



UTILITY PRODUCT GUIDE



## Hydro One Proves Samson Synthetic Cordage Pulls More than Its Weight

For more than 100 years, Hydro One has supplied power to Ontario, Canada. Today, they are one of North America's largest transmission and distribution companies with almost 30,000 km (18,600 miles) of transmission lines, 281 transmission stations, 1,015 distribution and regulating stations, and 1.3 million customers. Hydro One's mission is to deliver electricity to their consumers safely, while managing their resources with excellence and innovation. That's why they turned to Samson for solutions to a couple of tough jobs.

"Hydro One has historically used AmSteel® as a rigging line," says Jeff Pellar, Work Methods Specialist for Hydro One. "It has proven to be very durable and is a highly valued tool." Their experience with AmSteel®, a 12-strand single braid made with Dyneema® fiber, provided Hydro One with the confidence to explore purchasing long lengths of high-performance synthetic rope for use as pilot, intermediate, and/or bull lines for stringing conductors.

### AmSteel® II Plus: A Cost-Saving and Efficient Solution

"By using AmSteel® II Plus we were able to remove two steps in the process. And we were able to use the AmSteel® II Plus with existing stringing equipment—no special handling or special equipment was necessary the way it is when a very heavy steel bull line is used."

The first project Pellar had in mind was a typical job, calling for a helicopter to fly out a pilot line that would then pull an intermediate line that would pull the bull line, which would pull a two-conductor bundle, with pulling tensions of up to 15,000 lb. "Neither the existing pilot line nor the intermediate line had this much pulling capacity," says Pellar.

Two 30,000-ft lengths of 7/8" Samson AmSteel® II Plus, a lightweight, double braid made with a Dyneema® fiber core and a polyester cover, was selected to replace both the intermediary line and the bull line due to its superior strength-to-weight ratio, which increased the overall pulling capacity for the job. The greater pulling capacity meant that it was a safer pull and a lightweight solution, because AmSteel® II Plus relieved the weight burden by as much as 10 lbs per 100 ft of line compared with the intermediate line.

"By using AmSteel® II Plus we were able to remove two steps in the process. And we were able to use the AmSteel® II Plus with existing stringing equipment—no special handling or special equipment was necessary the way it is when a very heavy steel bull line is used." An added benefit for Hydro One is the ease of splicing AmSteel® II Plus compared with the other product, which Pellar says "is complex to splice and requires special training." Furthermore, Pellar concluded that "tangible cost savings were realized during the installation of conductors on this project due to reduced handling and better utilization of equipment."

### AmSteel® More than a Rigging Rope

"The use of high-performance AmSteel® eliminated the need for the intermediate line, cutting one step out of the overall operation."

Hydro One's second project called for 500 kV circuits in four-conductor bundles to be pulled simultaneously. This installation, again, called for the use of a pilot line, an intermediate line, and with pulling tensions in excess of 20,000 lb this time, a steel bull line.

Considering the success they had with AmSteel® II Plus, Hydro One turned to Samson again, but chose to replace the pilot and intermediate lines with two 30,000-ft lengths of 5/8" AmSteel®, the same rope they value and rely on for all their rigging.

"Its light weight and low elongation meant that AmSteel® as a pilot line was light enough for a helicopter to fly out and install stringing blocks, but it was also strong enough to pull in the steel bull line attached to the conductor," explains Pellar. "The use of high-performance AmSteel® eliminated the need for the intermediate line, cutting one step out of the overall operation" again demonstrating how Samson stringing lines can save money and make operations more efficient.



**samson**  
THE STRONGEST NAME IN ROPE



# SAMSON UTILITY PRODUCTS

## Engineered for Performance and Safety

### Winch Lines

When dead weight is being lifted or shifted, you can count on Samson's superior winch lines. Firm constructions, long lasting performance, and lifting capacity all easily define these ropes. They are available in several different fiber choices that enable you to regulate the length, diameter, and strength of the line. Samson winch lines are available in double or single braid, offering a choice of rope that will suit your specific application needs.

