



Where Ideas Take Shape.

Case Study

Improving Safety on the 6th Most Dangerous Road in the World

Challenge:

Engineer a roadside delineator post that improves visibility and safety while reducing maintenance along one of the most remote and dangerous roadways in the world.

Solution:

Leverage extrusion expertise to deliver a custom-engineered post that is able to withstand extreme cold, snow and ice and rebound when struck.

The cantilever structure consists of an extruded profile mounted to a highly-reflective arm with a special, flexible coupler.

Innovative Thinking:

Customized, extrusion-based roadside delineator posts from Pexco are improving visibility for Alaska's "ice road" truckers. This reflective marker provides safety and reduces maintenance on one of the most challenging roadways in the world and demonstrates Pexco's range of capabilities, design and manufacturing expertise within traffic safety and profile plastic extrusion.

Truck driver safety is a serious concern on the Dalton Highway, a 414-mile road in Alaska, the 6th most dangerous highway in the world. Half of all vehicle crashes on Dalton occur during daylight hours, while fully a quarter of the crashes occur at night along unlighted sections of the road. Frequent inclement weather with blowing snow and whiteout conditions necessitate marking the road shoulders to ensure safe navigation of this important lifeline for Alaska's North Slope.

In the spring of 2009, Pexco was asked for assistance designing and upgrading a delineator post to improve safety on the Dalton Highway. Pexco's custom-made solution was named the "Dalton Delineator," a cantilever structure consisting of an extruded, cut-to-length roadside delineator profile mounted to a second extrusion – a special, flexible coupler.



The "Dalton Delineator" consists of an extruded roadside delineator profile mounted to a second extrusion – a special, flexible coupler.



When installed, the delineator post or "arm," projects horizontally from the shoulder, above the roadway, and is capable of rebounding when struck. The delineator also provides excellent reflectivity at night.



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The Pexco Traffic and Safety division engineering team applied its knowledge of plastic and process extrusion to further enhance the unique design by delivering resilient performance properties. The innovative coupler attaches to a square, steel tube support that is situated off of the traveled roadway. When installed, the delineator post or “arm,” projects horizontally from the shoulder, above the roadway, and is capable of rebounding when struck. The delineator also provides excellent reflectivity at night. The tube is attached to the delineator and then slipped into the steel cantilever. When the delineator arm is impacted, the custom thermoplastic provides flexibility and permits the arm to deflect and then return to the proper position. Materials for both the arm and the coupler were chosen for their UV-stability and most especially for their cold temperature impact performance.

The last part of the custom solution featured color. Pexco manufactured white delineator arms on one side of the road and green on the opposite side. Similar to running lights on a boat, this color coding gives drivers a clear indication of their position on the road, even in the most blinding snowstorms. Known for its vast areas of flat topography, high winds, and prodigious snow drifts, the treacherous 411 required a customized delineation solution to help drivers safely navigate roadway contours through the worst of conditions. With Dalton Delineators now installed along the full length of this 400 mile road, enhanced visibility and safety for ice road truckers has been greatly increased.

About Pexco LLC

Based in Atlanta with multiple plants across the United States and Mexico, Pexco is a North American leader in the design and fabrication of custom extruded and injection molded plastics products. It provides standard and specialty parts and components to manufacturers and end-users for a broad range of custom applications, including the specialty industrial, lighting, traffic safety, fence, filtration and electrical insulation industries. Pexco offers a full range of custom design, engineering and fabrication services. Pexco meets the requirements of ISO 9001:2015 registration for all of its manufacturing operations. For more information, visit www.pexco.com/traffic or contact 253-284-8000.

Key Takeaways:

- *Extensive extrusion and thermoplastic material know-how*
- *Unique product design to meet installation and maintenance requirements*