Huisman is a worldwide operating company with extensive experience in the design and manufacturing of heavy construction equipment for world’s leading on- and offshore companies. Founded in 1929 and originally a steel construction company - Huisman joined forces with engineering company ITREC in 1987 to develop products entirely under own management, from concept to installation. Our product range can be divided into six main categories: Cranes, Pipelay Equipment, Drilling Equipment, Winches, Vessel Designs and Specials ranging from stand-alone components to highly engineered integrated systems. Our production is divided between our production facilities in The Netherlands, China and the Czech Republic. The construction of our new production facility in Santa Catarina, Brazil, has started early 2012 and will be operational in 2015. Additional sales, engineering and service offices are located in Brazil, Singapore, Norway, Australia and the USA.

SAFETY, HEALTH AND ENVIRONMENT
We have high values on being a responsible company and therefore the safety, environmental and health impact of our operations is a priority within all stages of the project.

QUALITY
The equipment delivered by Huisman is often the critical main equipment onboard and its reliability is of utmost importance to our clients. Delivering high quality products has therefore been a key company value since its establishment. As a result, our equipment is internationally known for its high quality and reliability during operations. It meets the most stringent performance criteria and is certified by recognised authorities such as ABS, DNV, API, TÜV, Lloyd’s etc.

SERVICE
A dedicated worldwide operating service team of skilled professionals is on stand-by to provide advice, training and service support before, during and after installation and delivery. Our service network is managed from Huisman in The Netherlands and our local service offices in Rio de Janeiro (Brazil), Houston (USA), Perth (Australia) and Singapore are on stand-by to provide service support, on location, as well as by remote access.

TRAINING
Huisman Global Services founded the Huisman Academy in 2011. This Schiedam-based training facility is used to support Huisman clients in operating and maintaining the equipment in the most effective and safe way. The Huisman Academy can offer simulator training on how to operate the Huisman equipment.

GLOBAL OPERATIONS
A global market requires global and local solutions. Therefore, Huisman has expanded its engineering and production capacity from Schiedam, The Netherlands, to Sviadnov, Czech Republic, in 1997 and in 2007 to Fujian, China. Generating over 100,000m² of total production surface. All facilities play an important role in the Huisman production force. The construction of our new production facility in Santa Catarina, Brazil, has started early 2012 and will be operational in 2015.

For additional local sales and engineering support, Huisman holds offices in Rio de Janeiro (Brazil), Houston (USA), Bergen (Norway), Perth (Australia) and Singapore.

REL IABLE PARTNER
Due to our strong belief in long lasting partnerships with our clients, our commitment to finding new technical solutions and our dedication to delivering them as turnkey projects, we are internationally valued as a solid, reliable partner. Our extensive track record and the large number of long-lasting client relationships prove that we deliver state-of-the-art equipment, fully tested, within schedule and ready for commercial operation.

TURNKEY DELIVERY
Our in-house design and engineering expertise, in combination with our production, testing, commissioning and installation facilities, enable us to deliver custom-designed equipment on a turnkey basis.

INNOVATIVE SOLUTIONS
We are constantly working on new solutions and systems which, we believe add value to the market’s existing technologies. These innovations have been implemented into many of our products. As we have extensive operational experience with a wide variety of heavy construction equipment, we are able to use the best solutions for new products and projects.

Our internal disciplines include Mechanical, Structural, Naval, Hydraulic, Electrical and Software Engineering.
For local sales, commissioning, service and after sales support, Huisman has offices in Schiedam (The Netherlands), Rio de Janeiro (Brazil), Fujian (China), Rosenberg (USA), Bergen (Norway), Perth (Australia) and Singapore.

For more information about our locations, please visit our website huismanequipment.com.
Huisman is a world market leader in the turnkey delivery of deepwater pipelay systems. We deliver integrated systems such as Flex-lay systems, S-lay systems, J-lay systems, and Reel-lay systems. We also deliver combination systems such as the Multi-lay systems. In addition to fully integrated pipelay systems, we can also provide a full package of related standalone equipment such as baskets, Reel drive systems etc.

Generally, the complexity of our projects and their innovative character require solution-oriented thinking, technical excellence, creativity and a passion for innovation. This is why we not only provide standardized pipelay systems, but also highly customized pipelay systems. By closely cooperating with our clients we can meet client specific lay requirements and create the pipelay systems of the future, equipped for deeper waters and higher capacities.
FEATURES OF A FLEX-LAY SYSTEM

- Installation of flexible pipelines, risers and in-line structures
- Suitable for laying pipe in shallow to deep waters
- High lay rates
- Pipes are flexible and therefore less sensitive to fatigue
- Less complex installation and Abandonment & Recovery procedure for pipelines and in-line structures
- In standard configuration: not suited for installation of rigid pipe

FLEX-LAY SYSTEM

Over the years Huisman has designed and delivered a large number of Flex-lay systems. The Flex-lay method combines capabilities for the installation of flexible pipelines, risers and in-line structures. The most notable features of a Flex-lay system are its vertical ramp, equipped with one or more tensioners, and a chute or wheel on top.

The ramp is kept upright by two fixed struts to the deck or can be made adjustable with an adjuster system. The flexible pipe is spooled from a reel, carousel or basket, and then bent over the chute and guided through the tensioners into the water and onto the seabed.

