a special rope)
Visibility	High visibility red	Low visibility gray
Weight	Light - 80% lighter than steel	Heavy
Kink resistance	Will not kink	Will kink and requires replacement
Resistance to bending	Returns to original shape with no permanent damage	Will bend and deform, requires replacement
Bird cage resistance	Returns to original shape with no permanent damage	Will bird cage and deform, requires replacement

The data is based on the use of a hoist/crane in a normal and recommended manner, under standard conditions. This is not a warranty.

Synthetic rope vs. steel wire rope

FEATURE	SYNTHETIC ROPE	STEEL WIRE ROPE
DURABILITY		
Rope lifetime	Better than steel	Good
Sheaves lifetime	Better than steel	Good
Drum lifetime	Better than steel	Good
HANDLING		
Safety	Does not barb, reduced chance of cuts to hands, less ergonomic injuries due to lighter weight and flexibility	Hand injuries due to steel wire fraying, ergonomic injuries due to handling more weight and rigid material
Cleanliness	Clean, smooth	Greasy, dirty, rough
Installation at heights	Easy - 80% lighter than steel rope	Heavy and harder to install
On-site rope change	Easy - lighter and more flexible material	Heavier and rigid
SERVICE		
External inspection	Easy visual	Moderate, can require advanced inspection techniques
Discard criteria	Based on wear - easy visual inspection	Based on amount of wire breaks, deformation
Lubrication	Not required	Regular lubrication required
Core inspection	No core, easy inspection	Difficult, requires special tools and complex inspection
Time to replace rope	Short - lighter and flexible, easy to handle	Longer - heavier and rigid
SUSTAINABILITY		
Toxicity	Non-toxic	Uses petroleum based lubricant
Recyclability	Not recyclable at the moment	Yes

The data is based on the use of a hoist/crane in a normal and recommended manner, under standard conditions. This is not a warranty.

This publication is for general informational purposes only. Konecranes reserves the right at any time, without notice, to alter or discontinue the products and/or specifications referenced herein. This publication creates no warranty on the part of Konecranes, express or implied, including but not limited to any implied warranty or merchantability or fitness for a particular purpose.