



Testimonial

Sunoco - Gasket Resources Inc. Bolted Joint Program

Maureen Boyle,
Rail Equipment Coordinator
Sunoco Inc.

Sunoco began our relationship with Gasket Resources in July 2002 while attending a NAR (Non Accident Release) meeting of the AAR (American Association of Railcar). During this meeting, Gary Grubert of GRI led a presentation on understanding the dynamics of bolted joints on railcars. The timing was perfect for us at Sunoco as we were working diligently to eliminate NAR's associated with bolted joint leaks and material mix-ups. Root-cause analysis of NAR's on Sunoco railcars revealed many cars were equipped with generic gaskets with no compound traceability and virtually no visibility to components (fasteners/washers) that were supposed to be on the car. In several cases, the product being shipped attacked the fillers in the generic gaskets causing premature failure.

Sunoco has over 3,000 tank cars in our fleet carrying various hazardous commodities. We were pleased to learn through testing by our laboratory that GRI's Durlon® 9000 material is acceptable for use in all commodities we ship. Simplifying to one gasket material has helped Sunoco with compatibility, performance, and standardization. We have confidence in the suitability and traceability of the branded Durlon® 9000 gasket material and have received excellent technical support and customer service. As a result of GRI's partnership with Salco Products who leads their supply chain, product availability is never an issue.

Our program to eliminate NAR's associated with Bolted Joints is multi faceted:

THE DATABASE

GRI's Technical Services Department worked in concert with our railcar lessors to develop a database per car build series, identifying each bolted joint, type of flange, fastener/washer specification and torque values. These "take-offs" along with installation instructions are then sent with the car so there is a clear understanding of what components should be used and how to properly install.

Think LEAN:

GRI and their supply chain partner Salco Products have developed a lean manufacturing concept for Sunoco.

- 1. The Database provides exact gasket dimensions and components for each specific tank car application along with torque and installation guidelines**
- 2. Gasket selection is easier with standardization to one product (Durlon® 9000) and color-coding each gasket size commonly found in our fleet**
- 3. Reduce Inventory through standardization Sunoco has dramatically reduced inventory cost**
- 4. Gasket Identification labels are color-coded and placed directly on the car**
- 5. Traceability- Since GRI is the manufacturer of the Durlon® 9000, they can trace every gasket all the way through the manufacturing process**
- 6. Installation Guidelines- GRI provided Sunoco with Posters and Pocket Torque Guides that detail the installation procedures which includes torque guidelines for each gasket we use on our fleet. Values of this part of the program include:**
 - a. Specific torque values per bolted joint**
 - b. Detailed installation accountability**
 - c. Eliminates installation related failures resulting from human error and assumptions**
- 7. Assembly Specifications- The Assembly Record is part of car documentation and travels with the car**
- 8. Installation Training- GRI has provided on-site “Best Practices” Installation Training**
- 9. Maintenance Manual- The “Bolted Joint Program for Rail Cars” is now an important part of our Maintenance Manual**

We are very satisfied with our bolted joint standardization program and our partnership with Gasket Resources Inc.

**Maureen Boyle,
Sunoco Inc.**