#### AmSteel® II Plus

Product Code: **575 (uncoated); 875 (coated)**

**CONSTRUCTION:** Double Braid

**FIBER:** Braided polyester cover with Dyneema® fiber core

- > Extremely low elongation
- > Lightweight
- > Wire rope replacement
- > Available with or without Samthane coating

#### AmSteel® II

Product Code: **574 (uncoated); 874 (coated)**

**CONSTRUCTION:** Double Braid

**FIBER:** Braided polyester cover with Dyneema® core

- > Abrasion resistant
- > Extremely low elongation
- > Lightweight
- > Wire rope replacement
- > Available with or without Samthane coating

#### AmSteel® Blue

Product Code: **872**

**CONSTRUCTION:** 12-Strand Single Braid

**FIBER:** Dyneema®

- > Maximum strength-to-weight ratio
- > Excellent flex-fatigue resistance
- > Highly abrasion resistant
- > Non-rotational
- > 1/7th the weight of wire
- > Same elongation as wire
- > Wire rope replacement
- > Samthane coated

#### Stable Braid

Product Code: **506 (uncoated); 806 (coated)**

**CONSTRUCTION:** Double Braid

**FIBER:** High-tenacity polyester

- > Durable
- > Abrasion resistant
- > High resistance to UV degradation
- > High heat resistance
- > Low elongation
- > Excellent flex-fatigue resistance
- > Torque-free
- > Firm flexibility
- > Available with or without Samthane coating

### Samson and Morpac Go the Distance



Tacoma Narrows transmission line, which was originally built in 1926, was a challenging project during the summer of 2007. One of the longest crossings in the world, the 6,240-foot line extends the length of the Tacoma Narrows.

When called on to provide the drum puller for threading the twin circuit estuary, Morpac Industries, Inc., sent a Morgan LH46 3-drum puller loaded with 9/16" AmSteel® Blue to do the job. "Samson rope has been used on Morgan line-stringing equipment for more than 20 years," says Pete Morgan of Morpac. "The superior strength-to-weight ratio of AmSteel® Blue makes it the ideal choice for helicopter threading of the pilot line."

Morpac also uses 9/16" Samson Tenex in their 8-part clipping blocks.

[www.samsonrope.com](http://www.samsonrope.com)



## Hand Lines

Utility structures, linemen, and Samson hand lines are a natural fit. Our hand lines stand up to rigorous bending through blocks, yet they are still easy on the hands. With excellent grip, there are no slips, which allows the user to easily lift the load. Hand lines are available in an economical 3-strand or a nonrotational 12-strand. These ropes are backed by the quality for which Samson has become known.

### Dura-Plex

Product Code: **360 (uncoated); 860 (coated)**

**CONSTRUCTION:** 12-Strand Single Braid

**FIBER:** High-tenacity polyester plied over Ultra Blue fibers

- > Abrasion resistant
- > Flexible
- > Good grip
- > Holds knots well
- > Won't hockle
- > Available with or without Samthane coating

### Quik-Spice

Product Code: **335**

**CONSTRUCTION:** 12-Strand Single Braid

**FIBER:** Ultra Blue

- > Samson's proprietary bi-polymer polyolefin fiber
- > Stronger than standard polypropylene by 30–35%
- > UV stabilized
- > Resists water
- > Excellent wet and dry abrasion resistance

### Pro-Master

Product Code: **168**

**CONSTRUCTION:** Twisted 3-Strand

**FIBER:** Spun polyester and high-tenacity filament polyester

- > High-tenacity polyester fiber
- > Balanced construction
- > Low stretch
- > Excellent knot holding
- > Retains shape with use
- > Remains flexible with use
- > Superior hand and lock-grip holding

### SSR-100-3

Product Code: **200**

**CONSTRUCTION:** Twisted 3-Strand

**FIBER:** Polyester and Ultra Blue

- > Higher strength than other combination ropes
- > More durable than polypropylene
- > More economical than polyester
- > Hockle resistant
- > Wear resistant
- > Easily spliced in the field

### ULTRA BLUE FIBER

Extruded at our Lafayette, La., plant, Samson Ultra Blue is our proprietary bi-polymer polyolefin. Ropes made with Ultra Blue are 30% to 35% higher in strength than equivalent polypropylene constructions, increasing the life of these ropes up to three times. They repel water, resist UV degradation, have excellent grip, and are abrasion resistant. These features mean buying a smaller rope without compromising strength and wear life. In the end, you save money—the best feature yet.

