



FRANKLIN OFFSHORE

# FRANKLIN OFFSHORE RENEWABLE ENERGY

2022 . I



# WHO WE ARE

## A World-Class Company

The Franklin Offshore Group is a leading integrated provider of quality rigging and mooring equipment and services to the offshore construction, oil, gas, exploration, production and renewable energy industries.

We provide operational excellence and promote the high quality Franklin brand of products and services to complete our global presence.

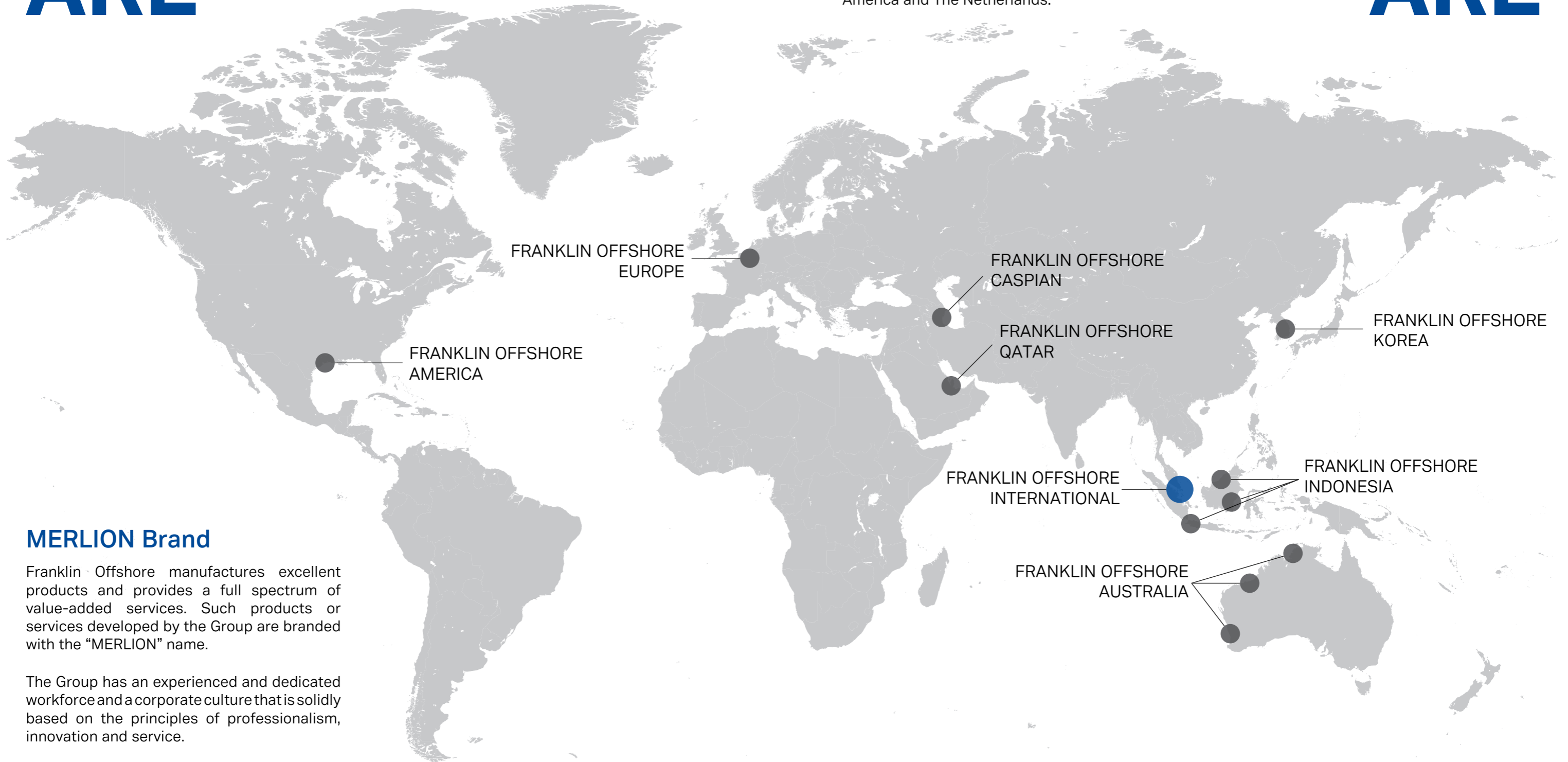
We provide a comprehensive integrated solutions for our customers' Rigging, Mooring and Inspection requirements.

## Global Reach

Franklin Offshore is a leading global provider of steel wire rope and all types of rigging and mooring equipment complete with added value support services to the onshore / offshore construction, oil, gas exploration, production and renewable energy industries.

Established in 1985 in Singapore where it is headquartered, the Franklin Offshore Group has a global presence covering Australia, Indonesia, South Korea, Azerbaijan, Qatar, United States of America and The Netherlands.

# WHERE WE ARE



## MERLION Brand

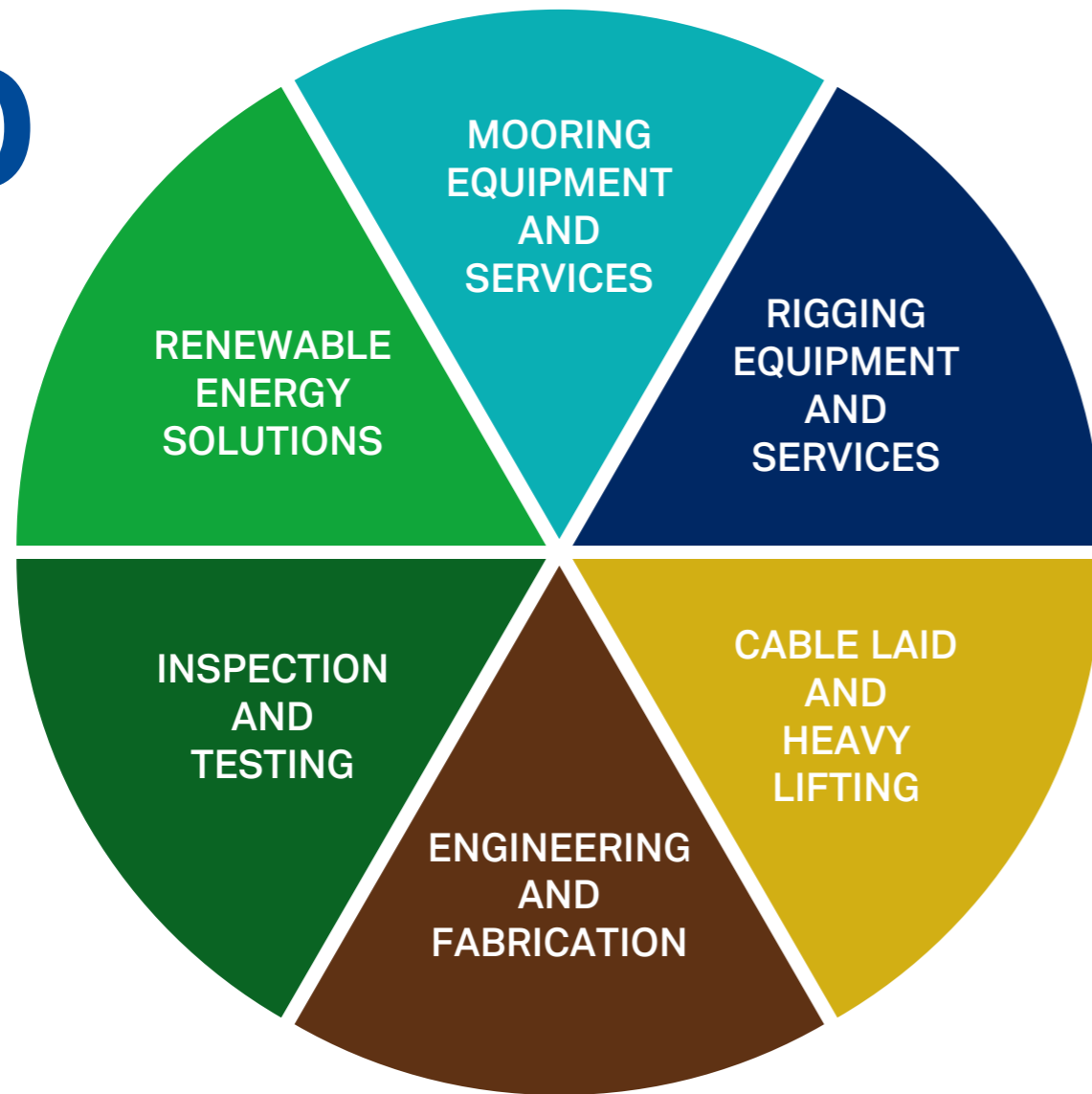
Franklin Offshore manufactures excellent products and provides a full spectrum of value-added services. Such products or services developed by the Group are branded with the "MERLION" name.

The Group has an experienced and dedicated workforce and a corporate culture that is solidly based on the principles of professionalism, innovation and service.

# WHAT WE DO

## Our Vision

*To be acknowledged by our clients, our staff, and our shareholders, as the leading integrated provider of rigging or mooring equipment solutions complete with technical support services globally.*



## One Call Does It All

We listen to our clients requirements and use our experience, expertise and inventory across our global operations to deliver a quality cost effective solution on the supply of rigging and mooring equipment complete with a full range added – value services 24/7.

We can provide a single item such as a sling to a complete project rigging solution with spreader bars, shackles and wire rope slings. We have extensive knowledge in the supply and installation of both temporary and permanent mooring equipment.

Inspection and re-certification of equipment can be carried out in compliance to international standards. Our inspectors and technicians are trained and experienced and carry out the inspections in compliance to our work methods

# OUR PEOPLE

## Our success begins with our people

Franklin Offshore is, at heart, a business driven by the passion and know-how of its people. Our people are, without a doubt, our most important asset and we work as a team in meeting the objectives and challenges of our daily work.

