



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

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." "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

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.



Nylite Assemblies

SPOOLS, SHIELDS, AND SHACKLE ASSEMBLY

- > Easily installed into or removed from a premade 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.

WORKING DETAILS

- > Working loads listed are in tons (2,000 lb).
- > Working loads, as given, are based on pin-bore relationship provided by use of the Nylite Shackle. When using a nonstandard pin, the working load as given DOES NOT APPLY.
- > The HP aluminum spool is available for use with high-performance Class II ropes in sizes -1 through -5. Aluminum spools are not recommended for continuous use in submerged marine environments.
- > All working load values are based on a 4:1 safety factor.
- > Assembly ratings are based on the use of designated spools and shackles. Spools used in conjunction with other hardware are not rated by Samson.



NYLITE SHIELDS Product Code: 969

Nylite shields are designed for use with specific rope, spool, and shackle sizes. See chart below for information.

NYLITE SPOOLS Product Code: 969



HP Aluminum Spool (sizes -1 to -5)



Nylite Spool (sizes -1 to -9)

NYLITE SHACKLES Product Code: 961



The working load limit (WLL) is stamped on each shackle.

For use with Nylite sizes -6 to -9

For use with Nylite sizes -1 to -5

CLASS I ASSEMBLY Nylite Assembly with Nylon Spool

Shackle Type	Size	Shield Color	Fits Rope Diameter		Fits Rope Circumference		Samson Minimum Eye Size INCHES	Product Code	Assembly Working Load TONS	Weight Each POUNDS	Fits Rope Diameter		Fits Rope Circumference		Samson Minimum Eye Size MM	Working Load TONS	Weight Each KG
			MIN.	MAX.	MIN.	MAX.					MIN.	MAX.	MIN.	MAX.			
Zinc Plated	-1	Blue	3/8 in.	1/2 in.	1-1/4 in.	1-1/2 in.	2-3/16 in.	964-0320	1.1 tons	0.5 lb	10 mm	13 mm	29 mm	38 mm	56 mm	1.1 tons	0.2 kg
Zinc Plated	-2	Red	9/16 in.	5/8 in.	1-3/4 in.	2 in.	2-3/4 in.	964-0400	1.6 tons	1.0 lb	14 mm	16 mm	44 mm	51 mm	70 mm	1.6 tons	0.5 kg
Zinc Plated	-3	Green	3/4 in.	13/16 in.	2-1/4 in.	2-1/2 in.	3-3/4 in.	964-0520	2.5 tons	1.6 lb	19 mm	21 mm	57 mm	64 mm	95 mm	2.5 tons	0.7 kg
Zinc Plated	-4	Orange	7/8 in.	1-1/16 in.	2-3/4 in.	3-1/4 in.	4-7/8 in.	964-0680	4.5 tons	3.8 lb	22 mm	27 mm	70 mm	83 mm	124 mm	4.5 tons	1.7 kg
Zinc Plated	-5	Black	1-1/8 in.	1-5/16 in.	3-1/2 in.	4 in.	6-1/8 in.	964-0840	7.5 tons	6.2 lb	29 mm	33 mm	89 mm	102 mm	156 mm	7.5 tons	2.8 kg
Galvanized	-6	Yellow	1-1/2 in.	1-3/4 in.	4-1/2 in.	5-1/2 in.	7-5/8 in.	964-1120	12.5 tons	19 lb	38 mm	44 mm	114 mm	140 mm	194 mm	12.5 tons	8.6 kg
Galvanized	-7	Black	2 in.	2-1/4 in.	6 in.	7 in.	9-3/4 in.	964-1440	20.0 tons	24 lb	51 mm	57 mm	152 mm	178 mm	248 mm	20.0 tons	10.9 kg
Galvanized	-8	Black	2-1/2 in.	2-5/8 in.	7-1/2 in.	8 in.	11-1/4 in.	964-1680	25.0 tons	38 lb	64 mm	67 mm	191 mm	203 mm	286 mm	25.0 tons	17.2 kg
Galvanized	-9	Black	2-3/4 in.	3 1/4 in.	8-1/2 in.	10 in.	14 in.	964-2080	35.0 tons	64 lb	70 mm	83 mm	216 mm	254 mm	356 mm	35.0 tons	29.0 kg

CLASS II ASSEMBLY Nylite Assembly with HP Aluminum Spool

Shackle Type	Size	Shield Color	Fits Rope Diameter		Fits Rope Circumference		Samson Minimum Eye Size INCHES	Product Code	Assembly Working Load TONS	Weight Each POUNDS	Fits Rope Diameter		Fits Rope Circumference		Samson Minimum Eye Size MM	Working Load TONS	Weight Each KG
			MIN.	MAX.	MIN.	MAX.					MIN.	MAX.	MIN.	MAX.			
Zinc Plated	-1	Blue	3/8 in.	1/2 in.	1-1/8 in.	1-1/2 in.	2-3/16 in.	964-0321	2.7 tons	0.53 lb	10 mm	13 mm	29 mm	38 mm	56 mm	2.7 tons	1.2 kg
Zinc Plated	-2	Red	9/16 in.	5/8 in.	1-3/4 in.	2 in.	2-3/4 in.	964-0401	4.8 tons	1.06 lb	14 mm	16 mm	44 mm	51 mm	70 mm	4.8 tons	2.3 kg
Zinc Plated	-3	Green	3/4 in.	13/16 in.	2-1/4 in.	2-1/2 in.	3-3/4 in.	964-0521	5.8 tons	1.75 lb	19 mm	21 mm	57 mm	64 mm	95 mm	5.8 tons	3.9 kg
Zinc Plated	-4	Orange	7/8 in.	1-1/16 in.	2-3/4 in.	3-1/4 in.	4-7/8 in.	964-0681	11.5 tons	4.11 lb	22 mm	27 mm	70 mm	83 mm	124 mm	11.5 tons	9.1 kg
Zinc Plated	-5	Black	1-1/8 in.	1-5/16 in.	3-1/2 in.	4 in.	6-1/8 in.	964-0841	14.0 tons	6.78 lb	29 mm	33 mm	89 mm	102 mm	156 mm	14.0 tons	14.9 kg

NEW -1 through -5 shackles are electrolytic zinc coated per ASTM B633-07 SC2 Type II specifications. Sizes -6 through -9 shackles are hot-dip galvanized per ASTM A123 specifications.

Whoopie Sling

This adjustable, load-rated two-eye lifting sling has a permanent eye splice at one end and an adjustable eye at the other end, which 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.

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.



Dyneema® is a registered trademark of Royal DSM N.V.

Dyneema® is DSM's high-performance polyethylene product.

AmSteel® is a registered trademark of Samson Rope Technologies.

© 2009 Samson Rope Technologies. All rights reserved.



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.

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.

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.

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.

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

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

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® 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®-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

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

ML-12

Product Code: **815**

CONSTRUCTION: 12-Strand Single Braid

FIBER: Dyneema® and Innegra®-S Blend

- > Light weight
- > High strength
- > Size for size, pulls heavier loads than traditional polyester lines
- > Can be downsized to store longer lengths on reels



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.

SamsonRope.com

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

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



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