

WOOD, PULP & PAPER MARKET SOLUTIONS



TPC WIRE & CABLE CORP.
EXPECT HIGH PERFORMANCE®

Wood, Pulp & Paper Market Solutions

TPC Wire & Cable Corp. is a leading supplier of high-performance wire, cable, connectors, and assemblies designed and engineered to withstand harsh industrial environments. We know how critical it is that your cables and connectors be able to survive abuse from caustic chemicals, extreme temperatures, continuous flexing, impact, and abrasion. Our products solve the most difficult application problems to outlast ordinary cable, reducing your downtime, labor, and overall costs.



LET TPC DO THE WORK.

Get your cables connectorized & ready to install.

TPC has nearly 40 years of experience building high-quality assemblies. Our knowledge combined with our state-of-the-art design and assembly center allows us to provide the high-performance assemblies you demand. From molded assemblies and military connectors to rectangular connectors and heavy-duty locking connectors, TPC's assembly products stand the test of time, saving you the hassle and expense associated with unplanned downtime.

**“We have now
installed close to
4,000 feet of this cable
while experiencing
zero failures.”**

Testimonial

Al Plybon, E&I Planner

One of the first products I made use of in the mill was TPC's 3/16 Super-Trex® Ultra-Gard® portable cable used to power LED lights on one of our roadways. Regular SO cord would always become dry rotted and crack, causing the light to become inoperable. I have not experienced this problem with the Super-Trex® cable. It was installed late 2010 and looks just as good as the day it was installed. The mill also experienced some failures with armored cable runs and so decided to give TPC's 6/4 Super-Trex® a trial run in October 2011. We have now installed close to 4,000 feet of this cable while experiencing zero failures. The cable's chemical resistance and tough jacket lends itself to longer cable life, reducing unscheduled downtime which results in better runtime and cost savings.

The electrical department recently implemented a plan to replace our current store stock THHN wire with TPC's Chem-Gard® 200°C product. Our environment consists of humidity, heat, and chemicals. The Chem-Gard® product excels in each of these environments and allows for one type of product to be used throughout the site. In the long run, this will allow us to reduce repairs, replacements, and unscheduled downtime. The mill will also install a custom cable by end of year to provide power to the high bay lighting, which has been re-worked twice since installation. TPC's molded silicone cord sets should put an end to this once and for all.

The mill currently stocks close to 55 of TPC's offerings and is completely satisfied with the products.