### Ultra Blue-3

Product Code: **130**

**CONSTRUCTION:** Twisted 3-Strand

**FIBER:** Ultra Blue

- > Samson's proprietary bi-polymer polyolefin fiber
- > 30–35% stronger than standard polypropylene
- > Wear life is triple of standard polypropylene
- > Excellent grip
- > Water repellant
- > UV resistant
- > Easily spliced in the field
- > Meets IEC dielectric property standards



## Pulling and Stringing Lines

Samson pulling and stringing lines are available in long lengths and fit any winch on any job. Not only do these lines offer low stretch and durability but they also have excellent abrasion resistance. There is a wide offering in this category from economical polyester to low-stretch, low-creep, high-performance fibers. Turn to Samson for the standard in high-end stringing lines in the utility industry.

### Tenex

Product Code: **826**

**CONSTRUCTION:** 12-Strand Single Braid

**FIBER:** High-tenacity polyester

- > High strength-to-weight ratio
- > Single end per carrier
- > Excellent holding ability
- > Abrasion resistant
- > Snag resistant
- > Economical
- > Samthane coated for added durability

### AmSteel®Blue

Product Code: **872**

**CONSTRUCTION:** 12-Strand Single Braid

**FIBER:** Dyneema®

- > Maximum strength-to-weight ratio
- > Excellent flex-fatigue resistance
- > Highly abrasion resistant
- > Non-rotational
- > 1/7th the weight of wire
- > Same elongation as wire
- > Wire rope replacement
- > Samthane coated

### AmSteel® II Plus

Product Code: **575 (uncoated); 875 (coated)**

**CONSTRUCTION:** Double Braid

**FIBER:** Braided polyester cover with Dyneema® fiber core

- > Extremely low elongation
- > Lightweight
- > Wire rope replacement
- > Available with or without Samthane coating

### Stable Braid

Product Code: **506 (uncoated); 806 (coated)**

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### AmSteel®Blue Pulls Through for Henkels & McCoy

*AmSteel®Blue has been an integral component in Henkels & McCoy heavy transmission jobs. "Dollar for dollar, pound for pound, AmSteel®Blue's high strength-to-size and -weight ratios are excellent, making it ideal for new installations and reconductor work. Most importantly, it has proven to be **DEPENDABLE** during the most difficult pulling scenarios.*

*AmSteel®Blue is our first choice when it comes to lead lines used in Henkels & McCoy pulling operations."*

*Alan Lippy, Director – T&D  
Henkels & McCoy, Inc.*



**samson**  
THE STRONGEST NAME IN ROPE



# Nylite Assemblies

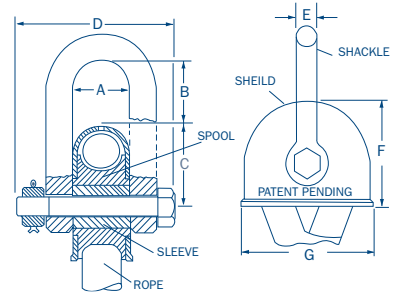
Product Code: 964

## WORKING DETAILS

- > Working loads in tons (2,000 lb).
- > Working loads, as given, are based on pin-bore relationship provided by use of Nylite Shackle. When using a nonstandard pin, the working load as given DOES NOT APPLY.
- > High-performance (HP) spools are available for use with high-performance, Class II ropes in sizes -1 through -5. HP spools are not recommended for continuous use in submerged marine environments.
- > All working load values are based on a 4:1 safety factor.
- > All stamped working load limits are shackle ratings only. Working load limits for the rope component should be considered separately.

