

# Replacing Steel Wire for Coring and CTD

## **Dynlce Fiber solutions**

- Lightweight, strong & durable



# HAMPIÐJAN GROUP

- One of the largest fibre ropes manufacturers in the world
- 51 subsidiaries, 74 service stations on 4 continents
- 2.000 employees worldwide
- Turnover of around € 300 million
- HQ in Iceland, Icelandic owned, established in 1934
- Central manufacturing and stock facility in Lithuania, EU
- Active in many diversified markets worldwide

“Relentless Product  
Development is the  
Essence of Our Being”

# Quality and Innovation

- Innovation is a key part of company culture
- Inhouse laboratory, two engineering centers and a testing facility
- Over 40 patents filed under US and EU law
- Hampidjan is ISO certified by DNV
  - ISO 9001
  - ISO 14001
  - ISO 18001



# What we do?

**HAMPIDJAN** **ADVANT**

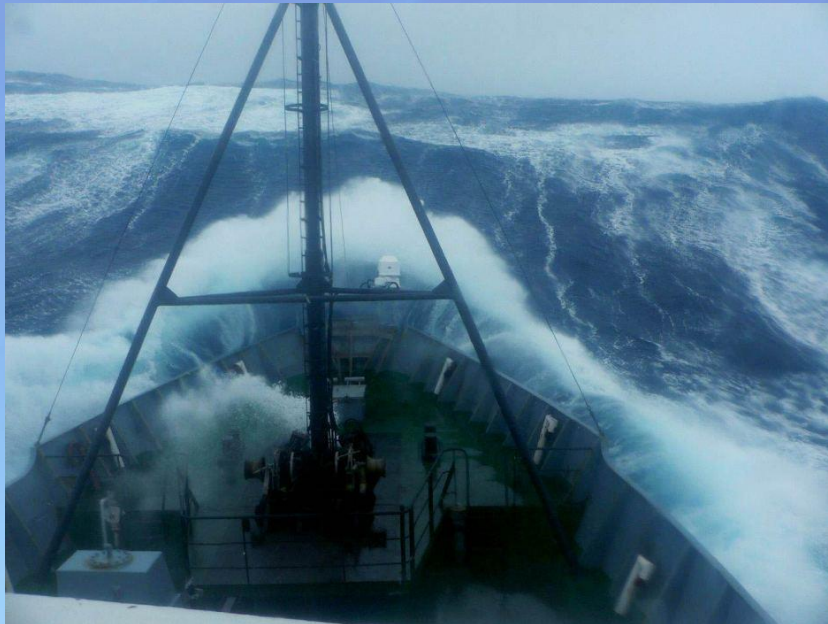


**HAMPIDJAN**



# Winch Ropes

- Tested for 21 years in the most extreme conditions
- Trusted by the worlds most dangerous professions





# Winch Ropes

- Hampidjan Offshore has been one of the worlds main supplier of winch ropes for more than a decade
  - Fishing
  - Oceanography
  - Offshore
  - Deep Sea Mining
  - Military
- Extensive experience for over 17 years
- World longest rope made, used in deep sea mining





# Benefits Over Steel Wire

- Lifetime is about 3 times longer than in existing applications
- 7 times lighter
  - Employee safety
- Faster change time of ropes
- Much higher visco-elasticity, minimizes abrasion on machine parts
- Almost no wear and tear on machinery
  - Hoist drum and point sheave
- Reduced maintenance
- No rust, no greasing needed



# Unique Design

What is the difference between us and “them”?

