



CASE STUDY: MOTF STEEL



**TOTAL SAVINGS IN
MATERIAL & LABOR = \$15,422**

**TPC Product(s) Used:
Thermo-Trex® 500K Cable with
Stainless Steel Overbraid**

Source: TPC Total Cost of Ownership Report 3382



Steel Bars Manufacturer Installs High-Heat Cable, Saves \$15,422.

Customer Problem:

Operating since 1901, this steel bar manufacturer specializes in transforming steel scrap and iron ore into steel products across many industries. The melt shop in their mill is responsible for melting scrap charge into liquid steel. This process takes place in a furnace that operates with a shared set of electrical equipment that operates at up to 850 volts and 135,000 amps. In turn, the inside of an industrial arc furnace can get up to 3,272 °F (1,800 °C). Due to the high intensity heat, the customer was replacing their existing power cables on each operating furnace every single week! The cable was subject to high temperatures, a large amount of molten steel dropping onto the jacket, and cuts in the outside of the jacket from being dragged around. This environment required weekly cable replacements across six units. Over a 10 month period, the cable was replaced 40 times, which resulted in more than \$16,000 in associated labor and material costs – not including the expense of unexpected downtime.





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TPC Solution:

The extreme heat and exposure to impact and abrasion were all contributing factors to the constant cable replacements. TPC's recommendation for the steel manufacturer was Thermo-Trex® 500-K Multi-Conductor Cable because of the product family's great ability to withstand high-heat applications. On the outside, the jacket is comprised of a heat- and moisture-resistant Aramid fiber braid jacket that gives extra protection against abrasion. On the inside, a silicone rubber insulation gives an added layer of resistance to heat, moisture, and chemicals that might cause ordinary cable to fail prematurely under this plant's sweltering conditions. For applications with extreme temperatures present, the Thermo-Trex cable has a TFE wrap that serves two purposes; one, it provides a thermal barrier to extend product life, and two, it improves performance where flexing is present.

Customer Result:

To keep orders on-time, this steel manufacturer needed a longer-lasting product to help prevent unexpected faults, minimize downtime, and maximize productivity to stay ahead of the competition by continuing to deliver quality products on a tight deadline. After all, routinely replacing cable once a week is costly when the result is unplanned maintenance. Once the customer installed TPC's product across all six of their units. The result was that over a period of 10 months, TPC's product only required one replacement, whereas the previously used product was being replaced 40 times during the same timeframe. For an initial investment of \$1,307, this customer saved more than \$15,000 in less than a year and allowed for a more reliable operation.