## SPOOLS, SHIELDS, AND SHACKLE ASSEMBLY

- > Easily installed into or removed from a pre-made soft eye.
- > Nylite spool is only 1/7th the weight of steel.
- > Connectors will not deform or rupture from repeated loadings.
- > The shackle takes advantage of the high-strength Nylite connector and synthetic rope.



\*The Nylite Spool and Shield in sizes -1 through -5 may be purchased without a shackle (part # 969). Minimum order quantities apply, see net price list for details.

\*The Nylite Shackle sizes -1 through -9 may be purchased separately (part # 961).



HP aluminum spool allows size-for-size use with Class II high-performance ropes

| Size | Size Diameter      | Size Circumference | Samson Minimum Eye Size | Standard Nylite Working Load TONS | HP Nylite Working Load TONS | Standard Weight Each POUNDS | HP Aluminum Weight Each POUNDS | Shield Color |
|------|--------------------|--------------------|-------------------------|-----------------------------------|-----------------------------|-----------------------------|--------------------------------|--------------|
| -1   | 3/8 - 1/2 in.      | 1-1/8 - 1-1/2 in.  | 2-3/16 in.              | 1.1 tons                          | 2.7 tons                    | 0.5 lb                      | .53 lb                         | Blue         |
| -2   | 9/16 - 5/8 in.     | 1-3/4 - 2 in.      | 2-3/4 in.               | 1.6 tons                          | 4.8 tons                    | 1.0 lb                      | 1.06 lb                        | Red          |
| -3   | 3/4 - 13/16 in.    | 2-1/4 - 2-1/2 in.  | 3-3/4 in.               | 2.5 tons                          | 5.8 tons                    | 1.6 lb                      | 1.75 lb                        | Green        |
| -4   | 7/8 - 1-1/16 in.   | 2-3/4 - 3-1/4 in.  | 4-7/8 in.               | 4.5 tons                          | 11.5 tons                   | 3.8 lb                      | 4.11 lb                        | Orange       |
| -5   | 1-1/8 - 1-5/16 in. | 3-1/2 - 4 in.      | 6-1/8 in.               | 7.5 tons                          | 14.0 tons                   | 6.2 lb                      | 6.78 lb                        | Black        |
| -6   | 1-1/2 - 1-3/4 in.  | 4-1/2 - 5-1/2 in.  | 7-5/8 in.               | 12.5 tons                         | —                           | 19.0 lb                     | —                              | Yellow       |
| -7   | 2 - 2-1/4 in.      | 6 - 7 in.          | 9-3/4 in.               | 20.0 tons                         | —                           | 24.0 lb                     | —                              | Black        |
| -8   | 2-1/2 - 2-5/8 in.  | 7-1/2 - 8 in.      | 11-1/4 in.              | 25.0 tons                         | —                           | 38.0 lb                     | —                              | Black        |
| -9   | 2-3/4 - 3-1/4 in.  | 8-1/2 - 10 in.     | 14 in.                  | 35.0 tons                         | —                           | 64.0 lb                     | —                              | Black        |