## Warp:

- High lateral stiffness
- Steel-like properties
- Strength member protected
- Optimized for spooling

## Standard fibre rope:

- Soft, low lateral stiffness
- Strength member not protected
- Not recommended for spooling under tension





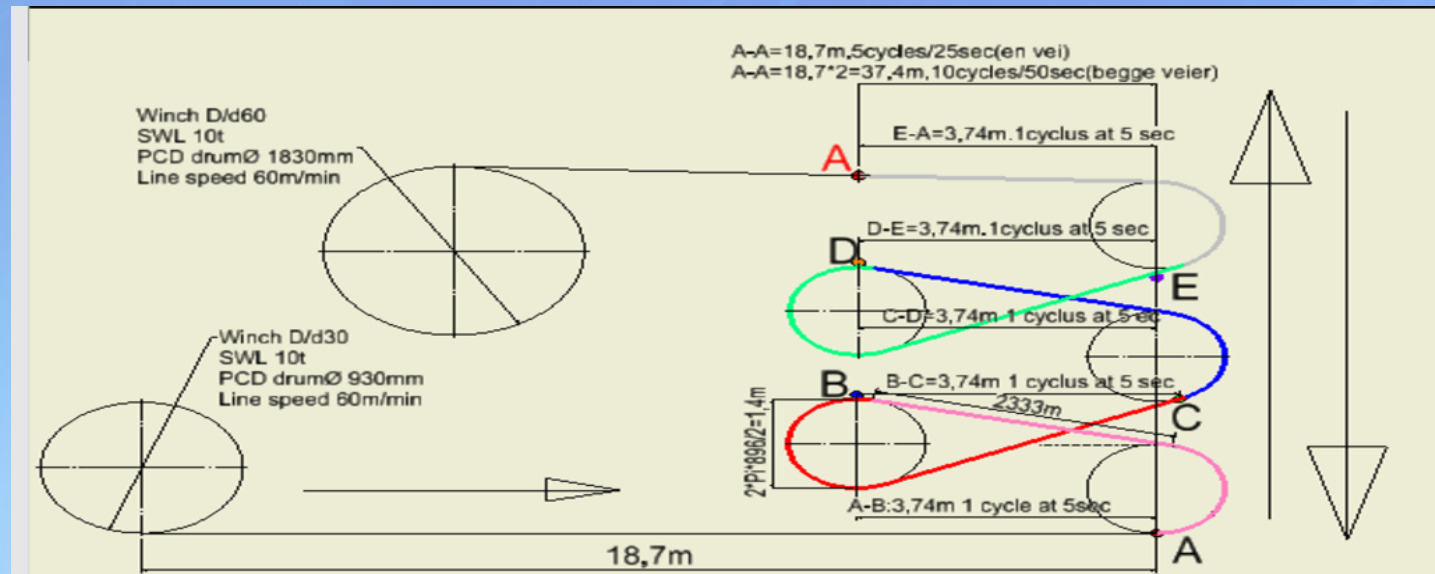
# HAMPIDJAN Winch Ropes

- Reverse engineered from steel wire
- Spools, feels and looks like a steel wire on a winch
- Strength member protected at all times from particle ingress from environment
- Best performing fibre rope in multilayer spooling

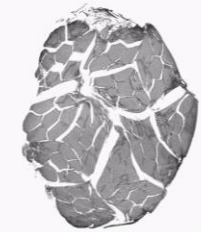
# The Importance of Construction

Extensive testing proves that our construction works

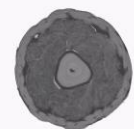
- Protects the all-important fibre
- Increases the lifetime of the rope