## Training

We provide international “best practices” training for each staff member— and this always includes HSE training.

## One Team, One Solution

Our international workforce of dedicated and experienced riggers, inspectors and offshore mooring installation superintendents work in challenging locations on complex, technical and demanding projects. We have a wealth of experience and can provide experienced crews in multiple disciplines:

- Rope removal / installation crews
- Cable Laid Sling / installation crews
- Inspectors on all types equipment
- Mooring equipment installation / retrieval



# QA/QC QUALITY MANAGEMENT

## Quality Assurance and Quality Control

Quality Assurance (QA) is our commitment to providing a quality product or service, first time every time. Our QA system is DNV GL Approved and our business depends on our reputation and the quality of our products and services that we provide.

We are totally committed in today's competitive environment, that our clients receive the utmost highest level of quality in our products and services to ensure safe and reliable operations in the offshore rigging and mooring industry.

Quality is a part of our heritage. During a long, rich history, Franklin Offshore has established an exceptional track record for the supply of both high quality proven products and supporting services. These relates to the expertise and commitment of our management and staff and the best practices that we have established in our procedures. We are totally committed to the delivery of our products and services to meet if not exceed our clients expectations on time, every time and within budget.

## Our Vision: To be the Best

To be acknowledged by our clients, our staff, and our shareholders, as the leading integrated provider of rigging or mooring equipment solutions complete with technical support services globally.

## Management System Certificates

ISO 9001:2015

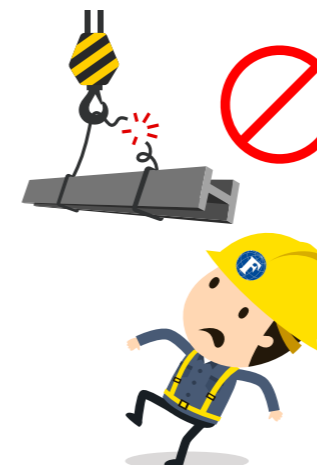
ISO 14001:2015

ISO 45001:2018



Safety takes priority and nowhere is safety more important than in the manufacture, load test supply, and installation of rigging and mooring equipment.

# SAFETY TAKES PRIORITY



## Risk Assessment & Risk Management

Workplace safety is very important for each and every employee in the industry because all the workers desire to work in a safe and protected location onshore or offshore.

## Recognizing Hazards

Safety can also refer to the control of recognized hazards in order to achieve an acceptable level of risk.

# HEALTH SAFETY ENVIRONMENT

## Operational Excellence

Health, Safety and the Environment (HSE) lie at the very heart of the Franklin Offshore culture and activities. Our global mission is to develop innovative, efficient and flexible HSE management solutions to meet if not exceed our own and clients HSE expectations. Franklin Offshore is driving and totally committed to improve its approach in all aspects of HSE management, covering environmental impact and relationships with customers, employees and suppliers. We are committed to continuous improvements.



## HSE PRINCIPLES

*Our HSE Principles are more than a commitment...  
It's a Way of Life.*

# TECHNICAL SUPPORT 24:7

## Technical support 24: 7

You can rely on our global technical expertise that's only a call away

We know that knowledge is everything and when your working on your project and you require technical support then we are only a call away.

Operations are supported literally anywhere and no matter where you work in the world or in what time zone our comprehensive skill set technical team are on standby to take your call.



*Our Technical Support skill sets*



## Lifting Equipment Engineers Association

The Lifting Equipment Engineers Association (LEEA) is established across the world as the leading trade association for all those involved in the lifting industry. We promote enhanced standards and sustainable development for the worldwide Lifting and Safety industry. We will educate, influence and enable so that best practice is normal practice.

## Franklin Offshore registered member

As a full registered members of the LEEA we have to meet their high standards in all relevant aspects of our business and confirm this through regular audits. These audits ensure that we are operating at all times to the highest possible technical standards of workmanship and documentation systems.

## LEEA International training for our staff

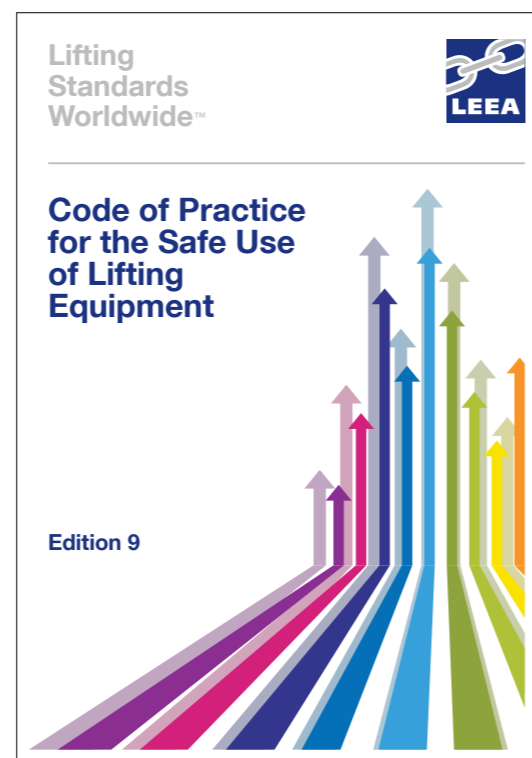
Franklin Offshore management recognizes that training is essential - not only in raising safety standards, but also in sustaining the lifting industry by providing suitably qualified inspectors.

### Training modules include:

- Lifting equipment general
- Lifting machines manual
- Lifting machines power
- Runways & Crane structures
- Overhead travelling cranes
- Offshore containers
- Mobile cranes

### LEEA Code of practice:

- Definitions & Legal requirements
- Principles for the selection of lifting equipment
- Marking, storage and handling
- In-service inspection
- Safe use of lifting equipment
- Training
- Recommended crane signals
- Load estimation - weight and center of gravity
- Load security - balance and stability
- Structures
- Principles for the selection and use of multipurpose slings
- Principles for the selection and use of lifting appliances
- Planning the lifting operation



## International Marine Contractors Association

IMCA is a leading trade association representing the vast majority of contractors and the associated supply chain in the offshore marine construction industry worldwide.

## Franklin offshore is a full registered member of IMCA

With our 100% commitment to safety then Franklin Offshore is a member of the IMCA association. Our membership has a number of benefits that relate to the use of the guidance notes to support us on our daily business.

Lifting forms part of almost every offshore and subsea operation, ranging from lifting of stores and spares to complicated and heavy lifts. IMCA helps to identify and manage the hazards associated with them and avoid incidents.



## Lifting & Rigging Publications

The following publications relating to Lifting & Rigging have been published by IMCA:

Reference	Published Title	Date	Rev.
IMCA LR 001	Guidance on wire rope integrity management for vessels in the offshore industry	Aug 2016	2
IMCA LR 002	Crane specification document	Mar 2019	2
IMCA LR 004	Guidance on examination of steel wire rope through magnetic rope testing (MRT)	Aug 2019	1.1
IMCA LR 005	Guidance on the use of chain lever hoists in the offshore subsea environment	Jun 2017	2
IMCA LR 006	Guidance for lifting operations	Mar 2018	1
IMCA LR 007	Guidance on open parachute type underwater air lift bags	Jul 2016	4
IMCA LR 008	Guidance on the manufacture and safe use of cable-laid slings & grommets	May 2019	1.1
IMCA LR 009	Guidance on the selection, safe use and inspection of high performance fibre slings used for engineered lifts	Aug 2020	0.1
IMCA LR 012	Guidance on the transfer of personnel to and from offshore vessels and structures	May 2019	2.1

# FRANKLIN OFFSHORE EUROPE

## Franklin Offshore Europe is actively engaged in Renewable Energy

Renewable Energy has become a priority industry in the objective for clean energy. The Netherlands and a wealth of companies have made substantial investments are acknowledged as the forerunners when it comes to installations, innovation and research focusing on harnessing the power of the wind.

Franklin Offshore Europe with our deep-water quayside are located in Rotterdam Europe's largest port. We are in a key position to supply equipment and provide logistic and project support 24/7.

## Full HSEQ compliance culture

At Franklin Offshore Europe we are fully committed to a Full HSEQ Compliance Culture, giving health, safety, environmental and quality events the highest priority in all our activities. This is supported by our HSEQ system. We require that all employees, contractors, subcontractors, visitors and any others who may be affected by our operations share this priority commitment.

## Products and services for the renewable energy industry

### Lifting Solutions

- Wire Rope Slings
- Cable Laid Slings
- Cable Laid Grommets
- Dyneema Slings
- Dyneema Grommets
- Chain Slings
- Chain Fittings
- Chain Blocks
- Shackles
- Hydraulic Jacks

### Fabrication Solutions

- Spooling Machines
- Winches
- Driven piles
- Suction piles
- Pile guidance frames
- Hydraulic Pin Release Shackles
- ROV Hooks
- Rigging Blocks
- Spreader Bar

### Mooring Solutions

- Design of systems
- Supply of systems
- Mobilisation
- Installation

### Inspection Solutions

- Inspection of equipment
- Re-certification of equipment
- Asset management



## MERLION Premier Quayside and Logistics Services

### Quayside Mobilization 24/7

Services you can count on. Expertise that you can trust.

Franklin Offshore can provide short-term project specific or long-term total logistics support. The combination of experience, expertise and investment in the facility, cranes, operational plant and personnel provide the total package in which you can become operational quickly and efficiently. Our operation provides many benefits, which will reduce operational time and deliver greater efficiency and cost savings.

We provide 24/7 quayside and logistics support services for the oil, gas and renewable energy industry.

