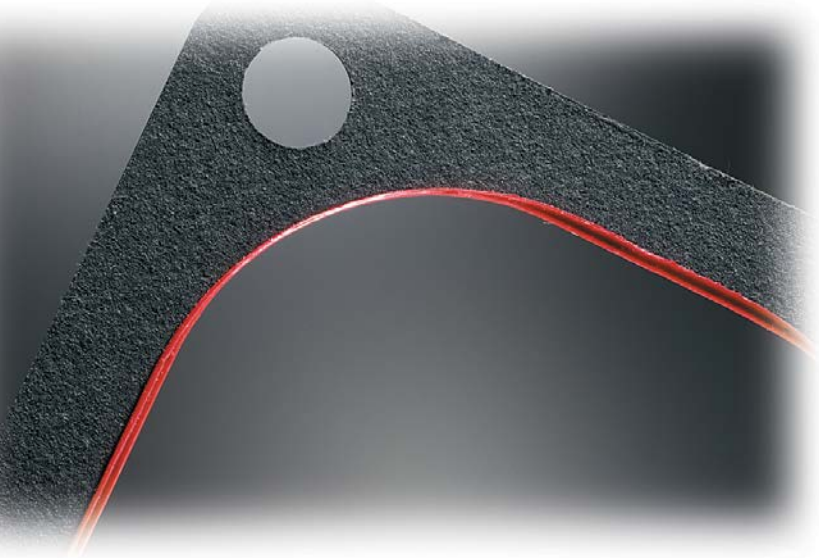
Interface Performance Materials

Application Engineering

Let's Talk Performance

Interface
Performance Materials

Engineering the Best Sealing Performance and Value into Your Application



Select-a-Seal's elastomer edge seals low flange pressure areas where long bolt spans or flange deflection occur.

The Process Drives Results

Whether you are an OEM or an OEM supplier, you face increasing market demands for improved performance, reduced costs, and operational certainty. The answer might be in applying a new sealing design or technology in a new project. Or finding a more efficient seal for an existing application.

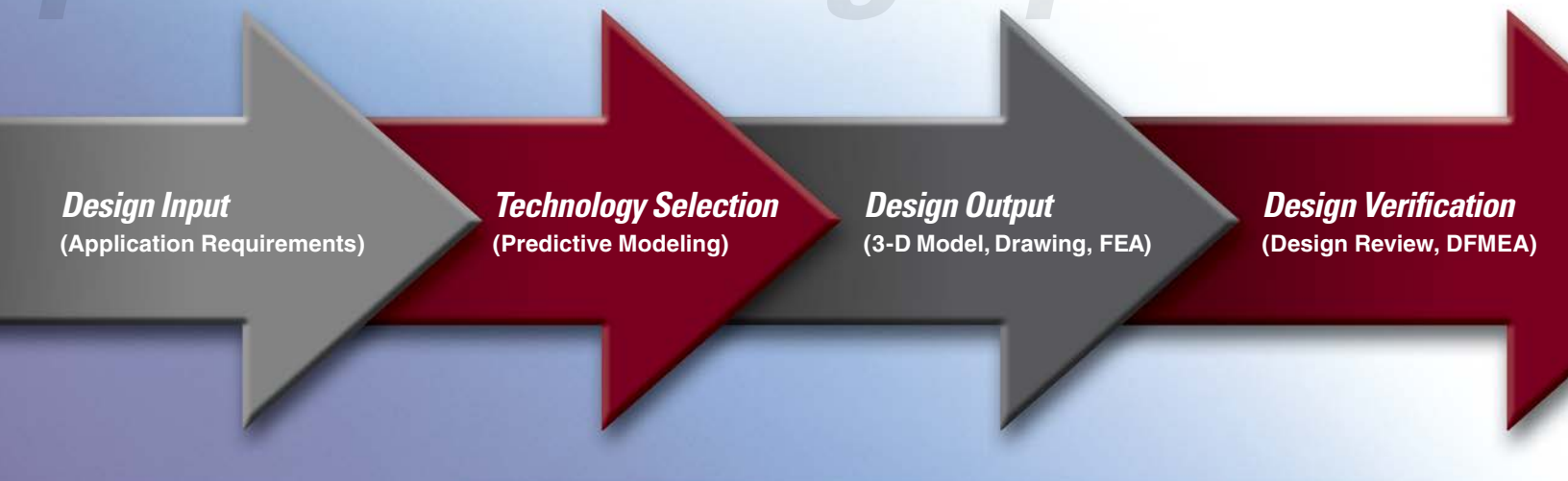
In either case, successful implementation of affordable, durable sealing solutions requires expertise in application analysis, gasket design, material properties, performance prediction, and part validation techniques. A highly trained engineering staff applies this expertise within a rigorous process to deliver a good design and a quality product.

Expertise in Gasket Engineering

Interface is uniquely equipped to meet your sealing needs with cost-efficient, environmentally-friendly solutions: our gaskets are 100% asbestos-free and 100% solvent-free. And we're continually evolving better sealing solutions.

Example: *Select-a-Seal® Rubber-edge Composites (REC)—a new category of sealing technology—employ a rubber edge on a composite body to create a highly durable, two-part sealing system. With Select-a-Seal REC gaskets, you get a reliable alternative to other technologies.*

product design process



Working with leading engine and powertrain manufacturers worldwide

- Briggs & Stratton
- Caterpillar
- Cummins Engine
- DaimlerChrysler
- Detroit Diesel
- Doosan Infracore
- General Motors
- Honda
- Hyundai Motor
- Isuzu Motors
- Iveco
- John Deere
- Kohler Company

ISO/TS 16949 Product Design and Manufacturing

The Lancaster, Pa. plant and world-class Technical Center have been registered by Underwriters Laboratories, Inc. to the International Organization for Standardization (ISO) 9001 management system standards and TS 16949, the Harmonized Standard for the Automotive Supply Chain.

