



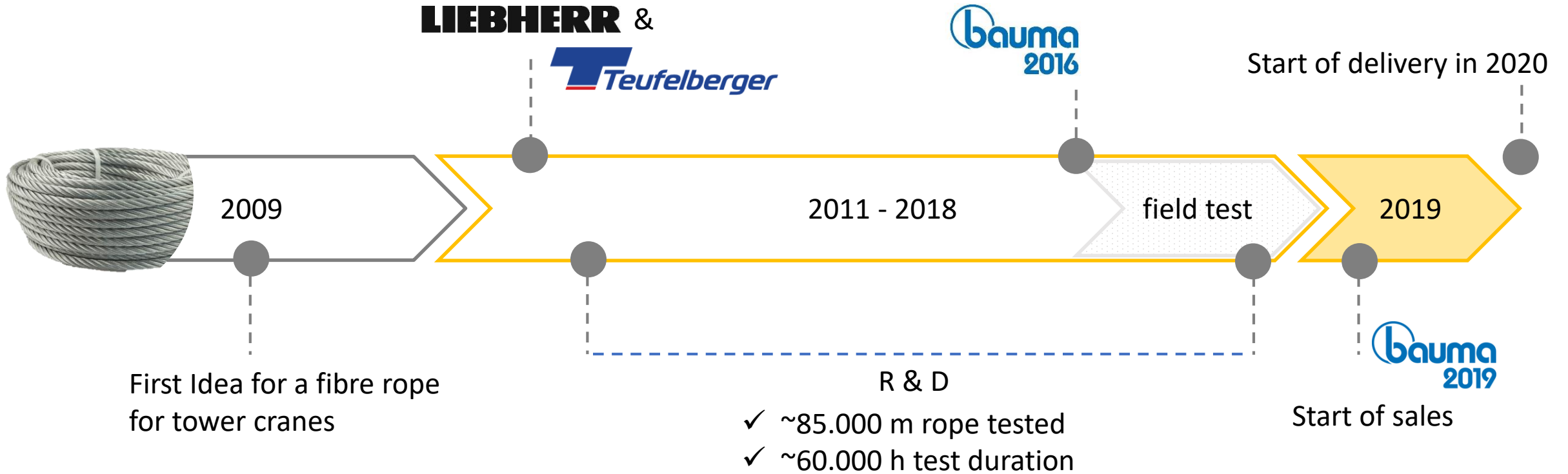
**INTERNATIONAL  
IC TOWER  
CRANES  
CONFERENCE & RECEPTION**

**Thomas Herse**

Head of Tower Crane Technology, LIEBHERR

**Fibre ropes for tower cranes**

# Project Roadmap – Liebherr & Teufelberger



## Research and Development – test benches in Biberach



special test benches ...



... 2.000.000 bending cycles  
& 140.000 times up and  
down ...



... in hot and cold,  
salty and sandy  
conditions ...



... until failure

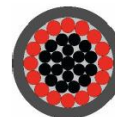
# Discard criteria of the fibre rope

optical wear indicator



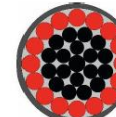
**Easy, Fast & Safe**

degree of damage  
0%



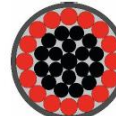
- ✓ outer cover is completely ok
- ✓ outer core is 100% protected
- ✓ inner core is 100% protected

degree of damage  
90%



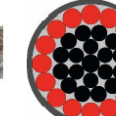
- ✓ wear out of the colored and grey fibers
- ✓ outer core is visible (max. 2 braids)
- ✓ inner core is 100% protected

degree of damage  
40%



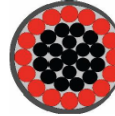
- ✓ clearer wear of the colored fibers
- ✓ outer core is 100% protected
- ✓ inner core is 100% protected

degree of damage  
95%



- ✓ wear out of nearly all fibers
- ✓ outer core is more visible (max. 3 braids)
- ✓ inner core is 100% protected