### Our Expertise

- Quayside operations
- Storage facilities
- Logistics transportation
- Chartering services - tug & barges
- Office, warehousing and yard rental

### Quayside Capabilities

- Q1 Berthing Capacity: 228 m
- Water – depth 10.5 m
- Open Storage Yard: 60,000 m<sup>2</sup>

Our professional team have a wealth of experience and ensure our ability to continually develop and deliver a suite of premium offshore logistics services



# MERLION LECS

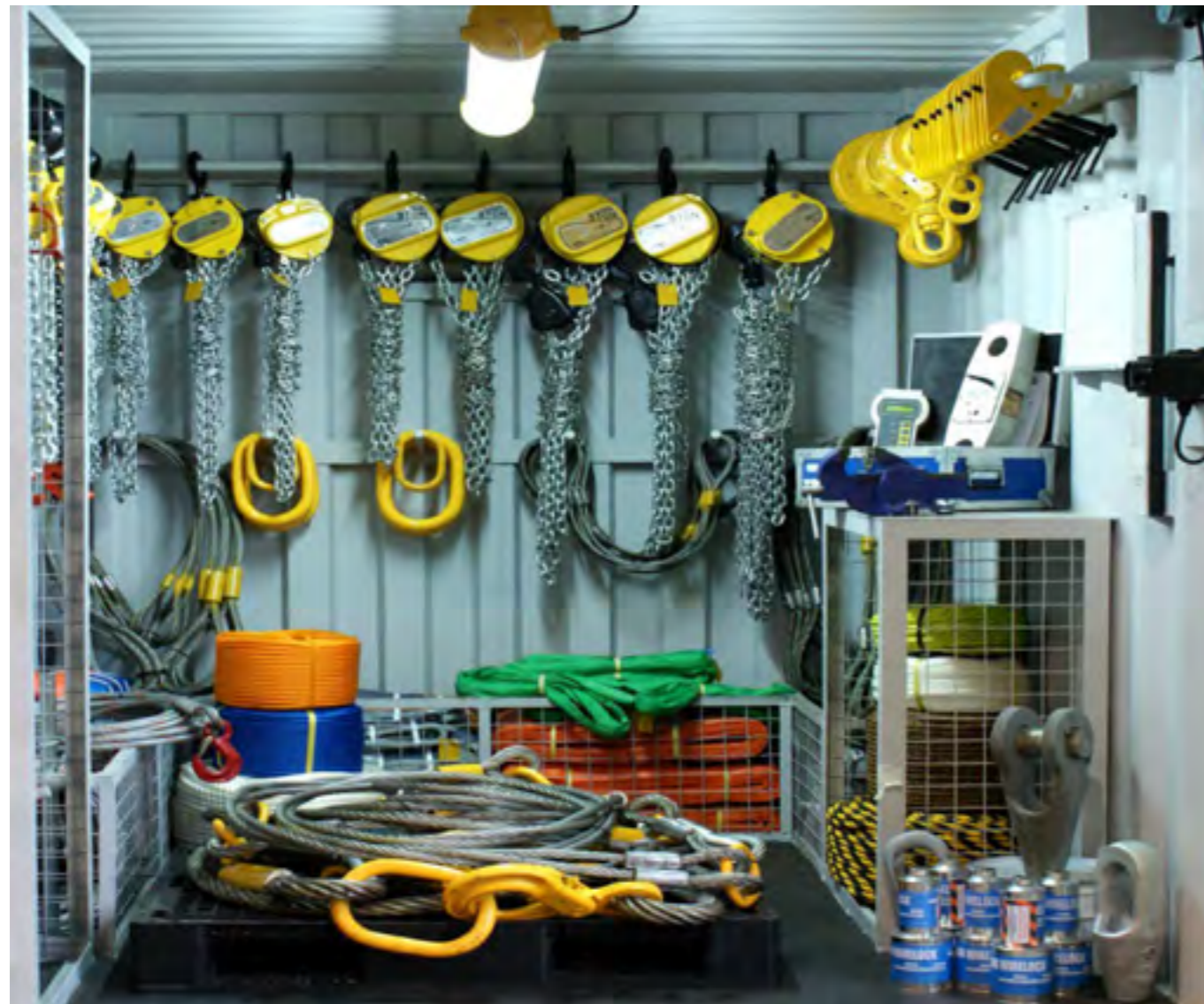
## LECS Lifting Equipment Containers Systems

LECS is a abbreviation for Lifting Equipment Containers System . It is a management system for the provision of mobile rigging lofts containing all types of lifting equipment. The units are provided with all the lifting tools in a portable container complete with the appropriate test certificates and asset register. The LECS system is controlled by a management database.



## The objectives of LECS:

LECS is a management system to ensure that all lifting and rigging equipment used are registered and maintained in safe order, supported with certification and unit traceability.



# MERLION CERTIFICATION DATABASE

The MERLION Database Management System is a powerful database that gives 100% visibility on rigging and mooring equipment details, inspection information and unit certification.

The system allows all relevant documentation to be accessed 24/7 by internet connection.

## Documentation includes:

- Original test certificate
- NDT/ MPI reports
- Multimedia attachment of photographs, videos
- Inspection history
- Inspection criteria
- Name and qualifications of the inspector

## Benefits of the MERLION Database Management System

Our database system was designed with a number of objectives, and priority was given to a system that can be easily operated and yet provide a wealth of information, reports and be accessed globally.

- Compliance with legislation
- Traceability of each item and inspection history
- Access to details of all equipment
- Fully-audit-able quality control system
- Independent verification of equipment

## Offshore Installation vessels

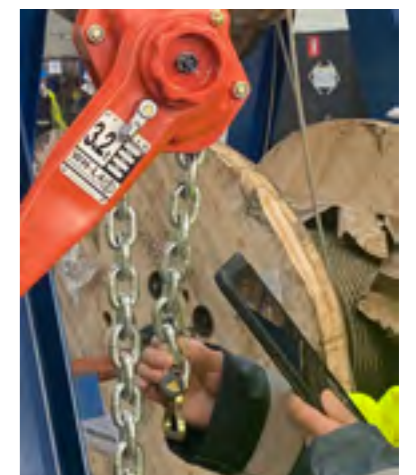
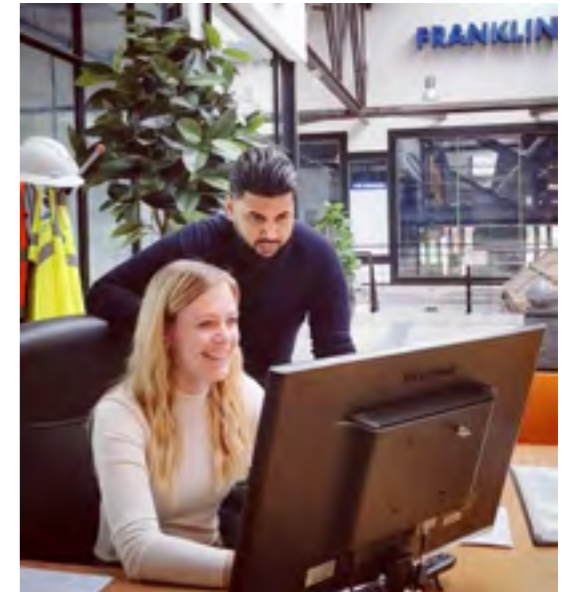
We can provide our MERLION inspection services to ensure every aspect of your lifting operation complies with statutory LOLER regulations and company specific management systems.

Our inspection and re- certification work scope covers loose lifting gear inspection, fixed lifting gear inspection all the way to thorough examination. A complete comprehensive service for test and certification either on your site or within a Franklin Offshore facility.

## NFC Inspection and tagging system

Benefits include:

- NFC chip tagging for fast track identification
- NFC chip tagging for fast track identification
- Accurate and timely inspection reports
- Eliminates handwriting of information
- Eliminates handwriting of information
- Eliminates handwriting of information



# MERLION CABLE LAID SLINGS

## Safety in every lift

As Franklin Offshore we have a wealth of experience and a passion for the manufacturing of cable laid and grommet slings. In addition to meeting all technical and certification requirements, such as IMCA M 179, we have worked hard to surpass these requirements, thus separating Franklin cable laid slings from the offerings of others. As a result, we now enjoy a global market for both our slings and grommets.

### Areas of special expertise

- Design
- Manufacture
- Inspection
- Certification
- Storage
- Delivery
- Installation
- Refurbishment



## Franklin Flemish-Lock® Cable Laid Slings

Flemish-Lock cable laid slings provide 100% termination efficiency.

- Balanced eye stresses
- Centre line tension
- Balanced eye stresses
- Captured rope tails
- Resin-secured sleeve
- High tensile efficiency
- No movement on rope/termination



Hywind was a renewable energy installation project around 30 kilometers off the coast of Aberdeen in Scotland. The project involved lifting and mounting five floating offshore wind turbines generating six megawatts of power each.

## Trust

Saipem S 7000 approved the MERLION Cable laid lifting slings for the lifting and installation of the wind turbines used on the Hywind project.

- Compliance to Specifications
- Accurate sling lengths
- Matched lifting sets



# MERLION MOORING SERVICES

Franklin Offshore are a global leading integrated solutions provider for temporary and permanent moorings. Regardless of water depth, mooring requirements and component requirements, MERLION Mooring Services provide a unique opportunity for customized and cost-effective mooring solutions.

### Temporary Mooring Services

We are acknowledge as a global leader in the supply of integrated comprehensive solutions for temporary moorings. Regardless of water depth, mooring requirements and component requirements, Franklin Mooring Services provide a unique opportunity for customized and cost-effective solutions.

### Deployment & Retrieval of Temporary Mooring Systems

Our mooring supervisors are equipped to provide a full spectrum of support services such as rig moves. Turnkey support services include the establishment of mobilization plans, mooring equipment deployment and retrieval procedures.

### Permanent Mooring Services

We have a wealth of experience and resources to provide our permanent mooring services on turnkey management, mobilization and installation of complete mooring systems.

