

Selecting the Right Wire and Cable for Offshore Applications

Considerations for Engineers
and Electricians



Draka Marine, Oil & Gas International

A Division of Draka Cableteq

Introduction

In offshore oil and gas operations, downtime and delay can cost millions of dollars. Any number of systems and components can impact operations, but among the most critical are the wire and cable used for instrumentation, communication, signaling, power, lighting, and control. These items must meet a variety of stringent standards, but choosing wire and cable is more complicated than simply complying with regulations or meeting specifications. Simply put, when specifying or selecting wire and cable there is more to consider than what comes on the spool.

As demand soars and exploration and production become more challenging, engineers are asked to minimize every risk in both the new construction process and maintenance and repair operations.

This handbook provides a list of key factors to consider as you plan for and purchase wire and cable.

A dedication to the marine, oil, and gas market

Several companies sell wire and cable to the offshore market. But Draka Marine, Oil & Gas International is a division of Draka Cableteq, the only global cable company with an entire division specializing in service to the marine, oil, and gas market. Draka Marine, Oil & Gas International has been serving customers for more than 30 years and offers a full range of wire, cable, and accessory products.

With 11 factories located around the world dedicated to the production of offshore products, Draka has the flexibility and capacity to help customers achieve rapid time to first oil and maximum continuity of production.

Draka operates its own distribution centers in Houston, Texas; Aberdeen, Scotland; and Jurong Town, Singapore, providing local support for offshore operations in the Gulf of Mexico, the North Sea, and the Asia Pacific region. In addition, the company provides products and support through a global network of distributors covering offshore operations in Canada, the North Sea, and the Middle East.

Our Brands

Draka offers a broad range of wire, cable, and accessory products under the brand names Bostrig, Bostmarine, Shipline, Shipline Classic, Shipline Plus, HXXM, and NEK606/BFOU/RFOU/BU/RU.

Breadth of product

While many suppliers can provide some wire or cable, few can deliver the full range of products needed in marine, oil, and gas applications. Being forced to source wire and cable from multiple vendors can add significant delay—and cost—to both new construction and maintenance and repair operations.

That's why Draka offers the industry's largest catalog of wire, cable, and accessory products for mobile offshore drilling units, semi-submersibles, and FPSOs. From cold bend/impact capability at $-40^{\circ}\text{C}/-35^{\circ}\text{C}$ to the ability to withstand a 1100°C hydrocarbon fire for 30 minutes, our goal is to provide products for every application and environment customers are likely to encounter.

Our wire and cable offerings include metallic and fiber; high, medium, and low voltage; armored and unarmored; shielded



and unshielded; single and multi-conductors; and water-sealed, halogen-free, flame-retardant, fire-resistant, and drilling mud-resistant products.

The majority of customer requirements can be met with standard products, but Draka stands ready to customize products, if appropriate, to meet unique requirements. In fact, often what some companies consider a custom product is offered by Draka as a standard product. We can easily schedule production across our manufacturing facilities to supply the full range of necessary wire and cable, in any needed quantity to meet customer schedules.

In-depth product and application knowledge

An experienced, well-stocked vendor with robust manufacturing and distribution capability can take some of the risk out of ordering critical components. A true partner, however, should provide knowledge along with matériel. Product-specific expertise can be invaluable, not just when choosing specific wire and cable, but in putting them to work.

Along with breadth of product, Draka delivers unmatched expertise in the selection and application of wire and cable in marine and offshore operations. With a staff of more than 200 specialists, the company is the best in the industry at helping customers select and use wire and cable efficiently and cost-effectively. For example, our experts can suggest alternative products that will meet your requirements at a lower cost, or with less weight.

Certifications and Approvals

All Draka Marine, Oil & Gas wire and cable is manufactured to the highest international standards, including IEEE, IEC, NEK, and BS (UKOOA).

Products are fully compliant with U.S. and Canadian Coast Guard Regulations governing the use of wire and cable and are certified and/or listed by all major classification societies, including ABS, BV, CCS, CSA, DNV, ETL, GL, ISO (9001 quality standards), LRS, RINA, UL.

Controlling risk

Offshore operations can cost hundreds of thousands of dollars a day. While wire and cable represent a significant fraction of the cost of ongoing operations, that cost is small compared to the value of timely implementation and trouble-free operation. In other words, the choice and implementation of wire and cable can help eliminate problems in performance, the possibility of failure, and costly delays.