degree of damage  
60%



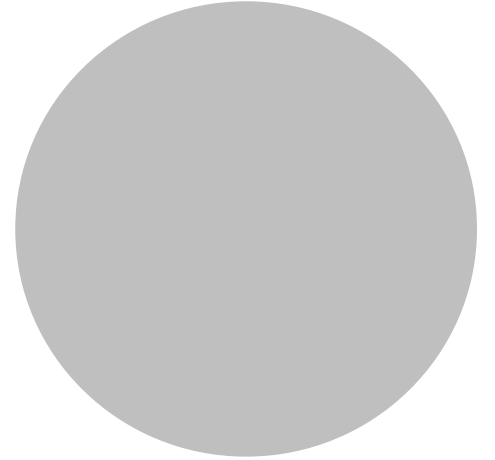
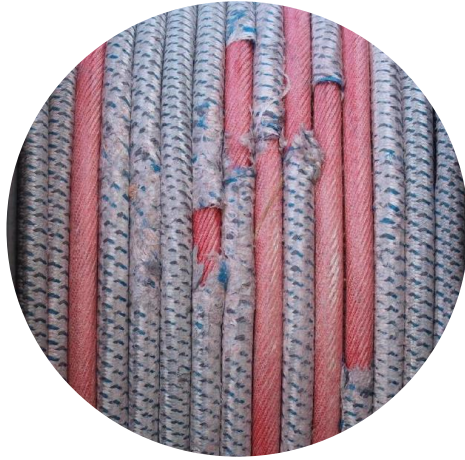
- ✓ wear out of the colored fibers
- ✓ outer core is 100% protected
- ✓ inner core is 100% protected

degree of damage  
100%



- ✓ wear out of all fibers of the outer cover
- ✓ outer core is more than 50% visible
- ✓ inner core is 100% protected

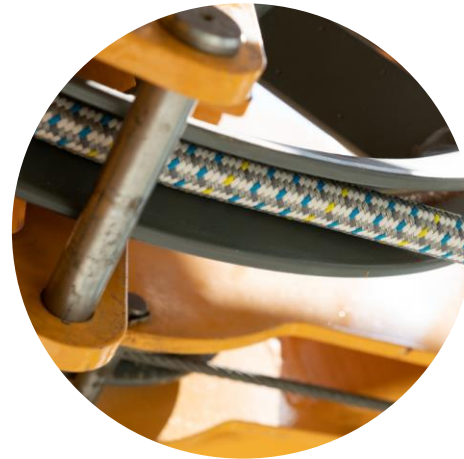
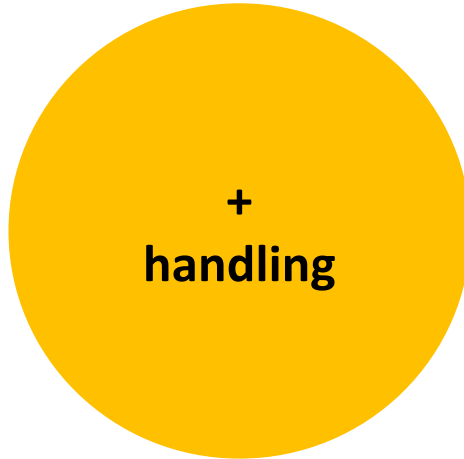
# The benefits for tower cranes



Operators check is easy – just look for **red**.

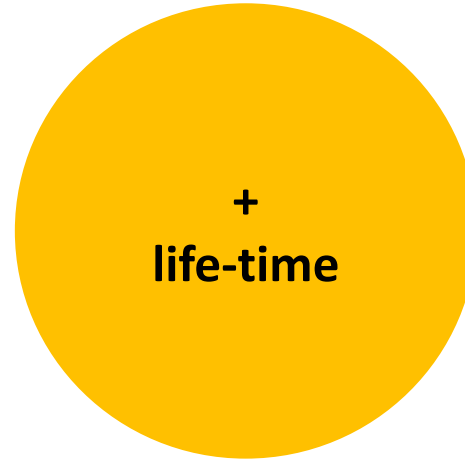
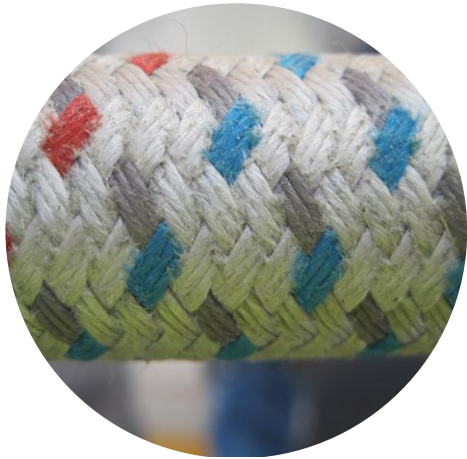
**Plain safety!**

