TENDUR ULTRA ANTI-ABRASION HIGH-VOLTAGE CONTACT PLATING

FOR LIFETIME HIGH-PERFORMANCE EV CHARGING

The Demands of Next Generation Drivers

It is often said that the next generation of mobility – offering safer, greener more connected means of transport – will be characterized by vehicles running on two types of fuel: electricity and data. However, while safety, convenience, and the desire for ubiquitous connectivity are driving an increasing number of data-centric, cloud-based vehicles, many consumers, despite their environmental concerns, are still reluctant to fully embrace electro-mobility.

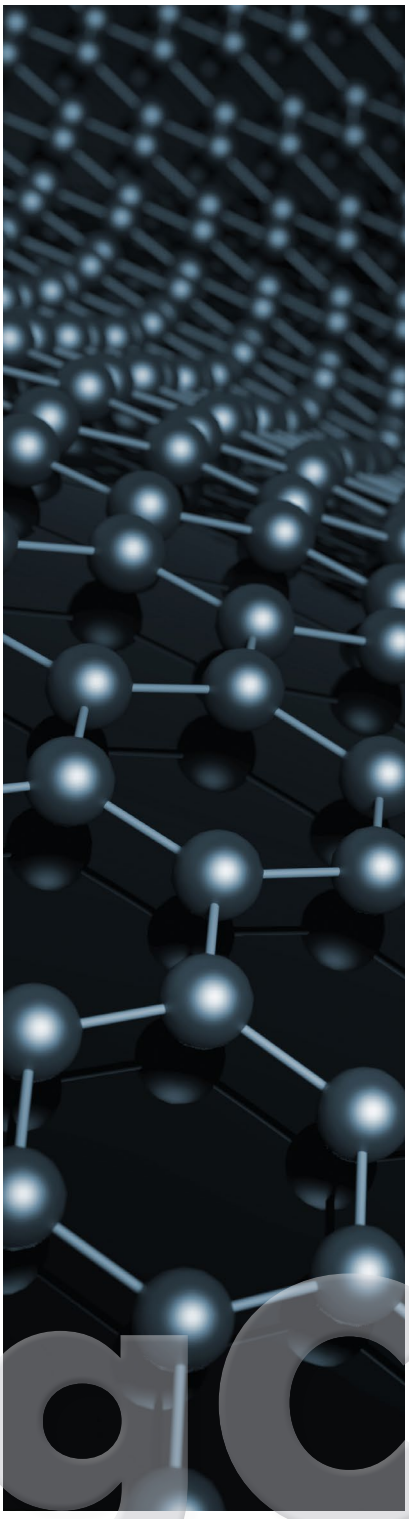
Charging Performance – The Role of Connectivity

Charging, and in particular, charging time and the availability of charging points, is still a major concern for many potential electric vehicle (EV) drivers. In this regard, connectivity technology can play a vital role in delivering the safe and reliable high-power 10 minute / 300 km charging that would help allay consumer concerns. This starts at the charging inlet.

High-power charging (HPC) involves DC power at currents of 500 amps and beyond. These high current levels can generate heat that can exceed safety thresholds, causing the charging apparatus to reduce the rate of electricity transfer to the car. Managing these extreme temperatures minimizes the impact on electrical conductivity and charging performance.

Additionally, wear and tear can occur between a charging station's equipment and the vehicle itself. Public charging plugs can be damaged by abuse or exposed to abrasives such as dirt or salt. This damage can be transferred to the vehicle's charging inlet.

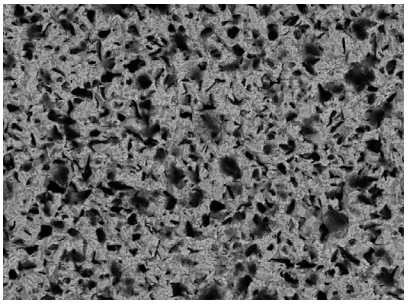
One of the best ways to mitigate damage to charging inlets and reduce the occurrence of extreme heat during high-powered charging sessions is to consider the quality of the inlet's contact surface plating. Having the right surface technology is critical to maintaining high charging performance for the lifetime of the vehicle.



TENDUR Surface Plating Protects the Car's Charging Inlet

TENDUR is TE Connectivity's (TE) new surface plating developed to provide abrasion resistance, resulting in continuous high-performance charging capability throughout the vehicle's lifetime.

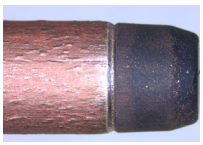
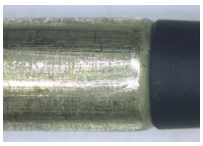
TENDUR plating combines the electrical conductivity of silver with the self-lubricating advantages of graphite particles. The graphite minimizes abrasion on any part of the contact zone, during mating, to negligible levels. In addition, TENDUR contact plating retains all the electrical performance properties of alternative silver elements, such as silver-copper, silver palladium, or silver antimony.



TENDUR surface plating comprises particles of graphite (C) surrounded by silver (Ag).

Lifetime Charging Performance Assurance

Traditionally, plating technologies for charging inlets are rated to withstand up to 10,000 mating cycles. However, TENDUR plating has been tested to withstand 50,00 0mating cycles with virtually no contact zone wear, thereby providing a greater degree of electrical stability for a longer period of time.

Material	Terminal	Result
Standard Silver (Ag)		Total abrasion of Ag after 2,000 cycles
Silver Graphite (AgC) TENDUR Surface Plating		Minimal abrasion of AgC after 50,000 cycles

The application of TENDUR surface plating to charging inlet contacts helps confirm that abrasion will not be a factor leading to current de-rating during high-power charging sessions. By contrast, lower quality surface technologies could eventually lead to abrasion damage that could have an adverse affect on charging performance.

To find out more about TE Connectivity's TENDUR plating solutions, please contact the Product Information Center (PIC): Phone +800 0440-5100.

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