### Our services include the provision of expertise, equipment and personnel for:

- Mooring & riser analysis
- Design & engineering of mooring system
- Provision of all mooring equipment and installation aids
- Provision of all personnel for installation and retrieval of mooring system for MODU / FPSO / FPU / DTB or similar vessels



# MERLION MOORING SERVICES

## MERLION Mooring services

We have the resources to manage your mooring system from the design, to the mobilisation all the way to a safe efficient installation.

The energy landscape is rapidly changing. There are many areas where technology developed for the oil and gas industry can support developments in the mooring and installation of floating offshore wind structures.

Cross learning between oil & gas and floating offshore wind farms has many benefits with the focus to reduce weight, reduce costs but yet maintain operational performance reliability and a safe mooring solution.

With a wealth of experience we can provide from in-house an integrated mooring design, analysis and a single source management supply package for Offshore Wind mooring projects.

We have global alliances with key equipment manufacturing partners and have a spectrum of driven and suction piles, anchors, chain, Dyneema mooring lines all complete with Long Term Mooring (LTM) shackles and associated jewelry.

### From near shore to deeper water

We have the experienced engineers and comprehensive range of mooring software programs. This allows us to design, supply and install the complete mooring solution.



# MOORING LINES

## Mooring Lines we hold it all together

### Premium Brands for Premium Clients

We actively establish strong relationships with our global alliance market leader manufacturing and supply companies. We believe that strong connections with our suppliers are necessary to establish and maintain a competitive edge and to acquire the latest product technologies. We work should-to-shoulder with companies who offer the best in their category. Together, we are jointly committed to meeting the challenges and needs of our clients around the globe.

## Steel wire ropes for mooring applications



Bridon-Bekaert is a leading manufacturer in advanced rope solutions for the renewable energy mooring applications.

We provide superior steel wire ropes in a wide range of constructions for renewable energy mooring applications.



KISWIRE brings NEPTUNE 6 and 8 strand ropes in a range of 20 to 180 mm diameter and in units up to 425 metric tons weight maximum.



Rope made with Dyneema® fiber offers significant operational efficiency

### Windfloat Atlantic project

The Windfloat Atlantic project will incorporate the largest and most powerful wind turbines ever installed onto a floating foundation at sea. The mooring system uses Lankhorst Gamma98® mooring ropes made with Dyneema® DM20 fiber.

### Technical benefits

Developed for Windplus SA, an energy consortium, the new version of the foundation replaces the steel wire with strong, lightweight Lankhorst Gama98® mooring rope. This incorporates Dyneema® DM20, a HMPE fiber for permanent mooring that can withstand continuous tension for 10 times the operational life of 25 years. The lean lightweight mooring system will ease the installation, decommissioning and optional future de-couplings for in-port turbine maintenance.



# MOORING SYSTEMS

## Innovative solution for offshore mooring

Offshore wind power is one of the fastest-growing renewable energy sectors, attracting substantial interest and investment globally.

All floating wind turbine technologies share a common challenge, that the platforms need to be held firmly in place with a robust mooring system in a cost-effective way. High-quality mooring foundations are of critical importance. The harsh marine environment, erosion and high wind speeds can all shut down the turbine if the foundation is not strong enough.

### Global mooring systems can be designed as follows:

The mooring system (mooring lines and anchors) guarantees the safety of the installation and, together with the floating platform and the marine risers, builds a complex mooring configuration. The following are the most common mooring system installations.



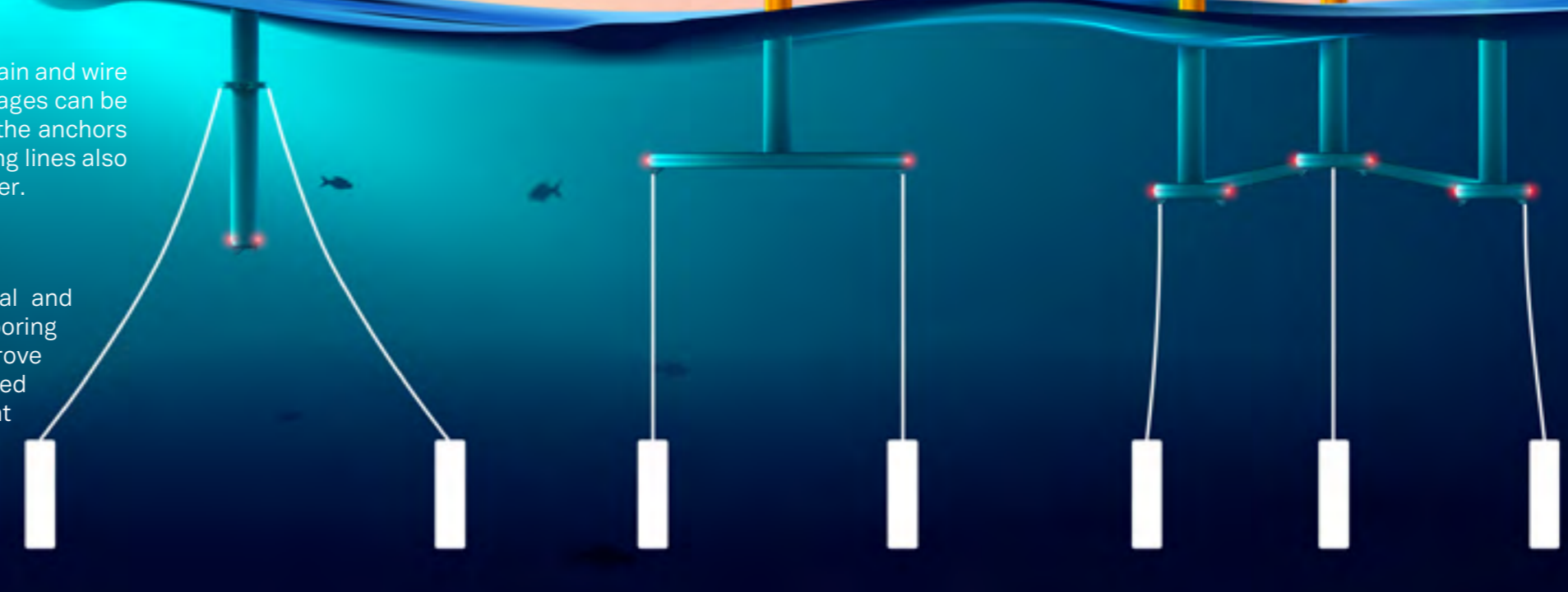
### Catenary mooring systems

CMS systems can be deployed in water depths of up to 100 meters, and combine chain and wire ropes. The system relies on its own weight to provide restoring forces. Its disadvantages can be increased production costs and greater vertical loads; the main advantage is that the anchors are only subjected to horizontal forces. However, increasing the length of the mooring lines also increases their weight so catenary systems become less economical in deeper water.

### Taut leg mooring systems

In depths beyond 100 meters, the weight of the mooring line becomes critical and encourages the adoption of Polyester and Dyneema type ropes for taut leg mooring systems. These are light and flexible, can provide large restoring forces, and improve the drilling condition and energy density (MW/km<sup>2</sup>) by reducing the spacing required between units. The disadvantage is that the anchors need to handle a significant vertical force, which would increase the stiffness and impact on the dynamic behavior of the floater.

Semi-taut mooring systems, combining taut and catenary lines, are mainly used in deep-water applications. The spread mooring system consists of a group of mooring lines distributed over the bow and stern of the platform. This is a relatively flexible solution suitable for most water depths.



SPAR

TENSION LEG

SEMI-SUBMERSIBLE

Hybrid systems, consisting of buoys and catenary lines, are also available.

# MOORING SYSTEMS

## Mooring in Extreme Conditions

The performance of the mooring system needs to capture the technical and environmental objectives required when designing a mooring system.

They can include:

- Extreme wind conditions
- Wave behavior
- Currents and tides
- Marine growth

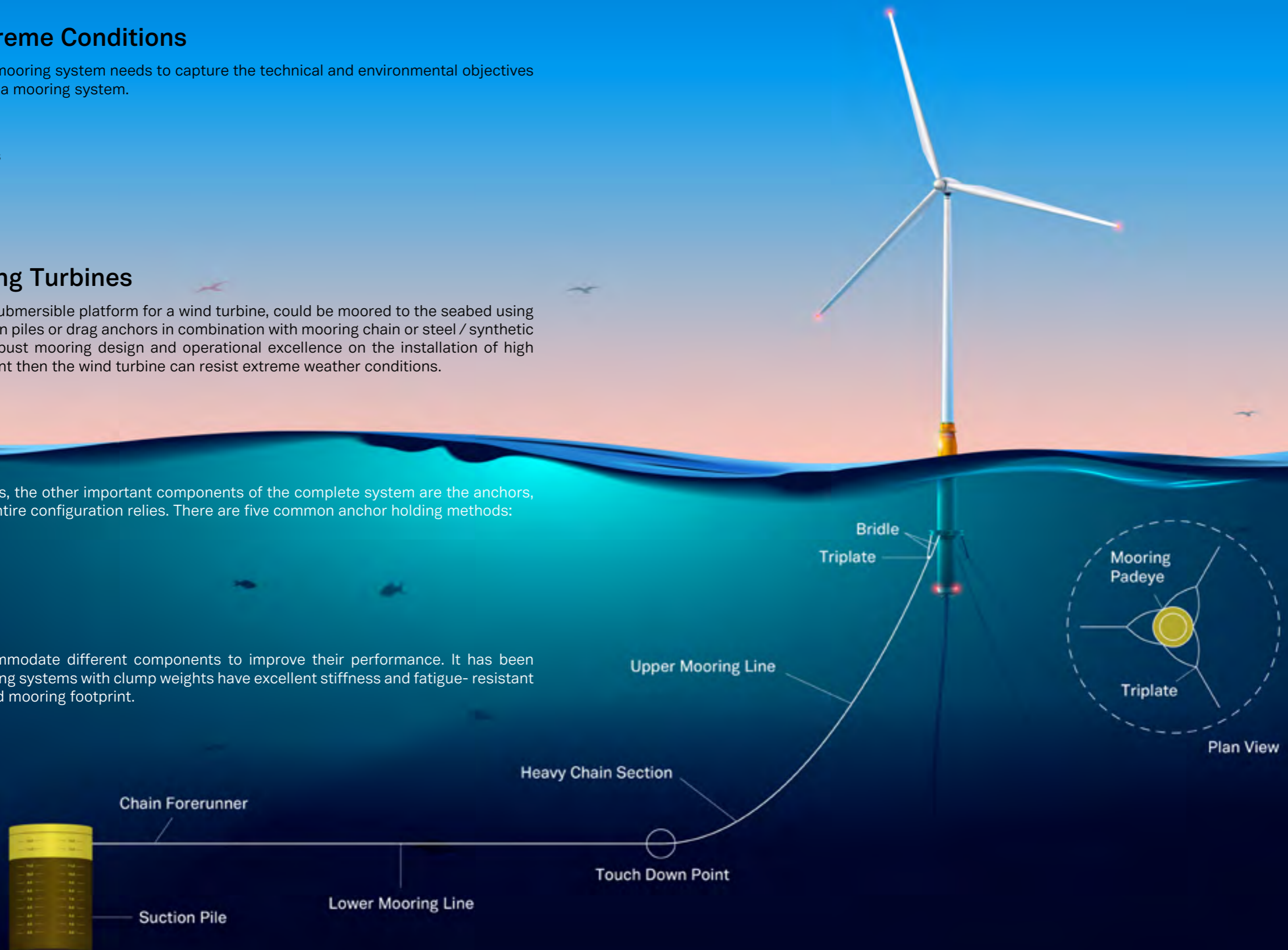
## Mooring Floating Turbines

Example: SPAR or Semisubmersible platform for a wind turbine, could be moored to the seabed using either suction piles, driven piles or drag anchors in combination with mooring chain or steel / synthetic mooring lines. With a robust mooring design and operational excellence on the installation of high quality mooring equipment then the wind turbine can resist extreme weather conditions.

Besides the mooring lines, the other important components of the complete system are the anchors, on whose strength the entire configuration relies. There are five common anchor holding methods:

- Clump weight
- Drag embedment
- Driven piles
- Suction type
- Vertical load

Mooring lines can accommodate different components to improve their performance. It has been demonstrated that mooring systems with clump weights have excellent stiffness and fatigue-resistant properties with a reduced mooring footprint.



# TURNKEY MOORING SYSTEM

## Single source solutions

Franklin Offshore with its full spectrum of in – house resources can provide a total renewable energy turnkey contract delivery as a single source solution on the engineering, procurement, construction and installation of a offshore wind turbine mooring system

The ECP contract can include several activities:

- Design
- Procurement
- Assembly
- Mobilisation
- Installation
- Handover Client

# ONSHORE



## Our innovative solutions

With our innovative solutions Franklin Offshore , we can contribute significantly to making renewable energy more efficient and competitive.

It is the transfer of our knowledge, experience, specialised software , equipment and the valuable cooperation with our product alliance partners. This being a front runner in the complete turnkey contract method.

# OFFSHORE



## Your Preferred Partner

CFE is a leading service provider of engineered platform and steel structural fabrications used throughout the offshore and drilling industry. We specialize in providing integrated solutions that encompass project management, engineering design, blueprint consultation, worldwide procurement, fabrication, machining, and testing.

Our world-class infrastructure and in-house quality control unit ensure that every aspect of our manufacturing processes is managed efficiently and professionally. In addition, our seafront location in Singapore provides advantages in acquiring components and raw materials, reduces transportation costs and accelerates delivery times.

## CFE Core values

### Consistency

Ensuring compliance to quality management

### Innovation

Provide innovated solutions to evolving markets

### Perfection

Pursuit on operational excellence



## Precision Engineering

### Commitment by investment

CFE have made a substantial commitment by investment in the latest high precision machining equipment. Our strategy of combining state of the art equipment with the highly experienced machine operators ensures we can produce high level expertise on all types high profile machining work scopes.

### We have a established track record in the fabrication and delivery on a wide range of fabrication and specialist equipment.

- Winches
- Chain stoppers
- Fairleads
- Chain Jacks
- Diverter and turn down sheaves
- Steel structures
- Driven piles
- Suction piles



*We can fabricate and supply chain jacks to any size and configuration required.*

### Suction Piles

Suction piles have a number of advantages over conventional offshore foundations, mainly being quicker to install than piles and being easier to remove during decommissioning. The methodology is now used extensively worldwide for anchoring large offshore installations to the seafloor at great depths, or where the seabed is soft clay or low strength sediments.

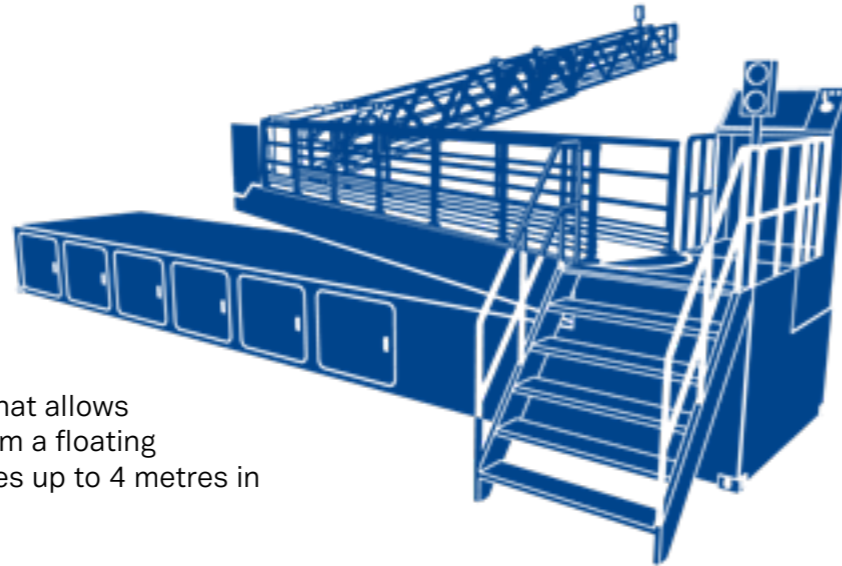


# L-BOW WALK 2 WORK SYSTEM

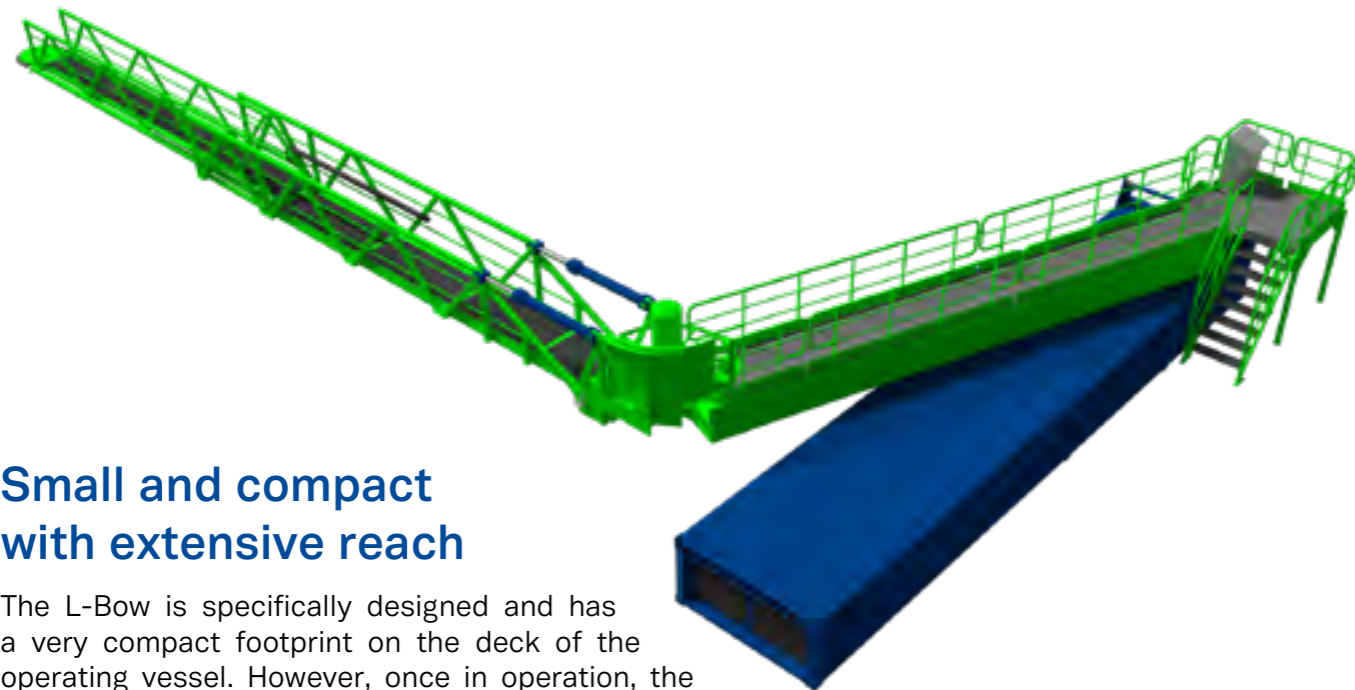


## L-Bow w2w Compensation Gangway

L-Bow “Safety in Every Step”



The L-BOW w2w system is a patented design of a motion compensation gangway system that allows the safe transfer of personnel from a floating vessel to a fixed structure in waves up to 4 metres in height.



## Small and compact with extensive reach

The L-Bow is specifically designed and has a very compact footprint on the deck of the operating vessel. However, once in operation, the L-BOW has a reach of 15-21 metres.