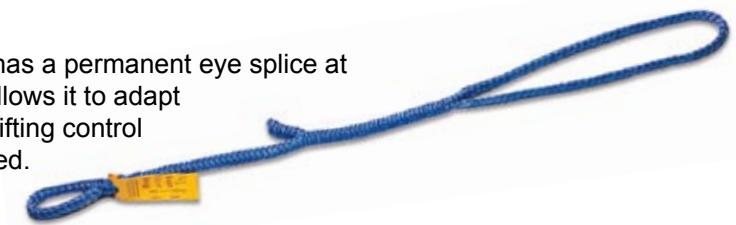
| Size | Spool Inside Diameter | Spool Outside Diameter | Pin* Diameter | A        | B        | C        | D         | E        | F         | G         |
|------|-----------------------|------------------------|---------------|----------|----------|----------|-----------|----------|-----------|-----------|
| -1   | .46 in.               | 1.50 in.               | .44 in.       | .88 in.  | 1.08 in. | 1.11 in. | 2.41 in.  | .38 in.  | 1.99 in.  | 2.34 in.  |
| -2   | .58 in.               | 1.75 in.               | .56 in.       | 1.13 in. | 1.21 in. | 1.38 in. | 3.11 in.  | .50 in.  | 2.38 in.  | 2.88 in.  |
| -3   | .64 in.               | 2.25 in.               | .63 in.       | 1.38 in. | 1.61 in. | 1.77 in. | 3.54 in.  | .56 in.  | 3.02 in.  | 3.70 in.  |
| -4   | .89 in.               | 3.00 in.               | .88 in.       | 1.75 in. | 1.9 in.  | 2.29 in. | 4.70 in.  | .75 in.  | 3.79 in.  | 4.71 in.  |
| -5   | 1.02 in.              | 3.75 in.               | 1.00 in.      | 2.13 in. | 2.15 in. | 2.85 in. | 5.55 in.  | .88 in.  | 4.85 in.  | 5.95 in.  |
| -6   | 1.54 in.              | 5.00 in.               | 1.50 in.      | 2.63 in. | 3.14 in. | 3.80 in. | 7.75 in.  | 1.37 in. | 6.30 in.  | 7.85 in.  |
| -7   | 1.75 in.              | 6.25 in.               | 1.63 in.      | 3.25 in. | 3.75 in. | 4.80 in. | 8.90 in.  | 1.50 in. | 7.93 in.  | 9.89 in.  |
| -8   | 2.00 in.              | 7.25 in.               | 1.75 in.      | 3.75 in. | 4.13 in. | 5.61 in. | 10.13 in. | 1.75 in. | 9.24 in.  | 11.47 in. |
| -9   | 2.25 in.              | 9.00 in.               | 2.00 in.      | 4.63 in. | 5.06 in. | 6.95 in. | 12.15 in. | 2.00 in. | 11.45 in. | 14.28 in. |

\*Sizes -1 through -5 are supplied with jam nuts and cotter pins. Larger sizes have cotter pins and standard nuts.

## Whoopie Sling

Adjustable, load-rated two-eye lifting slings. The sling has a permanent eye splice at one end, and an adjustable eye at the other end that allows it to adapt to loads of various sizes. The adjustment allows snug lifting control and minimizes the number of fixed length slings required. Each sling is permanently tagged with its capacity, polybagged and shipped in a carton.

- > A permanent eye splice at one end and an adjustable eye at the other.
- > Adapts to varying loads.
- > Snug lifting control.
- > Minimizes the number of fixed length slings required.
- > Three sizes to choose from.
- > Permanently tagged with capacity.



| Size INCHES | Color  | Unit Weight POUNDS | Adjustment Length FEET | Perm. Eye Size INCHES | Single Leg POUNDS | Choker POUNDS | Basket POUNDS |
|-------------|--------|--------------------|------------------------|-----------------------|-------------------|---------------|---------------|
| 1/2 in.     | Blue   | 1.20 lb            | 2.5 - 4 ft.            | 5 in.                 | 2,200 lb          | 1,760 lb      | 4,400 lb      |
| 5/8 in.     | Red    | 1.70 lb            | 3 - 5 ft.              | 6 in.                 | 3,200 lb          | 2,560 lb      | 6,400 lb      |
| 3/4 in.     | Orange | 2.80 lb            | 3.5 - 6 ft.            | 7 in.                 | 4,200 lb          | 3,380 lb      | 8,400 lb      |

\* Rated capacities are for slings in vertical lift use and spliced in accordance with Samson factory procedure.

Rated Capacities\*

### Load Angle Factor

| 0°    | 15°  | 30°  | 45°  | 60°  | 75°  |
|-------|------|------|------|------|------|
| 1.000 | .966 | .866 | .707 | .500 | .259 |

For angles other than vertical, multiply by the "Load Angle Factor" in the table shown to obtain the reduced rating based on the calculated sling lift angle.



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