# The benefits for tower cranes



Not just a phrase:  
**faster, easier and cleaner assembly**

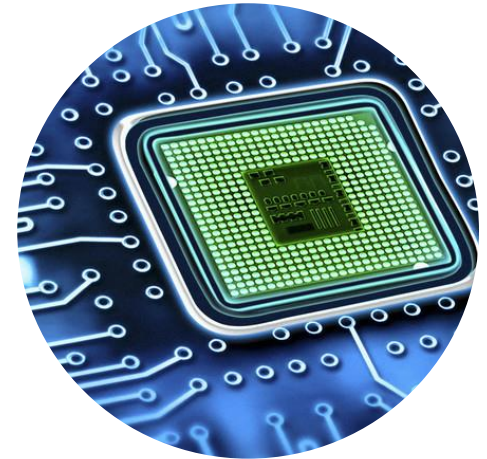
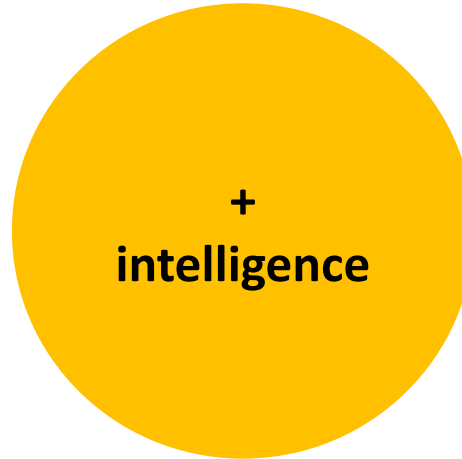
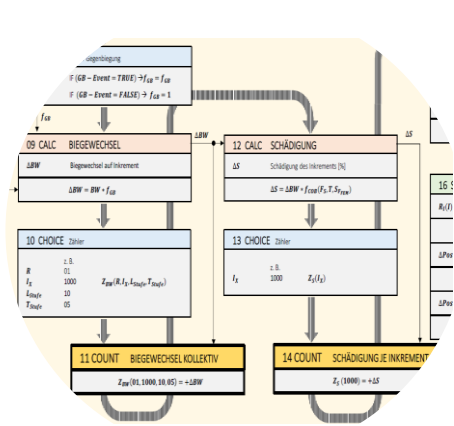
# The benefits for tower cranes



Lasts longer and longer and longer...

**~ 4 times – 7 to 9 years on site**

# The benefits for tower cranes



Litronic Bending Algorithm  
intelligent condition monitoring



# The benefits for tower cranes

+ 20 %



+  
load-  
performance

The big ,why'!  
more load-performance

## Tower cranes on site



- ✓ currently 14 cranes on the construction site
- ✓ more than 3 years site experience
- ✓ 10 to and 12 to maximum load
- ✓ different types of cranes (EC-B & EC-H)