The gangway has an elevation of 6 metres (20o) up or down to create a large operational envelope to assist in height difference between multiple structures.

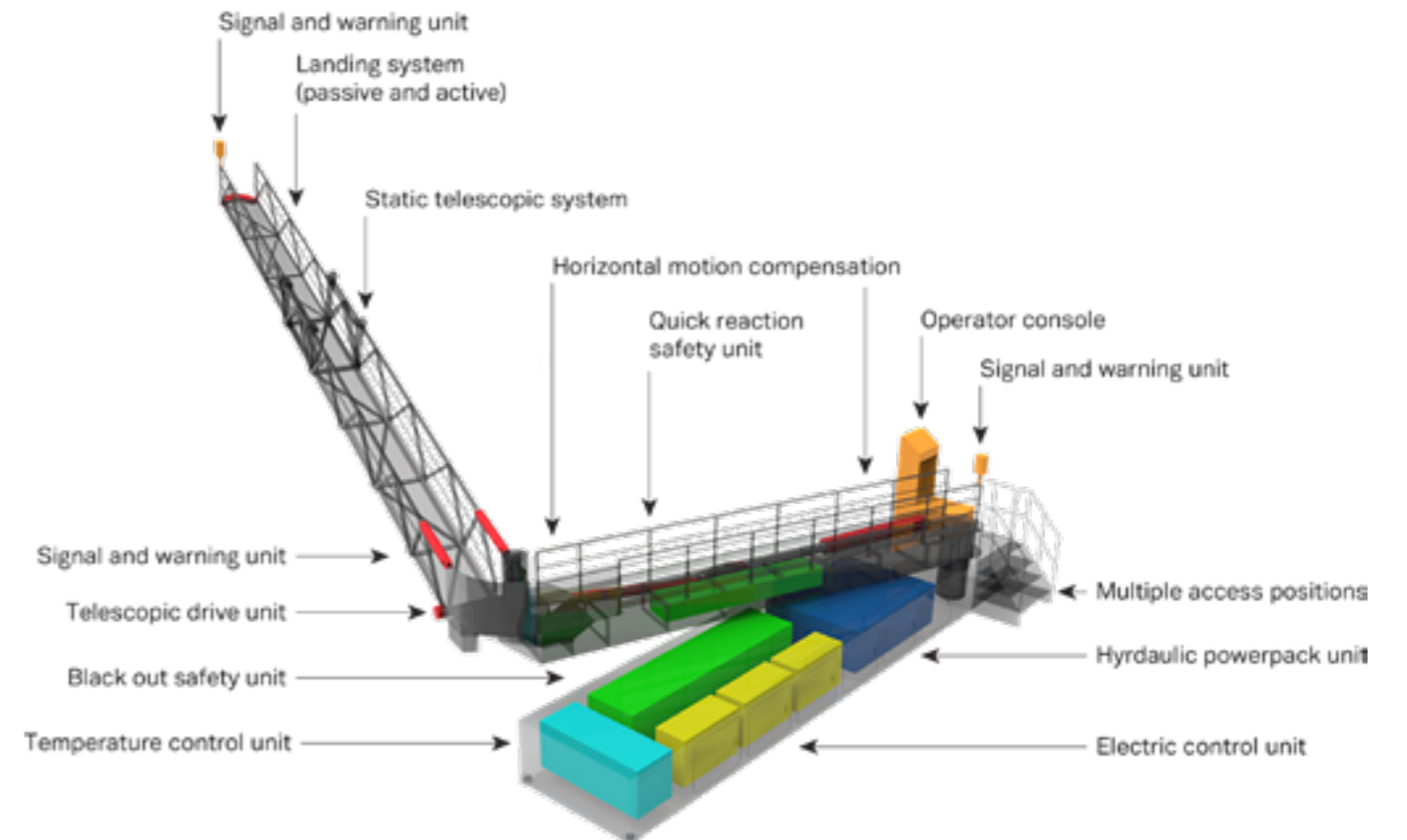
## Simplicity

The standard 40' high cube container is available for a fast and efficient mobilisation on a truck, ship or airplane to any global onshore or offshore location.

Its compact design allows the magic hydraulic and electronic equipment to be located in the main ISO DNV dimensional container.

## Plug and play

On arrival, it's a time-saving, user-friendly plug and play set-up. With its low power consumption, it is possible to connect the L-BOW direct to your ship's power grid without the need of separate HPU.

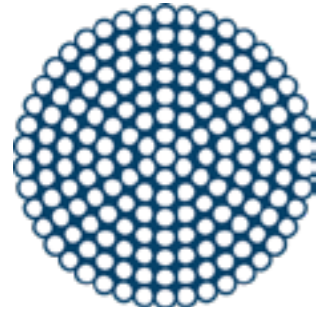


# ARCELOR MITTAL

ArcelorMittal manufactures and supplies some of the most technologically advanced spiral strand mooring lines in the world.



## Spiral Strand Mooring Lines



### Unsheathed galvanized spiral strand

High strength and very good torque balance for periods up to 15 years in sea water, in static conditions.

Diameters:  
45mm to 145mm



### Sheathed galvanized spiral strand

High strength and very good torque balance for periods up to 35 years in sea water, in static conditions.

Diameters:  
63mm to 170mm

### Double sheathed spiral strand

Giving maximum protection against corrosion



## ArcelorMittal spiral strand mooring lines

6 Reels x 770m

119/141mm sheathed spiral strand

Weight per m: 74.32kg

Lifespan: 26 years

Application: Floating wind turbine China Seas

# FEUBO

A Global Reputation - Forged in Germany



## FEUBO

Franklin offshore are a leading alliance partner stocking and supply the highly engineered and quality LTM product range from Feubo who manufactures long-term mooring products that are designed and certified in Germany.

## Quality products includes

### LTM Long Term Mooring

- Shackles
- C link type connectors
- Kenter type connectors
- H type connectors



## FEUBO Quality

Our product range are forged from one of the world's finest materials, machined with German precision using the latest CNC/DNC technology, and tested for dependable performance in even the most extreme environments.

We rigorously inspect and test our sockets and other cast products with the same state-of-the-art technology as our forged products.

## Ndur link

### The new benchmark for Kenter Type connecting links

To further improve the reliability strength and the fatigue life of connecting links, Feubo develop the NDur Link. NDur Link will set further benchmarks, especially for the fatigue life.



# BRIDON

A world leader in advanced rope solutions for the offshore oil, gas and renewable energy industries

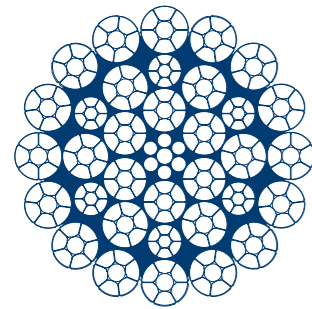
## High performance crane hoist and offshore mooring steel wire ropes

Franklin Offshore works with our Bridon-Bekaert alliance partner to provide a high quality high performance steel wire rope in both crane hoist ropes and ropes for the offshore mooring applications.

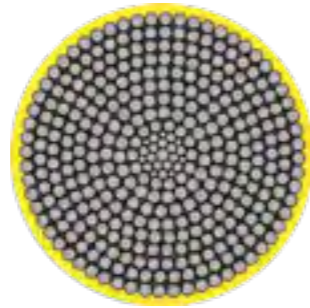
We can provide a crane hoist rope to work at high heights or a steel wire rope for permanent mooring

# BRIDON · BEKAERT

THE ROPES GROUP



Low Rotational Ropes



Spiral Strand Ropes

## Crane ropes

When lifting loads to high heights such as wind turbines then for safety it is necessary to use a rotation-resistant crane rope, which ensures the load does not spin when hoisted from the ground or work boats. Bridon's high-performance Endurance™ crane ropes incorporate an anti-rotation feature by using three layer torsionally balanced rope constructions. The outer strands are compacted to increase the breaking load and the wires are galvanized for corrosion protection.

## Mooring lines for floating renewable energy structures

Bridon's specialist high-strength steel ropes are manufactured in different constructions for permanent mooring on all type of offshore floating structures . Working in Pharrell with Franklin Offshore then we can provide a rope design to meet your application requirements.



## Technical Support and Service

At Franklin Offshore with our joint expertise with Bridon technical department we provide technical support on the crane hoist ropes and share our knowledge on ropes used in the long term mooring applications.

# GUNNEBO

Safety in Every Link



## Gunnebo Industries

Franklin offshore are truly proud of our long term alliance partnership with Gunnebo Industries. Gunnebo Industries are a global leader in several areas within the lifting- and material handling industry for which they manufacture products such as crane blocks, wire rope sheaves, chain & lifting components, shackles and lashing products. Their products are well known and established on the market as a premium product with outstanding safety.

## Innovation

Gunnebo Industries' success has been driven by a strong focus on innovation and high quality products, designed for the best functionality and highest safety. Through the years they have developed many of the products that are today's standard.

## Quality

Expensive property and even people's lives could be at risk if lifting equipment malfunctions and therefore we make sure that products leaving our factories are of the highest quality and fulfill applicable safety standards. The production process at Gunnebo Industries is, from several aspects, unique. They manufacture in accordance with the major standards and all products are marked for full traceability, all the way back to the raw material.

As another example, every chain link and individual lifting components manufactured are proof loaded to a minimum of 2 times the working load limit and visually inspected by their competent personnel.



Neptune is a KISWIRE's own brand name for steel wire ropes used in lifting and mooring applications.

KISWIRE has been manufacturing its high quality Neptune ropes from its state of the art NEPTUNE 2 (N2) rope manufacturing facility.

This new plant designs and produces 6 and 8 strand ropes as well as N2 multi strand, non- rotating ropes in to 180 mm. A wide variety of N2 rope types will be available, with features including plastic infill, variable strand compaction, special lubricants, and zinc/aluminum coating (Alumar®).

