22 Components and Systems for Offshore Activities

22.01 Lifting and Deck Handling Systems

Cranes

Box Boom

- 22.01.01G Stiff Boom, Telescopic Boom, Knuckle Boom
- 22.01.02G Knuckle telescopic Boom
- 22.01.03G Fully Foldable

Lattice Boom

- 22.01.04G <1000 ton lift
- 22.01.05G >1000 ton lift

- 22.01.06S Rental of Cranes

- 22.01.07G A-Frames
- 22.01.08G Deck Skidding Systems
- 22.01.09G Moon Pool Hatches
- 22.01.10G Launch and Recovery Systems (LARS)
- 22.01.11G Davits
- 22.01.12G Self-Loading and Unloading Systems
- 02.01.13G Side Loading Systems
- 22.01.14G LNG Loading & Offloading Systems
- 22.01.15G Jacking Systems

22.02 Deck Machinery

Winches

- Engineering and Manufacturing
  - 22.02.01G Heavy Duty Winches (>25 ton of line pull)
  - 22.02.02G Standard Winches (<25 ton of line pull)
  - 22.02.03G Abandon and Recovery Winches
- 22.02.04S Rental of Winches

Pipe and Cable Laying

- Integrated Systems
  - 22.02.05G S-lay
  - 22.02.06G J-lay
  - 22.02.07G Reel-lay
- Pipe/Cable Handling tools and systems
  - 22.02.08G Carousels, Turntables and Baskets
  - 22.02.09G Reels
  - 22.02.10G Reel Drive Systems
  - 22.02.11G Pipe Straighteners
  - 22.02.12G Tensioners
  - 22.02.13G Hang-off Clamps
  - 22.02.14G PLET Handling Equipment
  - 22.02.15G Pipe Conveyors, Rollers and Firing lines
- Rental
  - 22.02.16S Tensioners
  - 22.02.17S Carousels, Turntables and Baskets
  - 22.02.18S Reels
  - 22.02.19S Rental of Reel Drive Systems

- 22.02.20G Offshore Wind Turbines Handling Systems
- 22.02.21G Pipeline Emergency Repair Systems
- 22.02.22G Dredging Equipment and Systems

22.03 Vessel Bulk Equipment and Systems

- 22.03.01G Lifeboats
- 22.03.02G Living Quarters
- 22.03.03G Helidecks
- 22.03.04G HVAC Marine Systems
- 22.03.05G Hydraulic System for Offshore Applications
- 22.03.06G Trash Compactor Package

22.04 Offshore Hoses

- 22.04.01G Single Carcass
- 22.04.02G Double Carcass
- 22.04.03G High Pressure Hoses (up to 15000 psi)
- 22.04.04G For Cryogenic applications
- 22.04.05G For Dredging applications
- 22.04.06G For Docks
- 22.04.07G Couplings

22.05 Components and Systems for Cranes and Winches

- 22.05.01G Control Systems
- 22.05.02G Motion Compensation Systems
- 22.05.03G Other Mechanical Components

Components and Systems for Offshore Activities

This Group of Categories identifies the mission specific and ancillary components and systems required for offshore operations with vessels. In fact, the components and systems that enable the vessel to navigate in safety and that are common to all vessels, no matter of the operational need of the vessel itself, and are mapped in Group 21.

Mission specific equipment and systems are utilised by various aspects of the Subsea sector including Oil & Gas, Exploration & Production, Subsea Minerals, Submarine Fibre Optic Communication, Power Cable installation and Renewable Energy project.

The Systems are developed according to the competences of a System Integrator that design the solution and procured the required components.

Main rationales behind the Standard Categorization

Lifting Systems and Deck Handling equipment

- "Offshore Cranes" refer to all types of Cranes, excluding A-Frames
  - Offshore Cranes are typically tailor made designed according to the customer requirements, in order to prevent all the risks that an offshore handling equipment could meet;
  - Typical application of Offshore Cranes are: DSV vessels, Subsea construction and maintenance vessels, PSV, AHT and AHTS vessels, Drill ships, FPSO/FSO, Research vessels, Seismic vessels;
- This Family does not include Truck Mounted Specialized Material Handling Cranes.
- Rental of cranes refers to small / medium foldable cranes, easily installed on vessels' decks. Therefore, the rental of port / shipyard cranes for on-pier assembly operations of offshore constructions is excluded.
- All types of Side loading system are covered in the related category: conveyor system, side mover, side swinger.
- Jacking Systems include Single acting hydraulic jacking systems as well as Continuous hydraulic jacking systems.

Deck Machineries

- Winches can be used for different application: load lifting, Umbilical/Subsea/Heavy lift, abandonment and recovery and general purpose.
- Winches are not detailed by type of driver: hydraulic, electric, electro-hydraulic.
- Rental of winches refers to hydraulic, electric or pneumatic driven devices.
- Capstans are a Category of the Group 21.
- Integrated Systems for Pipe and Cable Laying are delivered by Systems Integrators that can leverage on the combination of engineering and Project Management competences.
- Trend of increase in integration of the pipe/cable laying systems with the vessel, also through automation of working processes and integration of automation systems.
- Tensioners refers to systems for pipe, umbilical, cable and optic fiber.
- In terms of pipe-laying methods:
  - The S-Lay derives name from "S" curvature of pipe under the water and are typically used in shallow waters (<6,500 feet);
  - The J-Lay derives name from "J" curvature of pipe under the water and is typically used in deeper waters than S-lay vessels;
  - The Reel-lay derives name from on-board ability to reel pipe (like a fishing line); Reels can unwind horizontally or vertically: Horizontal reels lay pipe in S-Lay configuration, Vertical reels lay pipe in J-lay configuration.
- Carousels are used for storage during transportation and installation of flexible pipe, umbilicals, risers and other products for offshore applications.

Vessel Bulk Equipment and Systems

- Lifeboats is a generic category for all types of lifeboats ranging from Free Fall Lifeboats, totally enclosed Lifeboats, Rescue Boats, Hyperbaric Lifeboats and Offshore Capsules.

Offshore Hoses

- Double Carcass hoses have a primary carcass surrounded by a secondary carcass – in essence a hose within a hose.
- Cryogenic hoses refer to Hoses for offshore LNG transfer.

Components and systems for Cranes and Winches

- This family refers to the principal components and systems that can be delivered integrated in the main drive systems as well as an add-on to an existing systems.
- Mechanical components refer to the principal items used to design a crane, winch or A-Frame (e.g., Gearboxes, bearings, brakes).
- Heave compensation systems can vary from Active to Passive. AHC differs from PHC by having a control system that actively tries to compensate for any movement at a specific point, using power to gain accuracy. This category includes also constant tensions (CT).