# First Fibre Crane – 172 EC-B

- ✓ working since 2016
- ✓ 4 different sites

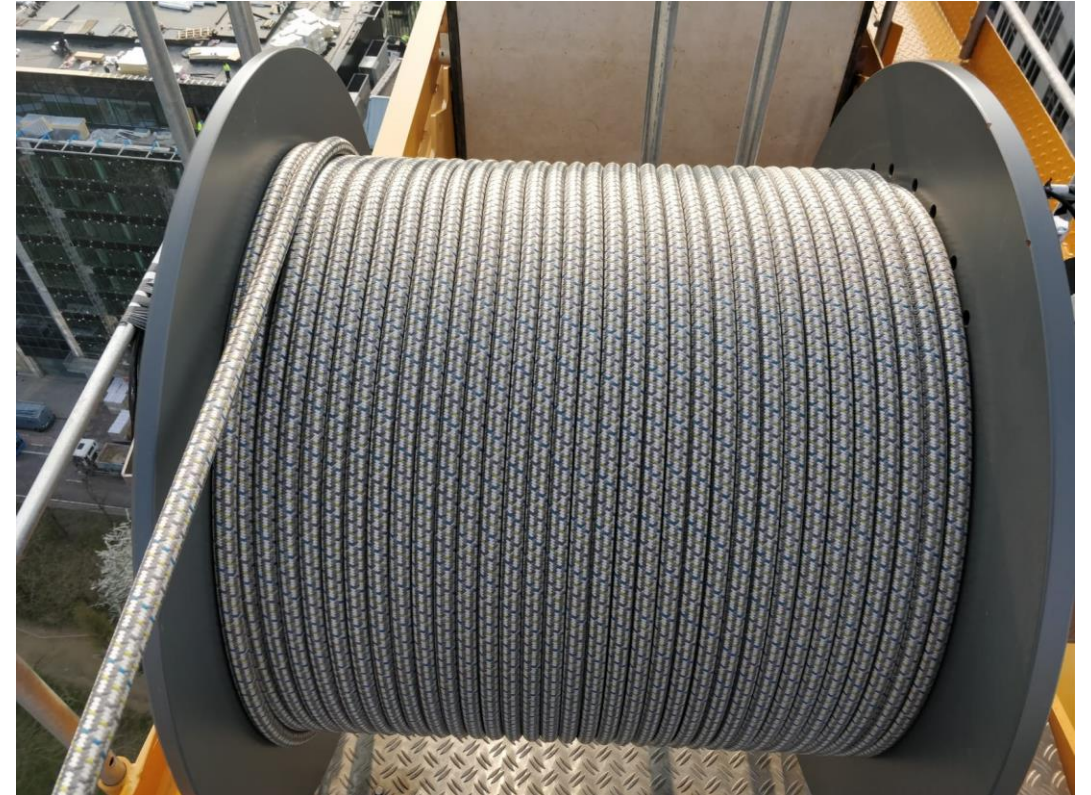


# site impressions 250 EC-B / 278 EC-B

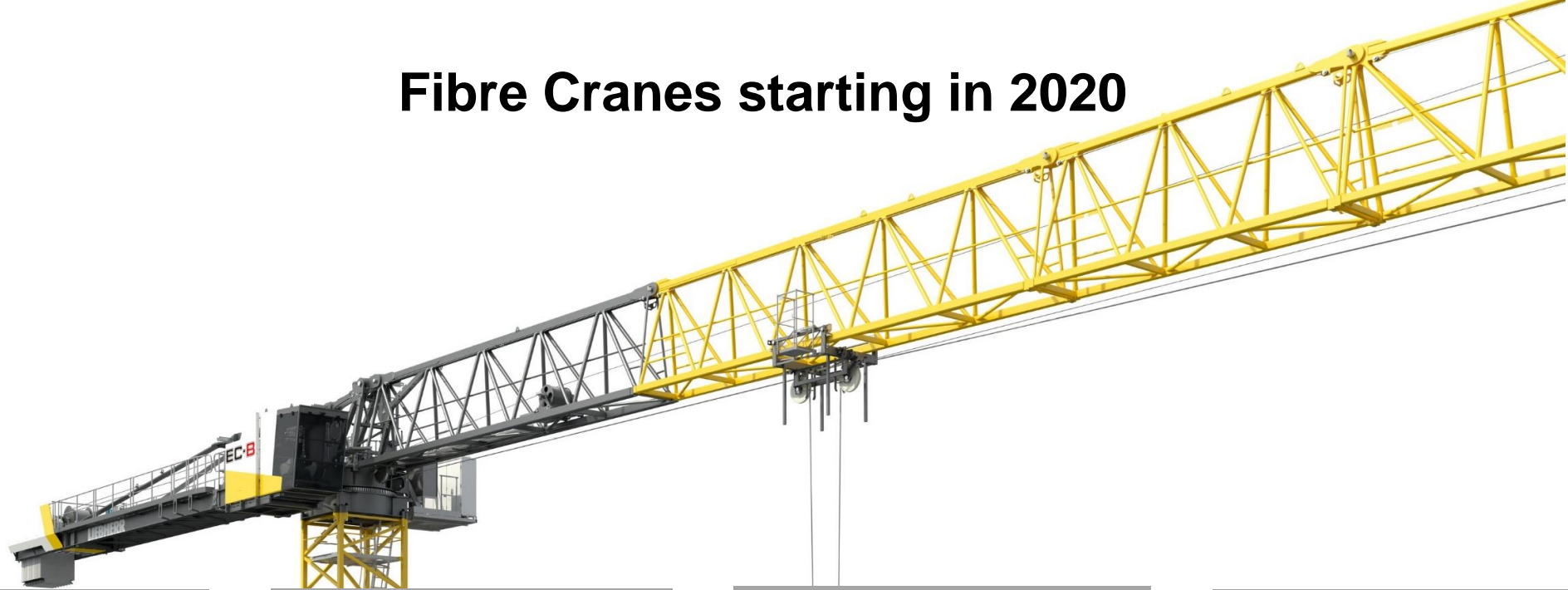


Paris

Brussels



# Fibre Cranes starting in 2020



**240 EC-B 10 Fibre**

up to + 250 kg  
