

MARKET SOLUTIONS



# STEEL MARKET SOLUTIONS



TPC WIRE & CABLE

## Steel Market Solutions

TPC Wire & Cable is a leading supplier of high-quality, 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 impact, abrasion, flexing, extreme temperatures, and chemicals. In the metals industry, our broad line of rugged power, chemical-resistant, and temperature-resistant cable products can be found in scrap yards, melt shops, pot lines, casters, mills, foundries, and just about every other layer in the process.

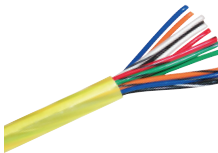
### Designed to Withstand Abuse in the Steel Industry



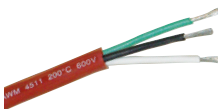
- **Super-Trex®:** Designed to withstand high heat and provide excellent protection in harsh applications. These high quality cables are designed with our proprietary Super-Trex TSE jacket to protect the conductors from chemicals, abrasion, oils, impact, ozone, tearing, flame and heat. The insulation system resists oils, coolants, acids and chemicals.



- **Trex-Onics®:** Designed for constant flexing applications such as cable carriers and festoons, 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 power or control 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 and sleeving options.



- **Quick-Connex™:** 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, nanos, and more, Quick-Connex make replacement of electrical and electronic control devices quick and simple. Accessories include adapters, shorting plugs, three-way receptacles, and custom items.



## 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.

# TPC provides solutions for the Steel Industry

**Read our case study below to learn how other steel companies saved material, labor, and downtime by switching to a TPC product!**

## Problem

A manufacturer of engineered steel bars was replacing furnace cable every single week for all 6 units in its melt shop. Cable was routinely failing due to high temperatures associated with the environment, molten steel dropping onto the jacket (which also becomes abrasive once hardened), and cuts from being dragged around and run over. For each weekly failure, the cost to replace cable totaled \$418 in parts and labor, which added up quickly over time – not to mention the hours in downtime.

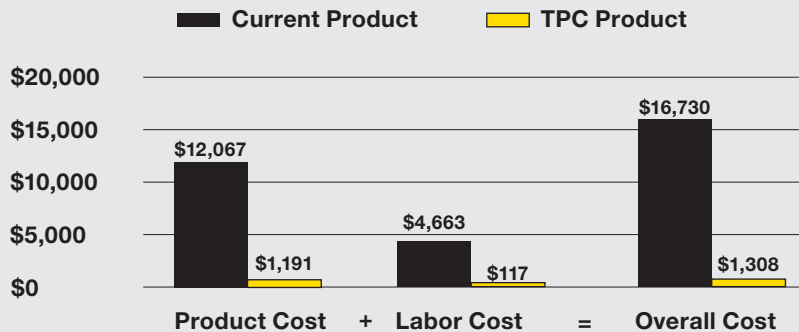
## Solution

The TPC field sales representative suggested **Thermo-Trex® 500K Cable with Stainless Steel Overbraid**. Flexibility is achieved by using finely-stranded, tinned copper conductors and a specially woven aramid-braid jacket impregnated with heat and moisture-resistant finishing compounds. High heat resistance allows the cable to withstand continuous temperatures up to 392°F and flash heat up to 775°F. The aramid fiber braid jacket adds tensile strength and added protection against abrasion.

## Result

After 10 months in use, the customer was excited to share that TPC's product was holding up well against the environment. The total cost in product and labor for TPC's solution was just \$1,307 compared to the \$16,730 the customer would've spent replacing the commodity product 40 times during that same timeframe — a \$15,422 savings! Plus, the customer was able to avoid downtime.

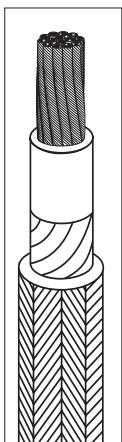
### CURRENT PRODUCT VS. TPC PRODUCT



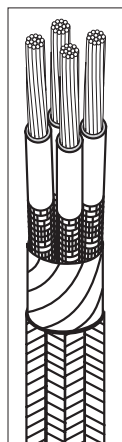
**Overall Cost Savings in 10 Months = \$15,422**

Source: TPC Cost Value Analysis Report #3382

## Thermo-Trex® 500-K Single & Multi-Conductor Cables



**SINGLE COND.**



**MULTI COND.**

- UL Recognized (single-conductor only)
- 600 V
- RoHS Compliant
- Continuous Temperatures up to 392°F (200°C)
- Flash Heat up to 775°F (413°C)

Thermo-Trex® 500-K Single Conductor is a high-temperature resistant cable for power and control applications that can withstand a maximum conductor temperature of 200°C / 392°F. This single conductor power, control, and instrumentation cable features stranded, tinned copper conductors and a specially woven aramid fiber braid jacket impregnated with heat and moisture-resistant finishing compounds, providing tensile strength and added protection against abrasion.

