CL TORQUE

SOLID CARBON TORSIONAL FORESTAYS

MADE IN SWITZERLAND
SINCE 2000

AS 9100D AEROSPACE & DEFENCE CERTIFIED

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01
PROJECTS

18m > 50m+
Manual furling units
Hydraulic furling units
Reckmann, Cariboni, Winmar, KZ interfaces and more
250NM > 2000NM working torque

MORGANA

SAUDADE

KENORA

PRB

VISIONE

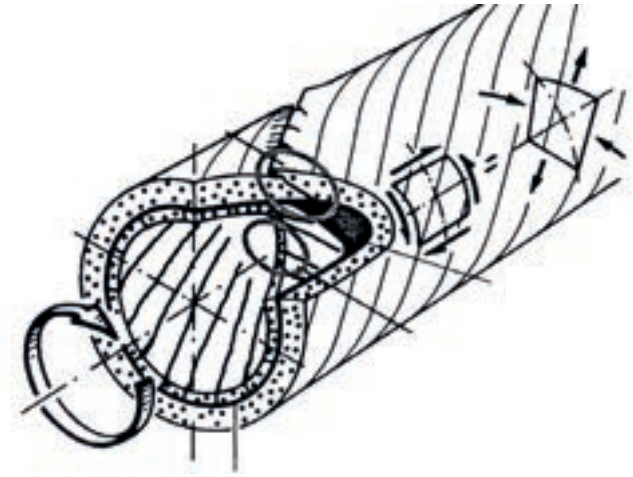
SAMURAI

CANOVA

KAURIS IV

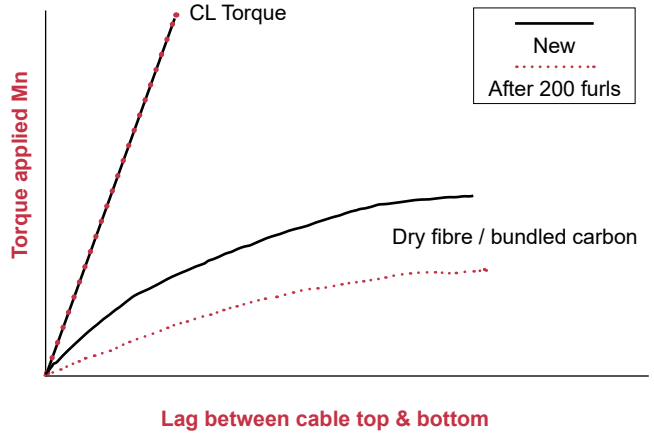
Carbo Link

02
MATERIAL PROP-ERTIES



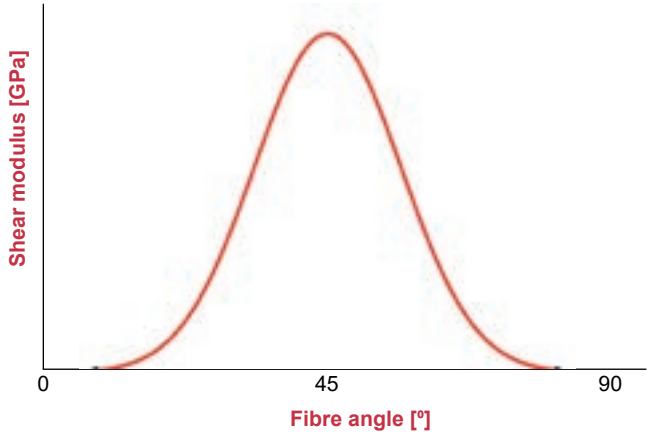
SEPARATED LOAD PATHS

- Unidirectional fibres at the core transfer tensile load
- +/-45 bi-axial fibres on the outer layers transfer all torsional load
- Solid +/-45 fibres are stiff in both tension and compression
- This drives 99% torsional efficiency during the furl



ESSENTIAL TO PLACE FIBRES IN THE SAME DIRECTION AS THE LOAD PATH

- Outer layer of +/-45 fibres ensure the cable is always at the maximum shear modulus
- Cable is stiff in both tension and compression
- Driving the most efficient furl
- Any other production process result in compromises to fibre angle
- Results in reduced torsional stiffness and significant lag after even the 1st or 2nd furl



ADVANTAGES

- Direct torque transfer from bottom to top
- Torque behaviour independent to stay tension
- Cable can be furled in both directions
- No loss in torsional stiffness from 1st to 200th furl
- Specifically designed for desired torque requirements

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ADVANTAGES

CARBO-LINK TORQUE CABLES

- Proven torsional efficiency
- Minimal lag from furling unit to top swive
- Can be furled in both directions
- Consistent behaviour from 1th to 200th furl
- Specifically designed for the torque requirements
- Sailed over 80,000NM on IMOCA 60 ‘PRB’
- 2 laps around the planet with IMOCA 60 ‘Finistere Mer Vent’ plus all IMOCA qualifiers and training
- Saudade, Canova, Kenora, Kauris IV sailed many miles + competed in numerous regattas

CARBO-LINK SOLID CABLES

- Toughened resin = ultimate chafe & impact resistance
- No creep, bedding in or elongation over time
- No need to send away for service
- Simple health monitoring = visual inspection and NDT
- Bespoke fittings = simple interfacing with all hardware

04
OUR EXPERIENCE

VISIONE

- Limiting the oil flow to the furling unit is the safest way to not overload the system

- Most of our cables are designed for between 800NM and 1000NM working torque
- Real-time usage across all boats is around 600NM - 650NM for superyachts

- It is not possible to reef the headsail or to partially furl through a tack
- Flexi-snap battens have not proved to be a problem with Carbo-Link torque cables
- Successful collaboration and interfacing with Reckmann, Carboni and WinMar
- Furling with more tension in the forestay results in the most efficient furl
- However, ultimate forestay tension is limited by the safe furling load of the swivel
- Please refer to manufacturers guidelines for all swivel and furling unit information & specifications

05
SUMMARY & CONTACT

KEY TAKEAWAY

- Minimal lag
- Highest torsional stiffness in tension & compression
- No reduction in torsional stiffness over time
- Simple inspection & service on-site

MOVING FORWARD

- Assign designated Project Manager
- Finalise specifications, project deliverables, location and time frame
- Assess furling unit details, such as flow and torsional capacity
- Explore interface solutions with furling unit
- Discuss upper swivel concepts & interfaces
- Engineering analysis & approval
- Produce cable and deliver for dressing
- Dress, step & sea trial to configure the system

CONTACT

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