Draka is keenly aware of our customers' sensitivity to risk and works hard to control it, beginning with product design and continuing on through ongoing operations. Close ongoing contact with customers helps identify areas of need and minimize gaps in our product line. Thirty years of experience ensure careful, intelligent design in full compliance with all pertinent regulations and requirements. Products are manu-



factured to the highest standards, with production spread across 11 factories to eliminate the possibility of a catastrophic interruption in output. And finished product is stockpiled for rapid delivery at distribution centers close to offshore markets worldwide.

By delivering a full range of well designed products, on time and well supported, Draka helps eliminate the costly risks of poor performance, projects falling behind schedule, and unnecessary downtime.

Controlling cost

An experienced engineer knows that cost is more than a function of price. While Draka strives to be competitive, even with price parity working with Draka can actually reduce your total cost of acquisition for wire and cable.

Sourcing from a single vendor can alone simplify the entire process and reduce purchasing overhead. In addition, for complex multi-product orders, Draka experts can often help consolidate orders, reducing the number of line items for significant economies of scale.

Often, a single product can be substituted for several others with no loss in performance and significant reduction in cost. In many cases, such consolidation can eliminate the problem of meeting minimum order

requirements and the cost of restocking fees when surplus wire or cable is returned for credit. At the same time, this standardization can simplify engineering, installation, and maintenance, further reducing the cost of ownership.

On a recent project, Draka experts helped a customer consolidate a list of 180 products, of which 25 were stock items, to a list of 90, of which 88 were stock items, saving the customer both time and money. This kind of consolidation would be difficult or impossible without the expertise and comprehensive product selection Draka offers.

Focus on availability

The right product is of no use if it isn't where you need it when you need it, which is no small concern since offshore operations can be located in very remote places. When you need product to keep a facility running or return a vessel to service, nothing is more critical than availability.

Chances are good that, whatever your needs, Draka has the wire and cable products you need at a facility nearby. Our global production capabilities and strategically located distribution centers come together to provide the products you need with no time-zone limitations.

A commitment to long-term partnership

As exploration and production operations have become more complex, and more global, Draka has recognized the need for a comprehensive approach to the specification, selection, and procurement of wire and cable.

We created the International Project Center as a resource to help customers streamline processes, control costs, and stay on schedule. It offers a dedicated, experienced team focused on meeting the wire and cable needs of your project.

From qualification, specification, quotation and contract, to manufacturing, testing, documentation, and delivery, the mission of the International Project Center is to ensure production and on-time delivery of wire and cable at every stage. There is simply nothing else like it in the wire and cable industry.

Driving Innovation

In operations as costly and critical as offshore oil and gas production, there is no room for guesswork in product development. Innovation and time-to-market are critical, but real-world operations cannot serve as testing laboratories for new products. At Draka, product development is an ongoing process, beginning, in many cases, years before a product reaches the market.

Draka marketing and R&D departments work hand-in-hand to identify needs in the marketplace. In some cases, the company will work directly with customers to define requirements and test methods.



Likewise, for ongoing, multi-year agreements, Draka makes an ideal partner. Our experience lets us provide ongoing consultation to reduce the burden on the customer and help control costs. With our extensive R&D resources and manufacturing and distribution capabilities, we can deliver—and develop, if necessary—the right materials for every phase of the process and help manage supply to keep construction and ongoing programs running smoothly.

The case for Draka Marine, Oil & Gas International

Given competitive pressures and the inherent complexity of today's offshore operations, every purchasing decision must be part of a rational, methodical process. The selection of critical wire and cable components is no exception.

A vendor's contribution to your project and operations should be aligned with its core competency, and vendors should be selected based on their understanding of and commitment to your industry, as well as for the quality and availability of their products.

By that measure, it's easy to see why Draka Marine, Oil & Gas International has earned a reputation as the most dependable provider of wire and cable solutions for marine and offshore oil and gas operations.

Only Draka:

has an entire division dedicated to serving the unique needs of the global marine, oil, and gas market

- offers the range of products and expertise that makes single-sourcing a possibility—and an advantage
- helps customers manage risk with a network of 11 manufacturing facilities and distribution in every major offshore arena
- has a team of 200 wire and cable specialists that provide timely, local support with no time zone or language barriers

Our people, products, and expertise in offshore wire and cable are unrivaled. Please contact us first for your maintenance and repair needs, or for expert guidance on your next new-build project.

For maintenance and repair needs,
or expert guidance for new-build projects,
please contact any of our worldwide locations

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