- **CONDUCTORS** — Flexible tinned copper strands improve flexibility
- **INSULATION** — Silicone rubber provides resistance to heat, moisture, and chemicals
- **JACKET** — Heat and moisture-resistant Aramid fiber braid jacket protects against abrasion.
- **TFE WRAP** — Improves performance in flexing applications and provides an additional thermal barrier to extend product life in extreme temperature environments.
- **STAINLESS STEEL OVERBRAID** — Optional



## TPC Products Solve Problems in Steel Applications

AREA	APPLICATIONS	TPC PRODUCTS
<b>Scrap Yard</b>	<b>Magnet Crane, Ladle, Vehicle Harnesses, Transfer Cars</b>	<ul style="list-style-type: none"> <li>• Oval Quick-Connex™ Power Assembly</li> <li>• Trex-Onics® Flat Festoon Cable</li> <li>• Super-Trex® Portable Cord</li> <li>• Super-Trex® Power Cables</li> <li>• Super-Trex® Multi-Conductor P&amp;R Cable</li> <li>• Trex-Onics® Reduced Diameter Extra Heavy-Duty Reeling Cable</li> <li>• Vulko-Wrap®</li> <li>• Capability – Stainless Steel Overbraiding</li> </ul>
<b>Integrated Steel / Melt Shop</b>	<b>Power Tracks, Cranes, Welding Lead Stingers</b>	<ul style="list-style-type: none"> <li>• Super-Trex® Welding Cable</li> <li>• Quick-Connex™</li> </ul>
	<b>Coke Ovens, Coke Pusher Guide Rack, Hood Hoists, Quench Pans, Charging Cars, Motorized Valves, Sensors, Thermocouple</b>	<ul style="list-style-type: none"> <li>• Super-Trex® Portable Cord</li> <li>• Super-Trex® 4/0 Power Cable</li> <li>• Super-Trex® Multi-Conductor P&amp;R Cable</li> <li>• Vulko-Wrap®</li> <li>• Cable Carriers</li> <li>• Chem-Gard® 200°C CAT6 Ethernet Cable</li> <li>• Thermo-Trex® Thermocouple Extension Wire</li> <li>• Chem-Gard® 200°C Individually Shielded Pairs</li> <li>• Quick-Connex™ and Cable Assemblies</li> <li>• Thermo-Trex® 500-Plus 12AWG Cordsets</li> <li>• Aluminum Pendants</li> <li>• Super-Trex® Welding Cable</li> <li>• Reel Rack</li> <li>• Thermo-Trex® High Temperature Sleeving</li> <li>• Thermo-Trex® High Temperature Silica Tape</li> </ul>
<b>Blast Furnace</b>	<b>Cranes, Transfer Cars, Reel Systems, Fluid Power Controllers, Mag Ladles, Pendant Control, Trippers, Thermocouple</b>	<ul style="list-style-type: none"> <li>• Super-Trex® Multi-Conductor P&amp;R Cable</li> <li>• Trex-Onics® High-Flex Ultra-Coil Retractable</li> <li>• Thermo-Trex® Cables</li> <li>• Trex-Onics® Control Cables</li> <li>• Super-Trex® Reduced Diameter Control Cable</li> <li>• Super-Trex® Power Cables</li> <li>• Thermo-Trex® Thermocouple Extension Wire</li> <li>• Thermo-Trex® 500-Plus Cordsets &amp; Quick-Connex™</li> <li>• Aluminum Pendants</li> <li>• Vision Cable Assembly</li> <li>• Thermo-Trex® High Temperature Silica Tape</li> </ul>
	<b>Port Welders</b>	<ul style="list-style-type: none"> <li>• Super-Trex® Welding Cable</li> </ul>
	<b>Switches</b>	<ul style="list-style-type: none"> <li>• Mini &amp; Micro Quick-Connex™</li> </ul>