### ALUMAR® aluminized ropes for offshore renewable energy moorings

The aluminizing of steel wire and steel wire ropes is made by KISWIRE under the brand name ALUMAR®. The ALUMAR zinc/aluminum coating was developed as an alternative for the regular galvanizing of steel wire ropes . Extensive tests have been carried out showing that the ALUMAR wire rope can stay up to 3.8 times corrosion free 3,8 times longer than galvanized ropes.

### KISWIRE Neptune steel wire ropes for mooring and crane hoist applications provide:

- Excellent Fatigue Resistance
- High Breaking Load
- High Abrasion Resistance
- High Corrosion Resistance



Part of Van Beest Group: Solutions for Heavy Duty Loads  
Royal Co: 100 Years Experience

## Scope : Engineering, Production & Testing

Irizar Forge manufactures high-quality, standardized components as well as innovative tailor-made crane components and mooring accessories. Each of these components can come with a full-service package that includes design, production, assembly and testing with third party certifications upon request.

IRIZAR state-of-the-art is resulting in forging products that come with high safety factors, excellent fatigue ratings, lower maintenance costs and a longer lifetime. FORGING process is the key factor and LOAD Test for PLT & MBL is the key test.

### Applications & Products: Lifting & Mooring

Irizar Forge designs, forges, load-tests and supplies a fully certified wide variety of products for LIFTING & MOORING appliances, valid for hardware rigging or synthetic slings friendly:

- Lifting: Dry, Top site or Subsea lifting operations
  - ✓ Forged Hooks (Single-Double-Quad, Shank DIN 15400, Eye DIN7540)
  - ✓ Crane Hook Blocks (single or multiple sheaves)
  - ✓ Hook Swivels (sheaves free solution)
- Mooring: Temporary or Long-term linges for floating solutions
  - ✓ Forged Hooks in multiple versions (ROV-TRANSFER-KS)
  - ✓ Dee & Joint Shackles & Accessories (Triplates-Quadplates, Y-H Links)
  - ✓ Forged Master Links weldfree

### Certificates & Approvals

As a high safety products vendor, Irizar Forge is committed to the highest, most strict and consistent specifications. Therefore, the company is certified to the latest ISO standards (9001-14001-45001) and the capabilities & products to the most relevant International rules & standard:

- Capabilities & Activity certified by DNV-GL, ABS, LR & BV Class Societies
- Materials according to EN-10204-3.1 or 3.2 by class
- Mooring Products (LTM chain accessories) by ABS & DNV-GL
- Proof Load Test certified by ILO-3 or by class
- Quality & Inspection Plans & Production Plans upon request
- Manuals & Guidances (maintenance, posterior inspections)



Lankhorst Ropes is a world leading supplier of Dyneema ropes for lifting and mooring applications

## South East Asia alliance

Franklin Offshore and leading fiber ropes manufacturer, Lankhorst Ropes, have a joint cooperation in developing the market for high lifting capacity fiber rope slings for renewable energy construction projects offshore in South East Asia.

## Dyneema

Synthetic ropes manufactured with Dyneema deliver the same load bearing capacity as steel wire but with lower weight, and significantly easier handling.



## Our experience

### Windfloat Atlantic project



The Windfloat Atlantic project will incorporate the largest and most powerful wind turbines ever installed onto a floating foundation at sea. The mooring system uses Lankhorst Gamma98® mooring ropes made with Dyneema® DM20 fiber.

The use of synthetic fiber tethers such as the LANKO®FORCE & GAMA98® Dyneema® has significant performance advantages over chain and steel wire tethers. In addition to being lighter And with almost neutral buoyancy, synthetic fiber tethers offer:

- Reduced cost of buoyancy elements
- No corrosion
- No fatigue issues
- Easy system installation



Lankhorst Ropes manufacture the high quality conducts an Industry leading research program on the safe and reliable use of synthetic ropes in Offshore Engineered lifts. This program is witnessed by DNVGL to ensure safe and reliable products.

## LANKO®FORCE 12x1

LANKO®FORCE is a 12 strand braided rope and is an excellent alternative for heavy and lumber some steel wire rope lifting slings.



Dyneema is stronger than conventional steel wire rope, yet the corresponding weight is 7 times lower. The improved handling characteristics are especially suitable for safe and heavy duty lifting applications.

## Advantages of synthetic fiber rope slings

- As strong as steel wire rope
- Lighter – less weight in lifting gear
- Easy handling = more safe & efficient
- Reduced risk of injuries
- Torque-free
- No corrosion

Lankhorst offers the LANKO®FORCE 12 strand ropes to produce slings with a maximum minimum breaking load (MBL) of around 2.000 tonne in single leg configuration and 3.400 Tonne on a grommet configuration.

For heavier loads, high performance GAMA98® Dyneema® rope can be used; we are able to offer 300mm diameter rope corresponding to a sling with 5,000 tonne MBL (single leg) and 8,500 tonne MBL on a grommet configuration, allowing us to provide ropes for the most demanding heavy lift projects.



# WILLIAM HACKETT



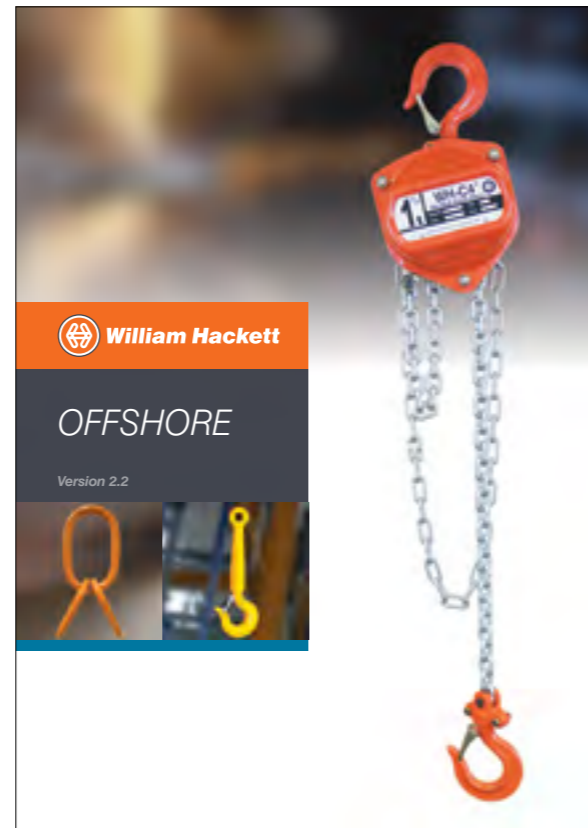
The William Hackett Group is the UK's leading provider of chain products and lifting systems solutions

## William Hackett Lifting Products

Franklin Offshore are proud to announce we are now a stockiest and Premium Distributor for William Hackett Lifting Products. William Hackett specializing in lifting solutions to the offshore, renewable energy and subsea installation market sectors. William Hackett have a worldwide reputation for excellence, product design and construction, using latest technology combined with years of manufacturing knowledge that has helped make Hackett the professional choice.

### The quality product range includes:

- Chain slings
- Chain blocks
- Levia hoist
- Levi hoist subsea
- ROV Hooks
- Lifting links
- Master Assembly
- Master links
- Lifting points



## Chain Blocks

The WH-C4 Chain block has a lifting capacity from 0.5 Tonne up to 50 Tonne. Standard lift height of 3 Metres. Alternative lengths are available.

## Safety in every lift

Twin Pawl double safety fitted as standard

## Subsea Lever & Chain Hoists.

The William Hackett second generation SS-L5 topside and subsea lever hoist is the first lever hoist to be awarded by DNVGL 'Saltwater Immersion test verification, Report No. A0359376.02, Rev.1. The report verifies that the SS-L5 type lever hoist could be safely used over a 21 day single immersion and a 31 day multi immersion period.



# VAN BEEST



Van Beest is a leading manufacturer and supplier of high quality fittings for lifting chain and steel wire rope.

## Green Pin the professional choice

Green Pin shackles are manufactured in Holland by Van Beest. The shackles are manufactured with each unit being stamp marked with the grade of steel, traceability code and importantly our name. (Bs). Independent Quality inspections are controlled by Lloyds, who carry out regular audits of the registered Quality Assurance System.



## Quality in every lift

In the tuff and demanding environment of onshore and offshore lifting, Green Pin shackles are used by professionals in many lifting and rigging applications. Quickly identified by the Green Pin, this is immediate confirmation that you are using shackles that meet or exceed the performance requirement of the U.S. Federal Specifications.



## Green Pin Tycan® Chain

### The complete solution for your lifting job

Van Beest introduces the Green Pin Tycan® Chain. Green Pin Tycan® is made with Dyneema® fiber™. It is up to eight time lighter than steel - yet just as strong.

A choice of four sizes of lifting chain with matching fittings allows you to manufacture a complete chain assembly with a Working Load Limit of up to 14.2 ton. The chain fittings, specially developed for use with Green Pin Tycan®, include a connecting link, a shortening hook and a sling hook.



# VRYHOF ANCHORS

Vryhof Anchors provides drag anchors and related mooring equipment for floating structures, to the offshore energy industries as well renewable energy

## Renewable energy experience

The first floating wind energy unit, Statoil's Hywind offshore Norway, is moored on Vryhof's anchors, as is the award-winning Principle Power/ EDP WindFloat project offshore Portugal.