Standard HMPE SK78



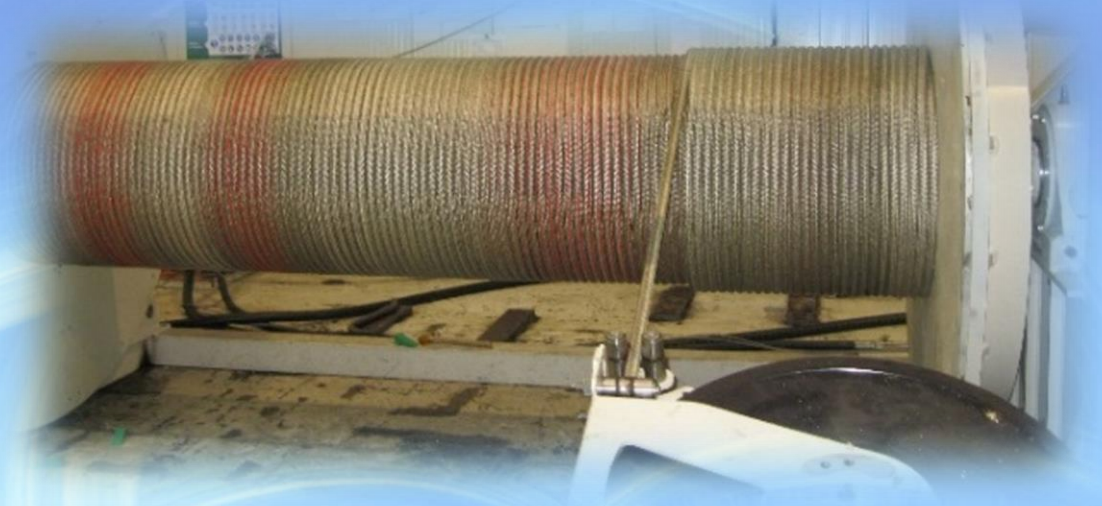
DYNICE Winch Warp





# DYNICE Warps

- Around 2.400 kilometers in use worldwide
- By far the most sold fibre rope for winches in the world
- Clausthal University in Germany; rope proven to spool similar to steel wire, closest to any steel wire rope tested
- In use up to 21 layers
- Bending radius similar to steel wire



# M/V Kamei

- 24,8mm **DYNICE** Winch Warp
- 16.000mtr EWL
- Rapp Hydema winch system
- Japan Agency for Marine-Earth Science and Technology
- Generic Oceanographic vessel





# M/V Meteor IV

- 24,8mm **DYNICE** Winch Warp
- Kongsberg winch system
- 12.000mtr EWL
- German Federal Ministry of Education and Research
- Generic Oceanographic vessel



KONGSBERG



**DYNICE** TERRA PRIMA

**HAMPIÐJAN**

# M/V REV Ocean – One Healthy Ocean

- Privately owned oceanographic vessel, available for rent!
- REV – Research & Expedition vessel
- 30mm **DYNICE** Winch Warp
- 6.000 mtr EWL



**HAMPIDJAN**



# Seabed Worker - Swire

- 44mm **DYNICE** Winch Warp
- Rapp Hydema winch system
- Original delivery of 4.000mtr
- 2.000mtr extension added to the rope 4 years later
- Recovery of moon rocket Apollo 6 motors by Jeff Bezos



HAMPIDJAN

# Other interesting projects

- **Airseas – Seawing**
  - Channeling wind energy
  - Automated Kite System
- **Magellan**
  - Salvage and recovery
  - **DYNICE** winch warp
- **Markey Machinery**
  - Korean Oceanographic vessel
  - **DYNICE** winch warp





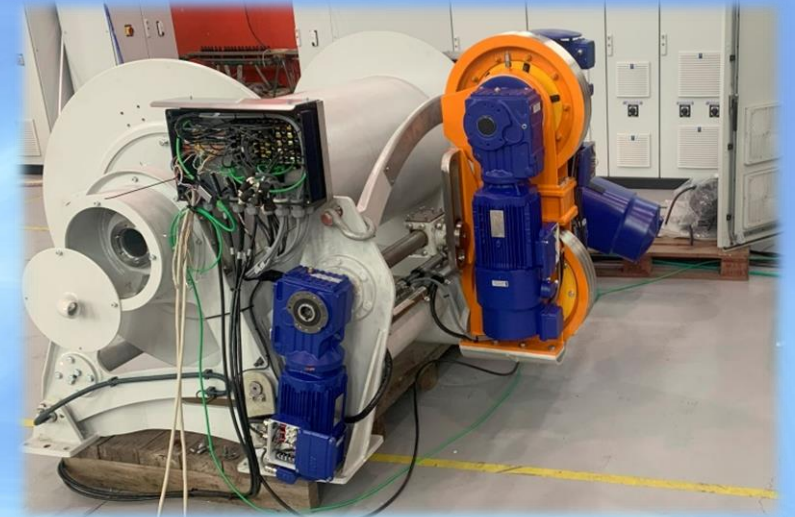
# CTD Fibre Cables

- **DYNICE** Data – Decades in the fishing industry
- Coax data transfer
- Max length of 3.000mtr