## TPC Products Solve Problems in Steel Applications (continued)

AREA	APPLICATIONS	TPC PRODUCTS
<b>Blast Furnace</b> (continued)	<b>Mud Guns</b>	<ul style="list-style-type: none"> <li>• Thermo-Trex® 2800 Cable</li> <li>• Thermo-Trex® 850 Cable</li> <li>• Thermo-Trex® 500-K Single &amp; Multi-Conductor</li> <li>• Thermo-Trex® Soaking Pit Cable</li> </ul>
	<b>Bottle Car Motor</b>	<ul style="list-style-type: none"> <li>• Super-Trex® Portable Power &amp; Automation Cable</li> <li>• Super-Trex® Type W - RHH/RHW-2 Single Conductor Power Cable</li> <li>• Super-Trex® Multi-Conductor P&amp;R Cable</li> <li>• Super-Trex®, Thermo-Trex®, &amp; Trex-Onics® VFD Cables</li> <li>• Vulko-Wrap®</li> </ul>
	<b>Mixing or Stockhouse Tower, Rail Mounted Conveyor Motors, Lighting</b>	<ul style="list-style-type: none"> <li>• Cable Carriers</li> <li>• Super-Trex®, Thermo-Trex®, &amp; Trex-Onics® VFD Cables</li> <li>• Reel Rack</li> <li>• Thermo-Trex® 500-Plus Cordsets &amp; Quick-Connex™</li> </ul>
<b>Electric Arc Furnace</b>	<b>Furnace, Forge &amp; Finishing, Motor Drives, Torque Car Power, Tap &amp; Cast, RTD</b>	<ul style="list-style-type: none"> <li>• Shielded Quick-Connex™</li> <li>• Thermo-Trex® 2800, 2000</li> <li>• Super-Trex® Power Cables</li> <li>• Chem-Gard® 200°C</li> <li>• Super-Trex®, Thermo-Trex®, &amp; Trex-Onics® VFD Cables</li> <li>• Thermo-Trex® Soaking Pit Cable</li> </ul>
<b>BOP = Basic Oxygen Process</b>  <b>OR</b> <b>BOF = Basic Oxygen Furnace</b>	<b>Transfer Car, Slag Pot Car</b>	<ul style="list-style-type: none"> <li>• Super-Trex® 4 Conductor Aramid Reinforced Orange Portable Power Reeling Cable</li> <li>• Custom Cable Designs</li> <li>• Capability – Stainless Steel Overbraiding</li> </ul>
	<b>Precipitator &amp; Bag House</b>	<ul style="list-style-type: none"> <li>• Quick-Connex™</li> </ul>
	<b>Magnet Crane</b>	<ul style="list-style-type: none"> <li>• Oval Quick-Connex™ Power Assembly</li> <li>• Super-Trex® Power Cable</li> <li>• Pendants</li> </ul>
	<b>Charge Crane</b>	<ul style="list-style-type: none"> <li>• Super-Trex® Reduced Diameter Control Cable</li> <li>• Super-Trex® Multi-Conductor P&amp;R Cable</li> <li>• Super-Trex®, Thermo-Trex®, &amp; Trex-Onics® VFD Cables</li> <li>• Cable Carrier</li> </ul>
	<b>Power Along</b>	<ul style="list-style-type: none"> <li>• Thermo-Trex® Soaking Pit Cable</li> </ul>
	<b>Furnace / Ladle Cars</b>	<ul style="list-style-type: none"> <li>• Thermo-Trex® 2000, 850, 200-HD</li> <li>• Capability – Stainless Steel Overbraiding</li> <li>• Thermo-Trex® 500-Plus 12AWG Cordset</li> <li>• Thermo-Trex® Thermocouple Extension Wire</li> </ul>
	<b>Refractory Area</b>	<ul style="list-style-type: none"> <li>• Super-Trex® Welding Cable &amp; Welding Assemblies</li> <li>• Super-Trex® Portable Cord</li> <li>• Thermo-Trex® 500-Plus 12AWG Cordset</li> </ul>
	<b>Table Welders</b>	<ul style="list-style-type: none"> <li>• Super-Trex® Welding Cable</li> </ul>