Vryhof Anchors' contribution to Offshore Wind Energy Projects in joint form with Franklin Offshore can consist of one of the following services in an advising, reviewing or commenting role:

Advise on soil data requirements and site investigation campaign Analyze the site and soil data, carry out geotechnical characterization

Optimization of the mooring system, design basis and design loads Optimize and select most suitable anchor type and size Manufacture and supply of mooring anchors



STEVTENSIONER®



Fukushima Forward  
MITSUI Fukushima Mirai



## Franklin Offshore enjoys the alliance partnership across South East Asia with Vryhof anchors.

Since the foundation of the company in the early seventies, Vryhof's proven and trusted anchor designs have become the industry standard and are regarded as being best in both performance and handling. With primary focus on customer satisfaction, Vryhof Anchors is the preferred partner for mooring systems in all water depths and conditions.

## Anchor types to serve different soils, water depths and load directions / applications

Stevpris® MK6

Stevshark® REX

Stevmanta®



Stevmanta®



Stevshark® REX



Stevpris® MK 6

# ENDURO SOFT SLINGS

Manufacturer of Heavy Lifting HMPE Softslings



## Enduro HMPE heavy duty soft slings

Enduro soft slings is a specialised high performance developer and manufacturer of heavy duty soft slings which are used in the lifting and rigging industry both onshore / offshore and in the renewable energy market sector.

## Enduro HMPE heavy duty soft slings lifting capacity

Enduro HMPE soft slings manufactures slings with working load limits (WLL) up to 1000 tonnes complete with individual sling load testing and full certification issued by DNV-GL Class society. The slings can be designed with a number of beneficial features which include matched set sling tolerances, high visibility neon wear sleeves.



## Engineered for complexity and precision

Complex lifting projects both onshore and offshore are becoming increasingly common. Loads are getting bigger, heavier, and more sensitive, and the conditions more complex. With our high performance HMPE slings, you have the right tools in place to effectively address these new challenges.

Enduro HMPE soft slings stands for quality and efficiency.



# MULTI-SEC



Multi-Sec Modular Spreader Beams provide the ideal solution for an array of lifting applications.

## High load lifting capacity to spreader beam size ratio

Versatile and cost effective, the Multi-Sec modular spread beam range offers a wide variety of spans, configurations and capacities to suit your specific lifting application.

### Multi-Sec Certification

The entire range of Multi-Sec Lifting Systems are proof load tested in-house prior to dispatch and supplied complete with relevant certification.



### Benefits of the Multi-Sec Modular Spreader Beams

- **Cost Effective**  
A small number of components are required to make up a variety of spans and configurations.
- **Versatile**  
Configured into virtually any lifting rig to enable the most complicated of structures to be lifted.
- **Storage**  
Multi-Sec can be dismantled and stored in a relatively small area saving valuable space.
- **Handling**  
Multi-Sec are able to be handled more easily than conventional fixed spreader beams.
- **Transport**  
Multi-Sec can be shipped in component form, therefore a more cost effective transportation.



# WIRELESS LOAD MONITORING SYSTEMS



We are the stockist and regional distributor providing direct purchase and rental on the LMS high quality robust user friendly load monitoring equipment as used across many industry sectors globally. We provide a comprehensive range of products which are engineered to the highest standards and defined by strength, accuracy and reliability.

## Load Links

Accurate and reliable tensile load monitoring for lifting applications. Due to the robust, lightweight high tensile aluminum design these load links are ideal for mobile applications and available as either cabled or wireless with a range of options.

- Load Link designs from 1 Tonne to 500 Tonne
- Safety factor of 5:1
- Accuracy <0.5 of applied load
- Every unit load tested and certified



## Wireless Data Logging

Access your data quickly and easily on computer, tablet & smart phone via web browser. Export data in standard JSON or CSV formats with customisable reporting to suit your needs.



## Comprehensive Range Load Shackles/ Running Line Tensiometer



**Load Shackle Range:**  
3.25Te - 1000Te

**Running Line Tensiometers Range:**  
10mm to 100mm (Wire Rope, Synthetic rope and Dyneema)

## Training

All equipment is supplied with relevant documentation including comprehensive operating instructions and certification. We can provide training at our RDM rigging and marine facility in Rotterdam.

# ENERGY EQUIPMENT SERVICES



## Key Supplier to Offshore Oil, Gas and Renewable Energy Industry

Energy Equipment Services Pte. Ltd. (EES) is one of the leading distributors of high quality marine and oilfield and renewable energy equipment in the Asia Pacific Region. Being based in Singapore which is strategically located and well connected in communication networks, allows fast shipments from Europe and the United States of America, the manufacturing homeland of many of our principals.

## Experienced and Dedicated Staff

Our team of highly experienced sales and marketing personnel has both in-depth product knowledge and wide industry contacts to support your needs for a truly professional, efficient and cost saving service.

## Mission Statement

Our mission is to be the most respected and efficient supplier of Marine and Oilfield equipment complimented by 24/7 first class response and service.

## Quality Policy

At EES, we put our client's needs first. We are committed to providing quality services as measured by value to our client's, in a safe, cost effective manner, on time, every time.



# CRANE BARGES



## Singapore and regional water activity

We own and operate 2 crane barges the “Wakaei Maru No. 8” and the sister vessel “Isamigo No. 3”.

Our crane barges are used for Singapore and regional waters on project support in carrying out safe lifting on all types of equipment. Our barge and experienced crews carry out a range of services that include:

- Marine salvage work
- Offshore Installation Services
- Lifting and transporting oilfield equipment
- Deployment of mooring and riser systems
- Renewable energy project support

Our crane barges have a number of operational benefits that relate to revolving cranes, shallow draft and large capacity storage decks. Each barge is complemented by highly experienced crew.



*Wakaei Maru No. 8  
100 Tonne Crane Barge*



*Isamigo No. 3  
200 Tonne Crane Barge*

# THE FUTURE

As the sun sets in the west, in the east a new day begins.  
Each day will bring new challenges, demands and needs.

Franklin Offshore will continue to meet these needs as your  
global product and service provider.





**Franklin Offshore Holdings Pte. Ltd.  
(Corporate Headquarters)**

11 Pandan Road  
Singapore 609259  
Tel : +65 6264 3451  
Fax : +65 6264 1130  
Email : general@franklin.com.sg

**Franklin Offshore International Pte. Ltd.**

11 Pandan Road  
Singapore 609259  
Tel : +65 6264 3451  
Fax : +65 6264 1130  
Email : general@franklin.com.sg

**Marine and Logistics Support Base**

10 Pioneer Sector 1  
Singapore 628444  
Tel : +65 6863 1110  
Fax : +65 6863 4881  
Email : general@franklin.com.sg

**Franklin Offshore Mooring Pte. Ltd.**

11 Pandan Road  
Singapore 609259  
Tel : +65 6264 3451  
Fax : +65 6264 1130  
Email : general@franklin.com.sg

**CFE Engineers Asia Pte. Ltd.**

10 Pioneer Sector 1  
Singapore 628444  
Tel : +65 6861 6006  
Fax : +65 6863 6106  
Email : general@cfe.com.sg

**Energy Equipment Services Pte. Ltd.**

11 Pandan Road  
Singapore 609259  
Tel : +65 6266 8786  
Fax : +65 6266 8780  
Email : general@eesvc.com.sg

**Franklin Offshore Americas, Inc.**

P.O. Box 338  
1998 FM 362  
Brookshire, Texas 77423  
U.S.A.  
Tel : +1 (281) 578 3828  
Email : general@franklinamericas.com

**Franklin Offshore Australia Pty. Ltd.**

Perth (Head Office)  
7 Possner Way  
Henderson, WA 6166  
Australia  
Tel : +61 (8) 9410 6000  
Fax : +61 (8) 9410 6001  
Email : sales@franklinoffshore.com.au

**Darwin**

(Operating Base)  
4 Cochrane Road, Berrimah  
Darwin NT 0828  
Australia  
Tel : +61 (8) 8947 3777  
Fax : +61 (8) 8947 3700  
Email : darwinsales@franklinoffshore.com.au

**Karratha**

(Operating Base)  
20b Seabrook Crescent  
Karratha, WA 6714  
Australia  
Tel : +61 (8) 9185 3080  
Fax : +61 (8) 9185 3546  
Email : dampiersales@franklinoffshore.com.au

**Franklin Offshore Caspian Ltd.**

Salyan Highway, 15th Km.  
Baku, AZ - 1023  
Azerbaijan  
Tel : +994 (12) 447 4071  
Fax : +994 (12) 447 4076  
Email : office@franklin.az

**Franklin Offshore Europe B.V.**

Scheepsbouwweg 45/Harbour 2610 - 2614  
3089 JW Rotterdam  
The Netherlands  
Tel : +31 (0) 10 294 0857  
Fax : +31 (0) 10 495 4085  
Email : info@franklineurope.nl

**PT. Franklin Offshore Indonesia Perkasa**

(Office/Yard)  
Jl. Mulawarman No. 48 RT. 38  
Kelurahan Manggar  
Kecamatan Balikpapan Timur  
Balikpapan 76116  
Kalimantan Timur, Indonesia  
Tel : +62 542 743668  
Fax : +62 542 743688  
Email : enquiry@franklinindonesia.com

**Jakarta**

SOHO Podomoro City, Unit 2806  
Jl. Let. Jend. S. Parman Kav. 28.  
Jakarta Barat 11470, Indonesia  
Tel : +62 278 93490  
Fax : +62 278 93492  
Email : enquiry@franklinindonesia.com

**Franklin Offshore Korea Co., Ltd.**

57, Mieumsandan 6-ro  
Gangseo-gu  
Busan, Republic of Korea 46744  
Tel : +82 (51) 832 0156/7  
Fax : +82 (51) 832 0158  
Email : franklin@franklinkorea.com

**Franklin Offshore Qatar W.L.L.**

Street No. 45, Gate 44  
Salwa Industrial Area  
PO Box 32297  
Doha, Qatar  
Tel : +974 4450 0338  
Fax : +974 4450 0339  
Email : general@franklinqatar.com

Kindly note that the information above are subjected to change, kindly visit our website for latest contact details.

[www.franklin.com.sg](http://www.franklin.com.sg)