Samson

At the Samson rope manufacturing plant in Lafayette, La., miles upon miles of tiny filaments about the thickness of a hair are twisted and braided until they become thick industrial ropes, strong enough to secure an offshore oil platform or moor a ship.

The filaments are twisted to make yarns, which are then combined to make strands, which are then braided into ropes up to 8-inches thick. The plant in Lafayette has the world's largest

Photo by Tracie Morris Schaefer


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1. Samson spins customized yarns out of reels of synthetic fiber filaments. Workers install different types of gears in the machinery to produce specifics level of twist in the yarn that will influence the strength and other characteristics of the finished rope. 2. Yarns are fed through machines that produce a customizable strand, which will later be braided into a rope.

12-strand braider, which to the untrained eye resembles a carousel, with five-foot tall spools loaded with strands of rope, dancing on a platform in intertwining patterns.

The machine, which Samson workers have nicknamed Darth Braider, was imported from Oldenburg, Germany, and was shipped in eight containers through the Port of New Orleans before being assembled at the Lafayette Plant. Another piece of heavy machinery which braids protective coverings over rope cores was imported through the Port Of New Orleans.

In addition to helping Samson take delivery of its high-tech equipment, The Port of New Orleans also offers a means for Samson to export its products worldwide. In August, Samson will deliver a single 6 1/2 inch circumference rope that is over 3 miles long, weighs 20,000 pounds, and is spooled onto a custom metal reel. It will be shipped from the Napoleon Avenue Container Terminal in an open-topped container.

While today Samson continues to find new international markets for its custom-made products, the company found itself at a crossroads a decade ago as it began to lose market share for traditional rope products to competitors in other countries with lower labor and production costs, says Ron Bryant, Plant Manager for Samson's Lafayette plant. That's when the company decided to make some drastic changes, and retooled itself. "About 10 years ago, we changed

4. Strands are wound onto large reels. Paul Benjamin oversees the process and unloads the reels of strands that are ready to be braided. The reels are color coded so that strands with different types of twist can be combined to produce ropes with special characteristics. 5. While much of Samson's manufacturing is completed on high tech machines, highly skilled workers are needed to hand splice ropes. Josh Landry organizes his strands as he completes a splice. 6. Seth Jones uses a large wooden fid to splice an eye onto a rope. This segment of rope will be attached to an anchor and has been specially designed to withstand the damage to a rope's core when it is sunk underneath mud. 7. A cover braider, which was also shipped through the Port of New Orleans, weaves a protective covering onto a rope core. The yarns that make up this cover are orange because they have been dipped in a coating to help protect and strengthen the rope.

our focus to providing solutions to technical problems, rather than continuing to make traditional cordage," he says.

You won't find any of Samson's rope at your neighborhood hardware store; instead, Samson focuses on engineering specialized ropes for specific purposes. It produces specialized commercial marine lines for towing, mooring and offshore oil and gas production. It makes industrial ropes that utility companies use to string power lines. It makes recreational marine lines used for high speed sailing, and it makes ropes that arborists use when cutting and pruning trees.

One of Samson's 12-strand ropes was used to tow an iceberg off the Coast of Nova Scotia, where the owners of an oil rig want to make sure that the ice drifts stay a safe distance from their drilling rig. The strongest product to come out of the Lafayette plant was a rope with a diameter of 144 millimeters (about 5½ inches) and a 3.6 million-pound breaking point that was used to help install the foundations for 140 turbines for the Greater Gobbard wind farm project in the North Sea.

With the equipment at the Lafayette Plant and another plant at its headquarters in Ferndale, Wash., Samson can engineer ropes to meet specific strength, weight, thickness, abrasion, friction and buoyancy requirements, Bryant says. By using different types of nylon, polyester and high-strength

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polyethylene fibers and tweaking the way that they are twisted and braided, Samson can engineer high performance ropes suited to the users' needs.

In many cases, Samson advises customers how to get synthetic-fiber rope to do the job of steel cables. Bryant says that it's hard to maintain the strength of a steel cable that exceeds 10,000 feet in length. At long lengths, supporting the weight of the cable absorbs much of the strength of the cable. That doesn't leave much strength for lifting or tugging. But synthetic ropes made of high modulus polyethylene are size for size the same strength as wire rope, but only one-seventh the weight. When ropes are used in water, they can be engineered to be buoyant, ensuring that little or none of the strength of the rope is eaten up by its own weight.

Samson traces its roots back 130 years, and has remained on the technological forefront. Samson developed the first synthetic double-braided rope in 1957. In the 1980s, it pioneered the use of High Modulus Polyethylene ropes, with three to four times the strength of conventional nylon and polyester fiber. Today, the company is also using Dyneema® fiber, which has the world's highest strength to weight ratio. Samson continues to invest heavily in research and development so it can continue to meet the world's most difficult lifting, tugging or mooring challenges.