TPC Solves Problems In Wood, Pulp & Paper Applications

AREA	APPLICATION	TPC PRODUCTS
Utilities	Aeration Ponds	<ul style="list-style-type: none"> • Super-Trex® Type W/Type TC Portable Power & Automation Cable
	Soot Blowers	<ul style="list-style-type: none"> • Trex-Onics® Soot Blower Cable Assemblies • 16 AWG Quick-Connect™
	Turbine Operations	<ul style="list-style-type: none"> • Linear Variable Displacement Transducer (LVDT) Assemblies (cable going to sensor)
	Port Rodder Controls	<ul style="list-style-type: none"> • Chem-Gard® 200 Single Conductor Cable
	Black Liquor Guns	<ul style="list-style-type: none"> • Thermo-Trex® 2800 Cable
	Cameras	<ul style="list-style-type: none"> • Chem-Gard® 200°C CAT6 Ethernet Cable
Wood Yard	Log Cranes	<ul style="list-style-type: none"> • Super-Trex® Heavy-Duty High Flex Crane Cable • DIN Connectors • Quick-Connects™ • Trex-Onics® Flat Festoon Cable
	Stacker / Reclaimer	<ul style="list-style-type: none"> • Super-Trex® Reduced Diameter Control Cable • Super-Trex® VFD Shielded Power Cable
	Chipper / Debarker	<ul style="list-style-type: none"> • Super-Trex® and Trex-Onics® VFD Shielded Power Cable
	Chip Screen Shaker Motors	<ul style="list-style-type: none"> • Super-Trex® Triple-Gard® Yellow/Black Portable Cord
Saw Mill	Pantograph	<ul style="list-style-type: none"> • Trex-Onics® Overall Shielded Continuous Flex Multi-Conductor Cable • Trex-Onics® Individually Shielded Multi-Pair Control Cable • Super-Trex® Reduced Diameter Control Cable
	Transfer Car	<ul style="list-style-type: none"> • Super-Trex® Ultra-Gard Portable Cords (Type TC-ER Rated)
	Truck Loader	<ul style="list-style-type: none"> • Aluminum Pendant Box
Pulp Mill	Lime Kiln	<ul style="list-style-type: none"> • Chem-Gard® 200 Multi-Conductor Cable
	Digester	<ul style="list-style-type: none"> • Chem-Gard® 200 Single or Multi-Conductor Cable
	Valve Controls	<ul style="list-style-type: none"> • DIN Plugs / Quick-Connects™
Paper Machine	Hood Lighting	<ul style="list-style-type: none"> • Chem-Gard® 200 Single Conductor Cable • Thermo-Trex® 500-Plus Silicone Cable
	Head Chest	<ul style="list-style-type: none"> • Chem-Gard® 200 Multi-Conductor Cable
	Paper Break Sensor	<ul style="list-style-type: none"> • Chem-Gard® 200 Individually Shielded Pairs
	Winder	<ul style="list-style-type: none"> • Retractable Quick-Connect™
	Head Checker	<ul style="list-style-type: none"> • Trex-Onics® Overall Shielded Continuous Flex Multi-Conductor Cable
	Dryers	<ul style="list-style-type: none"> • Chem-Gard® 200 Single Conductor Cable
	Overhead Crane Controls	<ul style="list-style-type: none"> • Aluminum Pendant Box Assembly
Packaging	Wrapper	<ul style="list-style-type: none"> • Super-Trex® Multi-Conductor P&R Cable
	Conveyer	<ul style="list-style-type: none"> • Super-Trex® and Trex-Onics® VFD Shielded Power Cable
	Wrap Line Operations	<ul style="list-style-type: none"> • Industrial Ethernet Cable Assemblies – CAT6A, CAT7A
	Packaging Equipment	<ul style="list-style-type: none"> • OEM Replacement Assemblies – Trex-Onics® Servo Motor Cable, Trex-Onics® High-Flex Encoder Cable
Outage Planning	—	<ul style="list-style-type: none"> • Super-Trex® Extension Cords • Super-Trex® Welding Cable/Power Assemblies • Power-Trex® Temporary Power Solutions

Trex-Onics® Sootblower Cable



FITS LEFT & RIGHT-HAND ORIENTATIONS

- 600 Volt
- Max Conductor Temperature 105°C
- IP67 Rated
- IP68 Rated

Originally designed to meet the need for a longer-lasting OEM replacement, TPC's Trex-Onics® Sootblower Cable is equipped to survive the harsh industrial environments where boilers and furnaces are found. The cable is uniquely engineered to be light in weight and resistant to abrasion, heat, and moisture – ideal properties for the long retractable soot blower application.

FEATURES & BENEFITS

- **Ambidextrous** – Fits left and right-hand orientations, leaving only one part number to be managed and simplifying inventory control and spend
- **Molded Plugs** – Designed for ease of installation, offers a secure connection and protection against the environment
- **Light, Durable Material** – 30% lighter than the competition, creates a smaller, tighter coil and eliminates the need to align coils during installation
- **Ultra-Smooth Jacket** – Allows the cable to slide gently along the soot blower guide wire, providing a high degree of abrasion resistance
- **Insulation** – 105°C insulation and jacket material provides heat resistance
- **Construction** – Molded assembly and cable construction resists moisture
- **Options** – Also available with 2 ft. leads on both ends



Trex-Onics® Sootblower Cable mates with TPC's 12 AWG Quick-Connect™ Cord Set (IP68 Rated) to lengthen a lead and increase reach to the power source.

ORDERING INFORMATION (MINIMUM PURCHASE MAY BE REQUIRED IF PRODUCT NOT STOCKED)

PART NO.		CORD SIZE AWG/COND.	AMPACITY ¹	NOMINAL O.D. (IN)	RETRACTED TO EXTENDED COIL LENGTH (FT)
STANDARD	EXTENDED LEADS				
604416	Custom	14/4	20	0.365	2 to 16
604425	604425-24	14/4	20	0.365	2 to 25
604445	604445-24	14/4	20	0.365	3 to 45
604456	604456-24	14/4	20	0.365	4.5 to 56

NOTES: (1) NEC 2014 Table 310.15(B)(16); Ambient Temperature 30°C; not more than 3 current carrying conductors.

