



CASE STUDY

PRIORITIZING SAFETY AND EFFICIENCY

**Svitzer A/S Adopts Samson Fusion-12[™]
Lines for Midsized Tugs**



samson
THE STRONGEST NAME IN ROPE

“We worked together with Samson to find the best solution for each tug and the operational situations they are expected to encounter. By working with Samson, we’ve found the best fit-for-purpose ropes for tug applications while safely meeting our customer commitments.”

—Vimal Choy, Fleet Optimization
Manager Europe, Svitzer A/S

BACKGROUND

As part of the Maersk Group of companies, Svitzer A/S is the largest towage and salvage company in the world, operating more than 430 vessels and employing over 4,000 associates globally. From Europe, the Middle East, Africa, and Asia to Australia, North America, and South America, Svitzer’s fleet is composed of large, high-capacity tugs (80mt bollard pull or greater), midrange tugs (50mt–70mt bollard pull range), and legacy tugs, used mostly for utility work.

While Svitzer’s high-capacity tugs are obvious candidates for the latest in ultra-lightweight, high-strength, 100% Dyneema® fiber ropes such as Samson’s Saturn-12[™], midsized tug towing lines have traditionally been treated as a commodity.



Fusion-12 spools well without polyester's tendency to dive/bury on winch drums.

CHALLENGES

Until recently, Svitzer's midsize tugs utilized traditional fiber ropes, usually all polyester—either jacketed or single-braid. To meet the strength requirements of towage operations, these ropes are large, heavy, and difficult to handle. When wet, the weight problem is even greater. In addition, large polyester ropes don't always spool well on winch drums.

While jacketed ropes have a braided jacket to protect the core from damage, there are two problems:

- 1) The jackets part, compromising the strength of the line.
- 2) Jackets can mask damage to the core.

Repairing the damage often leads to long splicing sessions, taking the tug out of service for as long as a day. In the long run, it's cheaper to replace the ropes.

"In much of the tug industry, rope has been regarded as a commodity—if it breaks, throw it away and replace it," said Mark Gambell, EMEA technical sales manager for Samson. "We try to help the crews recognize that their ropes are highly complex, engineered pieces of equipment, just like the winches, drive systems, and other equipment they rely on daily. When a rope breaks, we take it very seriously and we want to understand the cause of the failure."

SOLUTION

Svitzer wanted a rope that could withstand the strain of standard operations encountered by midsize tugs, eliminating the headaches of undetected damage that can lead to early failure, but without the investment in high-performance, all-HMPE (high-modulus polyethylene) ropes. Samson's research and development team went to work.

The answer was Samson's *Fusion-12*. As a hybrid rope, it blends the strength and performance of Dyneema® HMPE with polyester fiber into a single-braid construction that is significantly stronger than other polyester ropes, yet lighter, more flexible, and easier to handle. *Fusion-12* spools well without polyester's tendency to dive/bury on winch drums. On-board inspection is a simple process and on-site splicing takes a fraction of the time required for jacketed constructions. Additionally, *Fusion-12* has reduced elongation and better resistance to abrasion compared to traditional polyester lines. Best of all, it bridges the investment gap between high-performance 100% HMPE and traditional fiber ropes.

PROCESS

The decision was made to fit tugs in Svitzer's London fleet and conduct a field trial; the *Svitzer Warden* was chosen for the first installation. The standard configuration installed was a 150-meter *Fusion-12* mainline with a 20-meter *Saturn-12* pendant with chafe protection. Samson was on board for installations and conducted crew training in inspecting, splicing, and maintaining the new ropes.

WHEN COMPARED TO JACKETED LINES, FUSION-12 LINES:

- > Perform 150% More Tows
- > Allow 30 Meters More Rope on the Winch Drum



With a robust delivery schedule to both replace existing vessels and augment port capabilities, Svitzer has added 15 new tugs to its European fleet over the past three years.