up to +13%

**240 EC-B 12 Fibre**

up to + 350 kg  
up to +21%

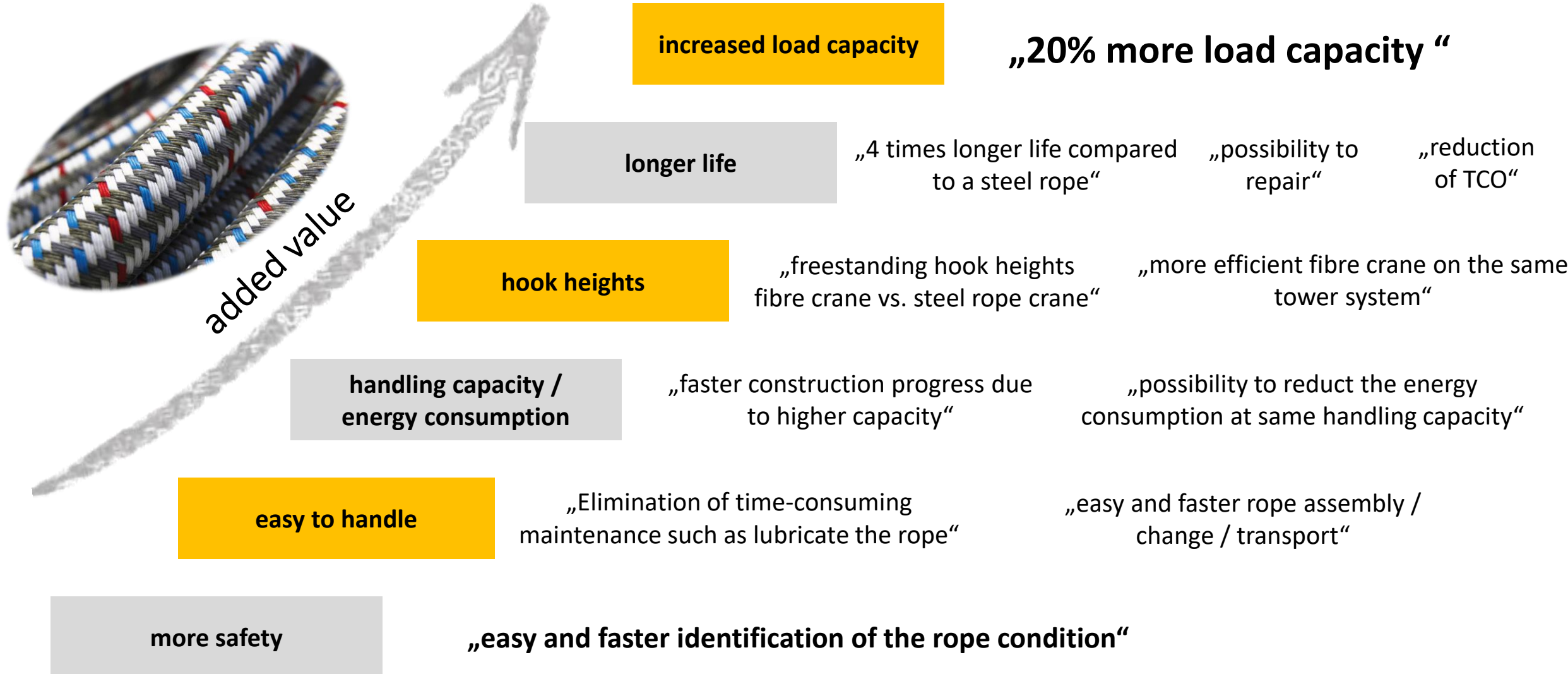
**278 EC-B 12 Fibre**

+ 600 kg  
up to +27%

**370 EC-B 12 Fibre**

+ 400 kg  
up to +20%

← **200 mt – 400 mt** →



**Thank you for listening**