Paper Mill Saves \$109,000, Boosts Production by 813 Hours

PROBLEM:

One of the world’s leading makers of tissue, pulp, paper, packaging, and building products was frustrated by the need to replace soot blower cables every 2-3 days on 2 units at its flagship paper mill due to unacceptable wear and tear of the OEM product. The corrosive environment routinely destroyed the rubber jacketing of the cable. In addition, the cable was so heavy that it quickly sawed through itself due to continuous movement against the guide wire. For each instance of failure, the cost to replace the cable was \$404 in parts and labor plus 3 hours of downtime — leading to extraordinarily high and unnecessary costs, not to mention hassle, every few days.

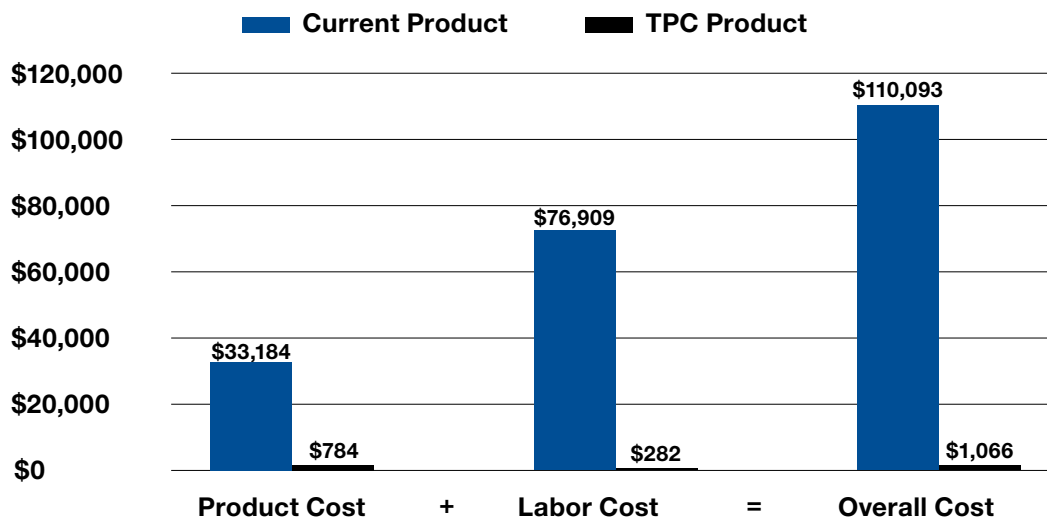
SOLUTION:

The TPC representative suggested **Trex-Onics® Sootblower Cable** for the long retractable soot blower application. Compatible with Diamond Power, Clyde Bergemann, and BEI blowers, TPC’s product is uniquely designed as a lightweight and abrasion, heat, and moisture-resistant retractile cable with an operating temperature range of -40°C to 105°C. Molded plugs offer a secure, easy-to-install connection and protect against the environment. The material is 30% lighter than the OEM cable, resulting in a smaller, tighter coil that is easier to manage and which simplifies installation. The ultra-smooth jacket resists abrasion as it slides gently along the soot blower guide wire.

RESULT:

After an 18-month period, it was confirmed by the customer that TPC’s Trex-Onics® Sootblower Cable had yet to fail, never requiring repair or replacement for an entire year and a half and counting! The customer’s total expense for the solution was \$1,066 in products and labor, which means TPC’s solution saved the customer an astonishing \$109,027 and allowed the mill to increase production by 813 hours over the course of a year and a half! An additional benefit was found with inventory control — Whereas OEM coil cords are often sold as “left-hand” or “right-hand” versions, Trex-Onics® Sootblower Cable fits either orientation, creating an ambidextrous solution that leaves just one part number to be managed. Soon after discovering these results at its primary paper mill, the company rolled out a company-wide recommendation that TPC’s product be used in all of its mills as a superior replacement for the OEM product.

CURRENT PRODUCT VS. TPC PRODUCT

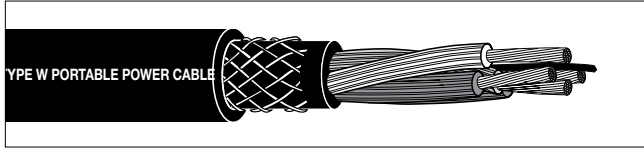


**Overall Cost Savings in 18 Months = \$109,027
and Increased Production by 813 Hours**

Super-Trex® Portable Power & Automation Cable

For submersible applications & pond aeration systems

TYPE W

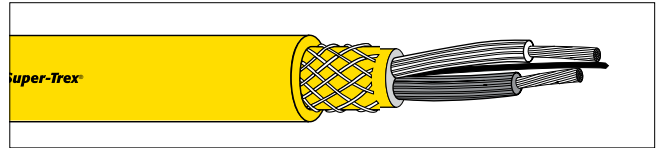


- UL Listed
- cUL Listed
- Type W – 2,000 V
- FT-5 Flame Rating
- ICEA S-75-381
- UV Resistant
- All Weather Usage
- Extra Hard Usage
- Operating Temp. Range -40°C to 90°C
- Suitable for Class I, II, III, Division 1 & 2
- IEEE 1202 Flame Rating