## TPC Products Solve Problems in Steel Applications (continued)

AREA	APPLICATIONS	TPC PRODUCTS
<b>Ladle</b>	<b>Ladle Car Power, Welders, Furnace Power, Pendants, Feed Power, Energy Chain Cable Carriers</b>	<ul style="list-style-type: none"> <li>• Trex-Onics® High-Flex Ultra-Coil Retractiles</li> <li>• Super-Trex® Reduced Diameter Control Cable</li> <li>• Thermo-Trex® 500-K Cables</li> <li>• Super-Trex® Type W/Type TC Portable Power &amp; Automation Cable</li> <li>• Thermo-Trex® High Temperature Sleeving</li> <li>• Super-Trex® Welding Cable</li> <li>• Thermo-Trex® 200-HD Cable</li> <li>• Capability – Stainless Steel Overbraiding</li> </ul>
<b>Caster</b>	<b>Cranes, Cable Carriers, Tables, Welding Units, Motor Drives, Torch Burners, Motor Leads, Sensors, MOV, Slab Torch</b>	<ul style="list-style-type: none"> <li>• Super-Trex® Portable Cord</li> <li>• Super-Trex® Reduced Diameter Control Cable</li> <li>• Super-Trex® Multi-Conductor P&amp;R Cable</li> <li>• Stainless Steel Quick-Connex™</li> <li>• Trex-Onics® Individually Shielded Multi-Pair Control Cable</li> <li>• Chem-Gard® 200°C Individually Shielded Pairs</li> <li>• Super-Trex® Portable Power &amp; Automation Cable</li> <li>• Thermo-Trex® High Temperature Silica Tape</li> <li>• Super-Trex® Welding Cable</li> <li>• Super-Trex®, Thermo-Trex®, &amp; Trex-Onics® VFD Cables</li> <li>• 7 Pin Molded Valve Plugs</li> <li>• Aluminum Pendants</li> <li>• DIN Assemblies and Quick-Connex™</li> <li>• Thermo-Trex® High Temperature Sleeving</li> </ul>
	<b>Load Cell</b>	<ul style="list-style-type: none"> <li>• Chem-Gard® 200 Multi &amp; Single Conductor Cable</li> <li>• Chem-Gard® 200 Individually Shielded Pairs</li> </ul>
<b>Crane</b>	<b>Power &amp; Control</b>	<ul style="list-style-type: none"> <li>• Super-Trex® Reduced Diameter Control Cable</li> <li>• Super-Trex® Multi-Conductor P&amp;R Cable</li> <li>• Super-Trex® Portable Power &amp; Automation Cable</li> <li>• Mini &amp; Micro Quick-Connex™</li> <li>• Thermo-Trex® High Temperature Flat Festoon Cable</li> </ul>
<b>Hot Mill</b>	<b>Heat Treat, Cranes, Heat Controls, Pendant Control, Turtle Burners, Cable Protection, Extension Cord, Thermocouple</b>	<ul style="list-style-type: none"> <li>• Thermo-Trex® 2000</li> <li>• Thermo-Trex® Thermocouple Extension Wire</li> <li>• Thermo-Trex® High Temperature Sleeving</li> <li>• Trex-Onics® High-Flex Ultra-Coil Retractiles</li> <li>• Chem-Gard® 200°C Individually Shielded Pairs</li> <li>• Super-Trex® Multi-Conductor P&amp;R Cable</li> <li>• Super-Trex® Power Cables</li> <li>• Super-Trex® Portable Cord</li> <li>• Stainless Steel Thermo-Trex &amp; Quick-Connex™</li> <li>• 7 Pin Molded Valve Plug</li> </ul>