In general, large tugs are equipped with Samson *Saturn-12* mainlines and pendants protected with chafe gear. Each is installed with a backer line at the drum. This is Samson's Ultimate Towing System. Midsize tugs are fitted with a *Fusion-12* mainline with the same pendant system. The higher coefficient of friction due to the polyester content of *Fusion-12* allows it to be installed without a backer line. These lines outperform all polyester ropes on this class of tugs with higher strength, better abrasion resistance, and slightly lower elongation.

THERE'S MORE TO THE STORY

The field trial plan was to outfit two tugs the first year and compare them to the historical data for the jacketed lines they had been using. Typical retirement for the jacketed lines was 1,200 tows, with jacket failure being the main cause of retirement. So far, the *Fusion-12* lines have performed 2,500 to 3,000 tows and counting.

Since receiving the initial results of the field trial, two more London fleet tugs have been retrofitted, with two more on schedule after that.

Vimal Choy, fleet optimization manager at Svitzer, who has been key in spearheading the adoption and continued partnership commented: "We work very closely with Samson. I receive regular inspection reports on the condition of the ropes. The after-sale support is exemplary and Samson has shown genuine desire to improve our operations. Samson and Svitzer have similar values and it is a pleasure to continue to develop the strength of our partnership."

One of the first differences noted by the crew was that the new lines allow more rope on the winch drum compared to the previously used polyester rope. Since *Fusion-12* lays more neatly on the winch drum, it takes up less room. This allows for longer line lengths, if required.

Svitzer Warden's tugmaster, Adrian Hopkins, who has 30 years of tug experience, can attest to the impact the new ropes are making on a daily basis. "With *Fusion-12*, you just get that confident feeling," he said. "There's no creaking or banging with it (like jacketed lines)—you just feel confident. When the pilot calls for full power, you can put the levers down knowing the rope will hold up."

More importantly, the crews have happily accepted the *Fusion-12* rope. "The rope doesn't bury (dive) on the winch—if it does, it is easily rectified; it often just pulls out," Hopkins explained. "The crew doesn't have to haul out stoppers to pull out buried turns. The crews are all very impressed with it."

Looking beyond the number of tows and operational efficiencies, there are shared values when it comes to safety culture. Like Samson, Svitzer considers safety of operations to be of utmost priority. When handling heavy, large-diameter, traditional fiber ropes, back strain is a constant problem. Lighter-weight, stronger, and more flexible lines are easier to handle and result in fewer injuries. "We will not cut corners where safety is concerned," Choy said.



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—Adrian Hopkins, Tugmaster,
Svitzer Warden

Fusion-12's single-braid construction packs neatly on the drum without diving or burying; if it does, it just pulls out, no stoppers needed.





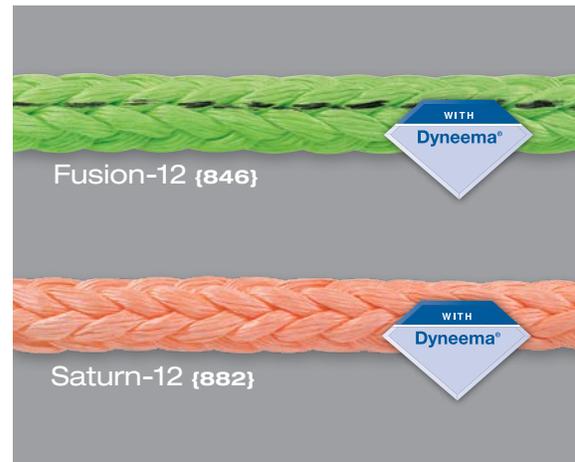
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—Vimal Choy, Fleet Optimization Manager, Svitzer A/S

ABOUT SAMSON

Samson is the worldwide leader in the development and manufacture of high-performance ropes, with a focus on research and development, and solving specific customer applications. For years, the company has been developing the Samson Advantage, a commitment to best-in-class products and the most complete package of pre- and post-sale support services in the industry. Every line sold is followed throughout its service life with installation assistance, crew training on inspection, handling and maintenance, periodic inspections, residual strength testing, and assistance with developing retirement criteria based on safety and reliability.

For more information on Samson’s complete line of high-performance ropes, visit SamsonRope.com or contact our customer service department at CustServ@SamsonRope.com.



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