



Kevlar®

Only by DuPont

Mooring lines made from DuPont Kevlar® aramid fibers are stronger, safer and easier to handle than traditional steel lines

A good deck crew on a commercial tanker can make mooring a ship look easy, but it can be a time-consuming and costly process.

With the right tools, such as mooring lines made from DuPont Kevlar aramid, you can reduce potential delays, heighten your crew's productivity and increase cost efficiencies.

These revolutionary new lightweight lines, engineered by Whitehill Manufacturing, use a wire rope construction with Kevlar strands. Each strand is covered with a braided, Multiplex™ jacket made of Kevlar and Dacron® polyester. The inside core is protected from chafe which translates into longer line life, while the outside jacket delivers a sure grip on winches and a soft touch for handling.

High-performance advantage

Crew members and dock hands find lighter, stronger, easier to handle mooring lines of Kevlar a high-performance alternative to traditional steel, nylon or polyester lines.



"I'm in love with them," says Nereo Navarro, a crew member on Conoco's oil tanker, the Continental. **"We can pass three lines at once where with wire we can only pass one at a time."**

Bernardo Castro, the Captain of the Continental, agrees. *"My crew is happier and works better.... The (Kevlar) lines are lighter and more flexible than wire lines.... If we have heavy rope, it can take one-and-a-half hours to moor, but this morning it only took us 20 minutes. Mooring lines of Kevlar give us more time to do the rest of the jobs in a better manner because the crew is less tired."*

Mooring lines of Kevlar fibers are pound for pound five times as strong as steel and much lighter in weight. They're also stronger at the same weight than nylon or polyester lines. Compare a 600' steel mooring line at 1,734 pounds to a 600' mooring line of Kevlar of equal breaking strength; the line made with Kevlar fibers weighs only 356 pounds or one-fifth the weight of the steel line.



Safety features

The Kevlar weight advantage is a big help when it comes to worker safety. According to the U.S. Department of Transportation, almost 20% of all injuries caused by mooring lines are back injuries. With lightweight lines of Kevlar, the potential for back injuries is dramatically reduced.



Other safety advantages result from the fact that lines of Kevlar have lower lashback energy than other synthetics, and they have a unique high resistance to heat. And, because they don't stretch like nylon mooring lines, the moored ship doesn't drift.

Comfortable handling

As tough as they are, lines made with Kevlar have a soft touch for more comfortable handling. For example, these lines won't develop the "fish hooks" that steel lines do. Says one deck hand, *"One problem with steel cable is if you're trying to get a grip on it and it has little fragments sticking out of it, it has a tendency to poke holes in your glove, not to mention your skin."*

Because mooring lines made with Kevlar aramid fibers don't have to be greased like steel lines to prevent rusting, they're cleaner to work with. *"Steel wire is lubricated,"* explains a dock hand, *"and the oils are just greasy and dirty and hard to work with compared to a line which is relatively clean and much lighter than wire."*

Environmental benefit

Steel cables are lubricated with as much as two drums of grease. When these greased lines hit the water, oil residue forms on the water surface. Because they don't need lubrication, lines of Kevlar don't leave an

oil sheen on the water. And, because the crew doesn't need to spend hours lubricating the lines, you save time and money.

An additional advantage over heavy steel is the way Kevlar treats the ship. Lines of Kevlar, for example, don't chip paint off the ship's deck and sides as they're dragged across it.

Undoubtedly the easiest-to-use ropes available today, lines made from Kevlar fibers are used on more than 75 U.S. Naval ships for their safety and strength.

This is just one of many unique applications using DuPont Kevlar and Dacron fibers. For more information about special industrial ropes or cables, contact Whitehill Manufacturing at 1-610-494-2378, or DuPont at 1-800-453-8527.



Application: Mooring lines made of DuPont Kevlar® aramid.

Key Benefit: The unique strength-to-weight ratio of Kevlar (pound for pound, five times as strong as steel) results in a safer, easier to handle, high-performance line.

Cable Manufacturer: Whitehill Manufacturing Co.

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