## TPC Products Solve Problems in Steel Applications (continued)

AREA	APPLICATIONS	TPC PRODUCTS
<b>Steel Production</b>	<b>Crane Controls, Battery Chargers, Emergency Power, Cranes, Lathes, Cameras, Hot Strip, Descale, Pickling, Soaking Pits, Slab Cutting, Storage and Logistics</b>	<ul style="list-style-type: none"> <li>• Chem-Gard® 200°C CAT6 Ethernet Cable</li> <li>• Thermo-Trex® 500-Plus 12AWG Cordset</li> <li>• Super-Trex® Reduced Diameter Control Cable</li> <li>• Trex-Onics® Overall Shielded Continuous Flex Multi-Conductor Cable</li> <li>• Super-Trex® Power Cables</li> <li>• Chem-Gard® 200°C Individually Shielded Pairs</li> <li>• Quick-Connex™</li> <li>• Super-Trex® Multi-Conductor P&amp;R Cable</li> <li>• Thermo-Trex® Soaking Pit Cable</li> <li>• Chem-Gard® 200 Multi &amp; Single Conductor Cable</li> <li>• Power-Trex® Temporary &amp; Emergency Power Solutions</li> <li>• Oval Quick-Connex™ Power Assembly</li> <li>• Reel Rack</li> <li>• Vision Cable Assembly</li> <li>• Super-Trex®, Thermo-Trex®, &amp; Trex-Onics® VFD Cables</li> </ul>
<b>Cold Mill</b>	<b>Motor Leads, Miscellaneous</b>	<ul style="list-style-type: none"> <li>• Quick-Connex™</li> <li>• Super-Trex® Portable Cord</li> <li>• Thermo-Trex® 500-Plus 12AWG Cordset</li> <li>• Super-Trex®, Thermo-Trex®, &amp; Trex-Onics® VFD Cables</li> <li>• Stainless Steel Kord-Gards® &amp; Grip-Seals®</li> </ul>
<b>Finishing Mill</b>	<b>Tinning, Galvanizing, Annealing, Cold Rolling</b>	<ul style="list-style-type: none"> <li>• Aluminum Pendants</li> <li>• Cable Carriers</li> <li>• Thermo-Trex® 500-Plus 12AWG Cordset</li> <li>• DIN Assemblies and Quick-Connex™</li> <li>• Vision Cable Assemblies</li> <li>• Super-Trex®, Thermo-Trex®, &amp; Trex-Onics® VFD Cables</li> </ul>
<b>Foundry</b>	<b>Disa Sand, Mold Machine</b>	<ul style="list-style-type: none"> <li>• Chem-Gard® 200 Cable</li> </ul>
<b>Foundry Data Highway</b>	<b>Crane</b>	<ul style="list-style-type: none"> <li>• Trex-Onics® Overall Shielded Continuous Flex Multi-Conductor Cable</li> <li>• Super-Trex® Multi-Conductor P&amp;R Cable</li> </ul>
	<b>Control Systems</b>	<ul style="list-style-type: none"> <li>• Aluminum Pendants</li> <li>• Chem-Gard® 200°C Individually Shielded Pairs</li> <li>• Super-Trex® Reduced Diameter Control Cable</li> <li>• Chem-Gard® 200°C CAT6 Ethernet Cable</li> </ul>
	<b>Camera Monitoring, Communications</b>	<ul style="list-style-type: none"> <li>• Chem-Gard® 200°C CAT6 Ethernet Cable</li> <li>• Trex-Onics® Profibus</li> </ul>



## Custom Designed to Meet Your Needs

TPC Wire & Cable offers custom-engineered products that are designed using specific application and environmental information supplied by the customer. These product solutions represent a unique and valuable service offered by TPC, whose engineers are experienced in the electrical, mechanical, and industrial engineering disciplines. There is no job that our team can't tackle. Our engineering team is ready to design a custom solution for you!

## Testimonial

**Steve Uhlir, Operations Manager**  
Classic Diagnostic Imaging

"I was looking for a durable cable that was flexible enough to make tight turns in a confined area and not stress the cable shield. I found it at TPC.

Not only that, I was informed that because it was custom I could orient each wire in the cable to sit next to the one I wanted it to; making a neater pony tail and, in the end, taking up less room in the junction box. Then, I was told I could put whatever I wanted on the exterior of the shield – TPC gave me the idea to put our name and phone number on the cable jacket for future customers.

I worked with Tim (TPC Custom Cable Engineer) and he designed a cable that is more flexible and able to move freely within the constraints of the imaging machines our company refurbishes. Since we're local, Rick (TPC Sales Rep) put the reel in his car and dropped it off! I couldn't be happier with the service and results...It is a dream to work with this cable. I cannot believe how flexible the cable is! It is a joy not to fight this cable and force it to hold down with zip ties. It really does what you say it does.

The other thing I love about the cable is the orientation of the individual wires within the shield. It makes it so much easier, not to mention neater, to assign the wires to the designated place. Our phone number on the cable looks really cool, too. We have finished our third refurb with the new wire and I really love it."



**It is a dream  
to work with  
this cable.**

**I cannot  
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flexible the  
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**TPC WIRE & CABLE**  
A Trexon Company

**TPC WIRE & CABLE, A TREXON COMPANY**

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