Dynlce Data					
Overall diameter	Breaking strength unspliced	SWL at 5:1	Density	Weight of cable in air	Weight of cable in sea
<i>mm</i>	<i>ton</i>	<i>ton</i>	<i>kg/dm3</i>	<i>kg/m</i>	<i>kg/m</i>
12.4	7.5	1.4	1.35	0.163	0.038
13.6	9.5	1.7	1.25	0.181	0.030
Copper conductor					2,19 mm2
Copper screen with >95% coverage					4,17 mm2
Resistance of conductor					11,0 ohm/km
Resistance of screen					5,7 ohm/km
Impedance					41 ohm
Capacitance					151 pF/m
Attenuation at 40 kHz					0,023 dB/km

# CTD - The Future?

- **DYN**ICE Optical Data
- Up to 30 Gb/s – 200.000 times more than coax
- Specially designed winch system
- Max length of 3.000 mtr

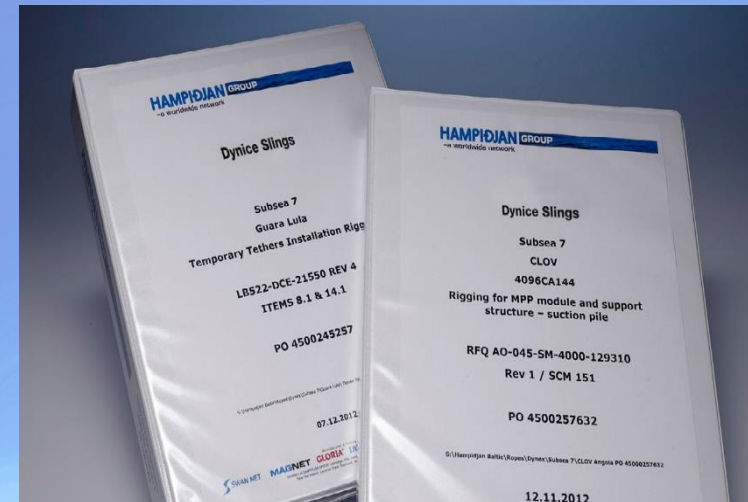


**HAMPIÐJAN**



# Comprehensive Certification

<b>DNV·GL</b>	
<b>DESIGN VERIFICATION REPORT</b>	
DVR-P261.1H-J-5907 Rev.: 0	
<b>Particulars of Design</b>	
Manufacturer:	<u>UAB Hampidjan Baltic</u>
Location:	<u>Siauliai, LITHUANIA</u>
Purchase order no:	<u>SAIPEM S.p.A. ref 1083804 / SWRP</u>
Installation:	<u>Offset Installation System for Subsea Well Response Project</u>
Project no:	<u>PP165295 act 30</u>
NCert no:	<u>A0349430</u>
This is to verify that the design of:	
<b>Ropes for Offset In:</b>	
<b>Quantities: 1 x 150</b>	
has been reviewed an	
[1] Offshore Standard	
<b>DNV·GL</b>	
<b>SURVEY REPORT</b>	
<b>FOR FIBRE ROPE</b>	
Report No: <b>N1422V6V</b>	
<b>Particulars of Product</b>	
Product Name:	<u>Dynice Warp</u>
Type designation:	<u>56 mm</u>
Application/context:	<u>Sample (spliced at both ends) for testing</u>
Serial/Tag no:	<u>coil no. WA520 / Test no.S23045</u>
The product is intended for:	<u>Palfinger A-frame project</u>
Requirements are based on:	<u>ISO 2307:2010</u>



**HAMPIÐJAN**

# Thank you

Questions?

**HAMPIDJAN**