- **No-Wick Rayon Reinforced Synthetic Center** — Adds tensile strength, improves flexibility, won't wick up liquids, acts like a shock absorber to minimize damage from impact
- **Flexible Concentric Rope Lay Bunch Stranded Copper** — Provides longer life in reeling, flexing, and twisting applications
- **Tinned Conductors** — Resists corrosion, easier to solder
- **Live-Flex EPR Conductor Insulation** — Rated to 90°C, resists dry rot, and carries high dielectric, tensile, and mechanical properties
- **Polyester Tire Cord Reinforcing Braid** — Embedded in jacket, provides added strength and improves resistance to impact, abrasion, twisting, and pulling
- **Specially Compounded TSE Double Pass Jacket** — A superior first line of defense against tearing, abrasion, impact, oil, ozone, and most chemicals, resistant to heat and flame, offers all-weather flexibility

COLOR CODE	
#	BASE COLOR
2	Black, White
4	Black, White, Red, Green

TYPE W / TYPE TC



- UL Listed
- Type W – 2,000 V
- UV Resistant
- ICEA S-75-381
- Type TC-ER – 2,000 V
- cUL Listed (8 AWG to 2 AWG)
- Max Conductor Temperature 90°C
- Suitable for Class I, II, III, Division 1 & 2
- Extra Hard Usage

- **No-Wick Rayon Reinforced Synthetic Center** — Adds tensile strength, improves flexibility, won't wick up liquids, acts like a shock absorber to minimize damage from impact (2 conductor only)
- **Flexible Concentric Rope Lay Bunch Stranded Copper** — Provides longer life in reeling, flexing, and twisting applications
- **Live-Flex EPR Conductor Insulation** — Rated to 90°C, ribbed to prevent lining and breakage due to twisting and flexing, resists dry rot, carries high dielectric, tensile, and mechanical properties
- **Polyester Tire Cord Reinforcing Braid** — Embedded in jacket, provides added strength and improves resistance to impact, abrasion, twisting, and pulling
- **Heavy-Duty Security Yellow TSE Double Pass Jacket** — A superior first line of defense against tearing, abrasion, impact, oil, ozone, and most chemicals, resistant to heat and flame, offers all-weather flexibility

CONDUCTOR COLOR CODE	
#	BASE COLOR
2	Black, White
3	Black, Red, Green
4	Black, White, Red, Green
5	Black, White, Red, Green, Orange
6	Black, White, Red, Green, Orange, Blue

TPC Cable Outlasts Commodity Product 3:1 In Aeration Pond



PROBLEM:

One of the world's leading makers of tissue, pulp, paper, packaging, and building products was experiencing routine failure of its aeration pond cable. The customer was using commodity 4/4 power cable on the aerators and noted deterioration from continuous exposure to the chemicals in the caustic pond water and UV light. For each instance of failure, the cost to replace the cable was \$4,320 in parts and labor plus 8 hours of downtime because it's a 2-man job to change out the cable every single time.

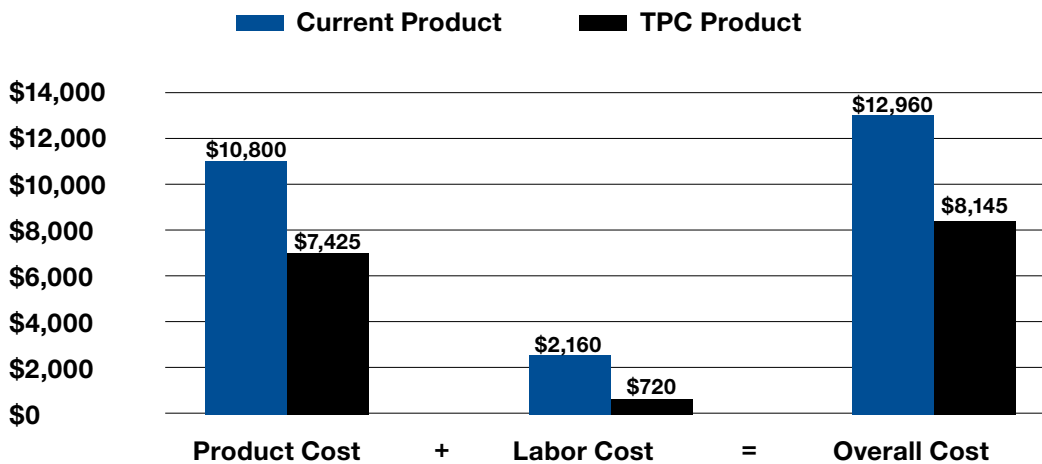
SOLUTION:

The TPC representative suggested that the customer test **4/4 Super-Trex® Type W/Type TC Portable Power & Automation Cable** in one of the pond aeration units. Rated for extra hard usage, the portable power cable offers excellent resistance to abrasion, impact, tearing, and most industrial chemicals. No-wick reinforced synthetic fillers won't wick up liquids, act like a shock absorber when impacted, and a tensile strength. Live-flex ribbed EPR rated 90°C prevents kinking and breakage in twisting and flexing applications, and resists dry rot. The heavy-duty security yellow TSE jacket provides a superior first line defense against abuse from oil, chemicals, ozone, tearing, abrasion, heat, and flame while providing all-weather flexibility.

RESULT:

TPC's 4/4 Super-Trex® Type W/Type TC Portable Power & Automation Cable lasted three times longer than the previous cable, saving the customer \$4,815 in materials and labor and gaining back 16 hours in production time. Imagine the savings and benefits when applied to multiple units!

CURRENT PRODUCT VS. TPC PRODUCT



**Overall Cost Savings in 12 Months = \$4,815
and Increased Production by 16 Hours**

Designed for Abuse



- **Super-Trex®:** A very rugged line of cables which includes single-conductor medium voltage cables up to 35kV and multi-conductor configurations ranging from 600 volts to 2000 volts. These products are designed primarily for power and control applications where cables may be exposed to tension, reeling, flexing, cutting, abrasion, impact and heat.
- **Trex-Onics®:** Designed for constant flexing applications such as cable carriers and robotics, this product line is designed to provide a high level of resistance to abrasion and cutting. Trex-Onics products include power cables and shielded multi-conductor cables for instrumentation, control and communications.
- **Chem-Gard®:** Designed for a broad range of applications where heat, cold or extreme chemical exposure can affect cable performance. Chem-Gard uses a fluoropolymer insulation and jacket that gives the cable a temperature performance range from -60°C to +200°C. The fluoropolymer jacket also allows the cable to survive in very acidic, alkali or solvent based environments. Chem-Gard's unique design makes it an excellent choice for flexing and high cycling applications.
- **Thermo-Trex®:** High temperature cables and accessories designed for temperatures ranging from 400°F up to an extreme of 3000°F. This line includes power and control cables as well as thermocouple extension wires.
- **Quick-Connects™:** Line of cord sets and cable assemblies designed for applications that require tough, sealed connectors that are able to operate in industrial environments. Available as minis, micros, nano, and more, Quick-Connects make replacement of electrical and electronic control devices quick and simple. Accessories include adapters, shorting plugs, three-way receptacles, and custom items.
- **Thermo-Trex® 500-Plus 12 AWG / 16 AWG Mini Quick-Connect™:** Designed with a tear-resistant silicone jacket. It is an ideal choice for applications exposed to moisture, chemicals, temperatures up to 180°C, UV light and mechanical abuse. Ideal for motors and hood lighting applications.

Plan On A Successful Shutdown

While TPC provides solutions to help reduce the unplanned downtime that negatively impacts your productivity and adds unexpected costs, we're also prepared to serve your *planned* outage needs — the anticipated maintenance work or implementation of innovation that leads to desired benefits such as increased productivity, energy efficiencies, and expense management. From capital projects to everyday maintenance, you can plan on a successful shutdown with TPC.



- Portable Cords
- Welding Assemblies
- Molded Extension Cords
- Temporary Power Products



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TPC WIRE & CABLE CORP. HEADQUARTERS 9600 VALLEY VIEW RD, MACEDONIA, OHIO 44056
USA 800-521-7935 • FAX 866-528-2930 • CANADA 800-545-0122 • MEXICO 001-877-283-1696
CHILE 1230-020-0229 • COLOMBIA 0-1-800-915-7519 • PERU 0800-54863 • WWW.TPCWIRE.COM

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