



Case Study:

Permanent Conductivity for Safer Fueling Systems

Background

OPW, a global leader in fuel piping systems for gas stations, needed to ensure **long-term safety and static-free operation** in multilayer fuel pipelines. Eliminating electrostatic build-up is critical to preventing sparks that could lead to fires or explosions.

Challenge / Need

To meet **ATEX (EU), UL (US), and GB (China)** explosion-proof requirements, OPW required a **conductive interlayer** for its five-layer pipe that offered:

- **Interlayer compatibility** for strong adhesion within the multilayer structure
- **Processing stability:** precise melt-flow, thermo-oxidative stability, and controlled crystallization and shrinkage rates during co-extrusion
- **Functional reliability:** stable, permanent surface conductivity over years of service in harsh outdoor environments

Solution

Premix provided **PRE-ELEC® TP 11820**, a high-density polyethylene (HDPE) compound engineered with **special conductive carbon black** to deliver:

- **Low surface resistivity** ($<10^4 \Omega/\text{sq}$) ensuring permanent static-dissipative properties
- **Excellent mechanical properties** for strength and durability
- **Outstanding processability**—ideal melt-flow index and thermal stability for multilayer pipe co-extrusion and welding
- **Certified compliance** with ATEX, UL, and GB safety standards
- **This material forms the critical fourth layer** of OPW's five-layer fuel pipe, providing a continuous conductive path to safely dissipate static electricity.



Results / Benefits

- **Enhanced Safety** – Permanent conductivity protects against static discharge, reducing fire and explosion risk.
- **Proven Reliability** – Years of successful global field use with stable ESD performance.
- **Competitive Advantage** – ATEX/UL/GB certifications and stable quality give OPW a strong position in project bids.

Get in touch with us

Whether you have questions about our wide range of plastic compounds and materials or need assistance, our team is here to help.

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