Flex-lay systems offer an efficient pipelay method with a specific advantage: the installed pipelines are less sensitive to fatigue and therefore require less complex installation and Abandonment & Recovery procedures. Flex-lay systems are less suitable for the installation of rigid pipe, but can be adapted to perform J-lay or Reel-lay.

The large variety of Flex-lay systems we have delivered has broadened our scope of expertise, from concept design to start-up of operations. This has enabled us to easily customize and further develop Flex-lay systems for larger water depths and the handling of larger PLETs.
J-LAY

J-LAY SYSTEM
J-lay is used to install subsea rigid pipelines in deep water. With a J-lay system pipe stalks, consisting of up to six pipes with a total length of 72m, are upended and welded to the seagoing pipe in a near vertical ramp.

The ramp angle is adjusted so that it is in line with the pipe catenary hanging to the seabed. This way bending of the pipe is kept to a minimum. The J-lay method is very suitable for deep water pipelaying because the pipe leaves the lay system in an almost vertical position and the pipeline is only bent once during installation (on the seabed). This reduced amount of bending is beneficial for installing pipelines that are sensitive to fatigue. Compared to other lay methods, J-lay has a relatively low production rate due to the limited number of workstations. The J-lay method is less suitable for shallow waters as this requires a close to horizontal departure angle.

We have solid experience in delivering complete J-lay systems including tower structures, tower angle adjustment systems, pipe handling equipment, line-up systems and the control system.

FEATURES OF A J-LAY SYSTEM
- Installation of deep water rigid subsea pipelines
- Installation of large diameter and concrete coated pipelines
- Beneficial for installation of fatigue sensitive pipes such as risers
- Equipped to install special items such as PLETs
- Relatively low production rate due to the single welding position
- Very high pipelay tension
- Less suitable for shallow water pipeline installation
S-LAY SYSTEM
With the S-lay installation method pipe joints are welded onboard, leave the vessel horizontally and are guided by a stinger; a pipe supporting structure that is supported behind the ship and controls the bend radius of the seagoing pipe string to prevent excessive bending.

Due to the high production rate and the possibility to install concrete coated pipe, S-lay is extremely suitable for pipe installation in shallow and intermediate water depths.

Larger water depths are also possible, but require a relatively long stinger and a large vessel to support it.

An example of a Huisman designed and delivered S-lay system can be found onboard the Seven Borealis. This vessel combines a 600mt S-lay system with a J-lay tower for pipelaying purposes and a 5,000mt Offshore Mast Crane for heavy lifting and deep water construction.

FEATURES OF A S-LAY SYSTEM
- Suitable for installation in shallow and intermediate water depths
- High production rate due to multiple workstations
- Suitable for installing concrete coated pipe
- Deeper water requires a relatively long stinger
We can deliver complex Reel-lay systems including main and piggy-back reels, traction and storage winches, tensioners and supporting cranes.

An example of Huisman’s innovative drive is the development of a modular skidding Reel. This type of system can carry several reels with pipe on deck, which can be lifted onboard the vessel using her own main crane and can then be skidded over deck rails to unspool over the ramp. With this setup it is possible to exchange the empty reels with full reels without the pipelay vessel having to shuttle between the pipelay location and the spoolbase. This results in a more efficient use of the pipelay vessel and a higher effective lay rate.

Reel-lay can be easily combined with Flex-lay capabilities.

Another method for the installation of rigid subsea pipelines is by Reel-lay. Long pipe segments are welded, tested and coated onshore and then spooled onto a large, usually vertically oriented pipe reel, in one continuous length. Once the Reel-lay vessel is in position, the pipe is unspooled, straightened and then lowered to the seabed as the vessel moves forward.

The major advantages of Reel-lay are the high production rate as well as the controlled welding and inspection conditions onshore. These advantages make Reel-lay an extremely efficient method for the installation of pipelines in all water depths. To make Reel-lay efficient, a spoolbase is required nearby the Reel-lay vessel to reduce transit time to and from the pipe installation location.

Features of a Reel-lay System
- Suitable for shallow to ultra-deep waters
- Very high production rate
- Pipe welding in non-critical vessel time (onshore)
- Dedicated spoolbase required for pipe preparation
- Diameter of the pipe is restricted by the size of the reel
- Not suitable for installation of concrete coated pipe
- Used for pipelines with thermal outer coatings or inner linings
- Due to the plastic bending less suitable for fatigue sensitive pipes
MULTI-LAY SYSTEM

Pipeelay contractors more and more often decide to combine pipeelay methods onboard one vessel as the infrastructure of an oil and gas field often consists of different types of pipe that require different lay methods. This allows for large flexibility and cost efficiency as one vessel is capable of operations in most water depths and is equipped with the most cost-efficient installation method for the specific pipe.

One of our Multi-lay systems, onboard Subsea 7’s Seven Seas, features a single firing line - combining Flex-lay, J-lay and Reel-lay - and has been awarded the Maritime Innovation Award 2008. Our innovative and compact design of retractable tensioners and J-lay and Reel-lay modules that allow for installation onboard relatively small-sized vessels, is mentioned as a remarkable feature, as it offers more flexibility and efficiency.
HUISMAN EQUIPMENT BV
Admiraal Trompstraat 2
3115 HH Schiedam
P.O. Box 150
3100 AD Schiedam
The Netherlands
Harbour no. 561

Phone: +31 (0)88 070 22 22
Fax: +31 (0)88 070 22 20
E-mail: info@huisman-nl.com
www.huismanequipment.com