We have access to processes and procedures to meet the rigorous quality requirements of the automotive and heavy-duty diesel industries. No matter what industry you serve, you can be assured that our standards for engineering and manufacturing will meet or exceed your requirements. Building on Customer-Oriented Processes to ensure process effectiveness and efficiency in realizing product designs, we are fully aligned with the needs of our customers.

Your Design, Our Expertise

Collaboration is Just the Beginning

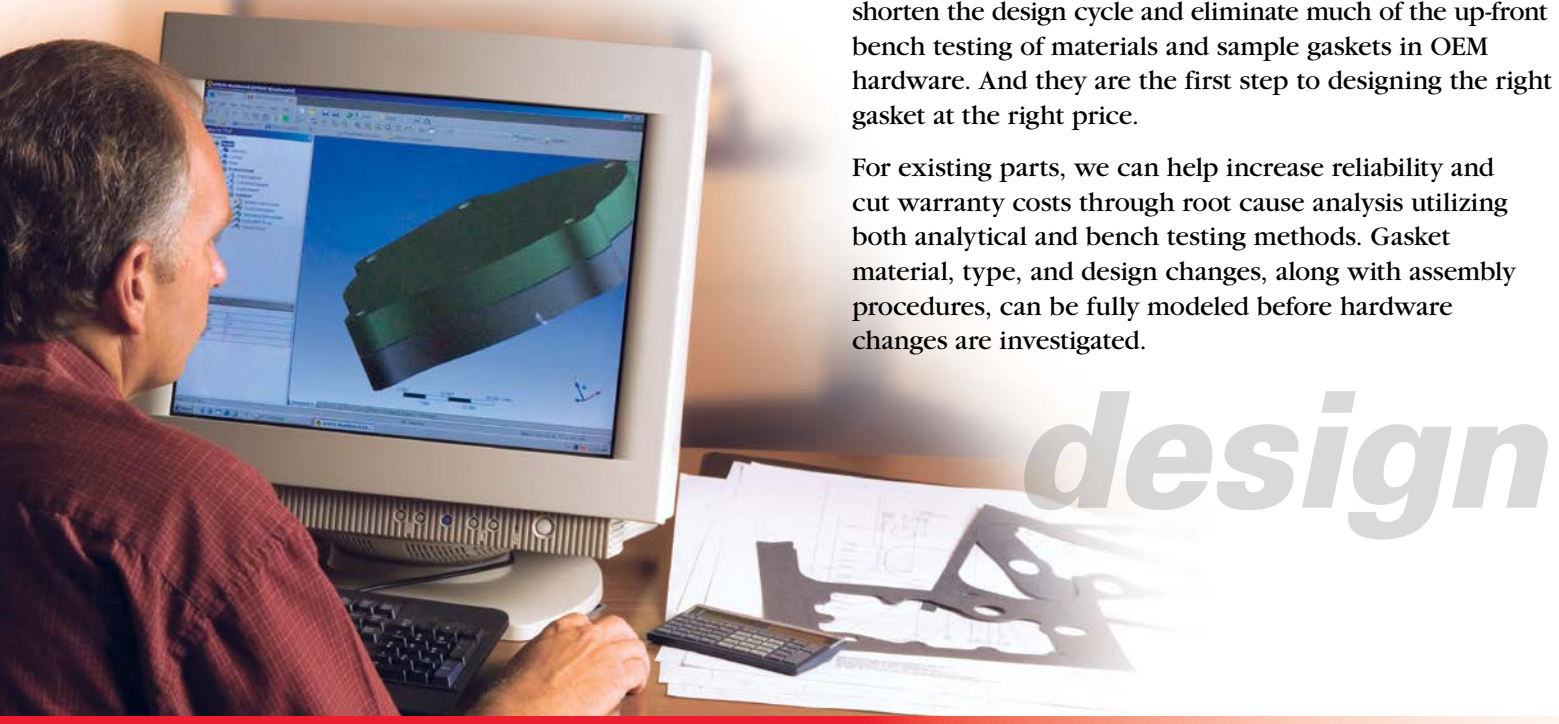
Cost pressures on OEMs are increasing. Raw materials and energy prices are on the rise and these basic costs of doing business offer little room for reduction. In response, we have developed a big picture approach to analyzing your design so we can help you achieve the required performance and lowest total cost. The earlier you engage with us, the more potential we have to find ways to improve performance and cost.

Design Recommendations That Go Beyond the Gasket

Optimum sealing performance requires analyzing all aspects of a joint's design. Proper gasket design and material selection are critical, but a Lowest Total Cost solution may require changes to OEM part designs. Working with CAD files and 3-D modeling while your part is still under development, we can recommend changes in flange widths, boss heights, adjustment to bolt locations, modifications to torque levels—all to increase the long-term reliability of the seal without increasing the costs.

Advanced modeling and testing technologies put us on the same platform as much of our automotive, diesel, and small engine customer base worldwide. These technologies help shorten the design cycle and eliminate much of the up-front bench testing of materials and sample gaskets in OEM hardware. And they are the first step to designing the right gasket at the right price.

For existing parts, we can help increase reliability and cut warranty costs through root cause analysis utilizing both analytical and bench testing methods. Gasket material, type, and design changes, along with assembly procedures, can be fully modeled before hardware changes are investigated.



Design Input
(Application Requirements)

Technology Selection
(Predictive Modeling)

Design Output
(3-D Model, Drawing, FEA)

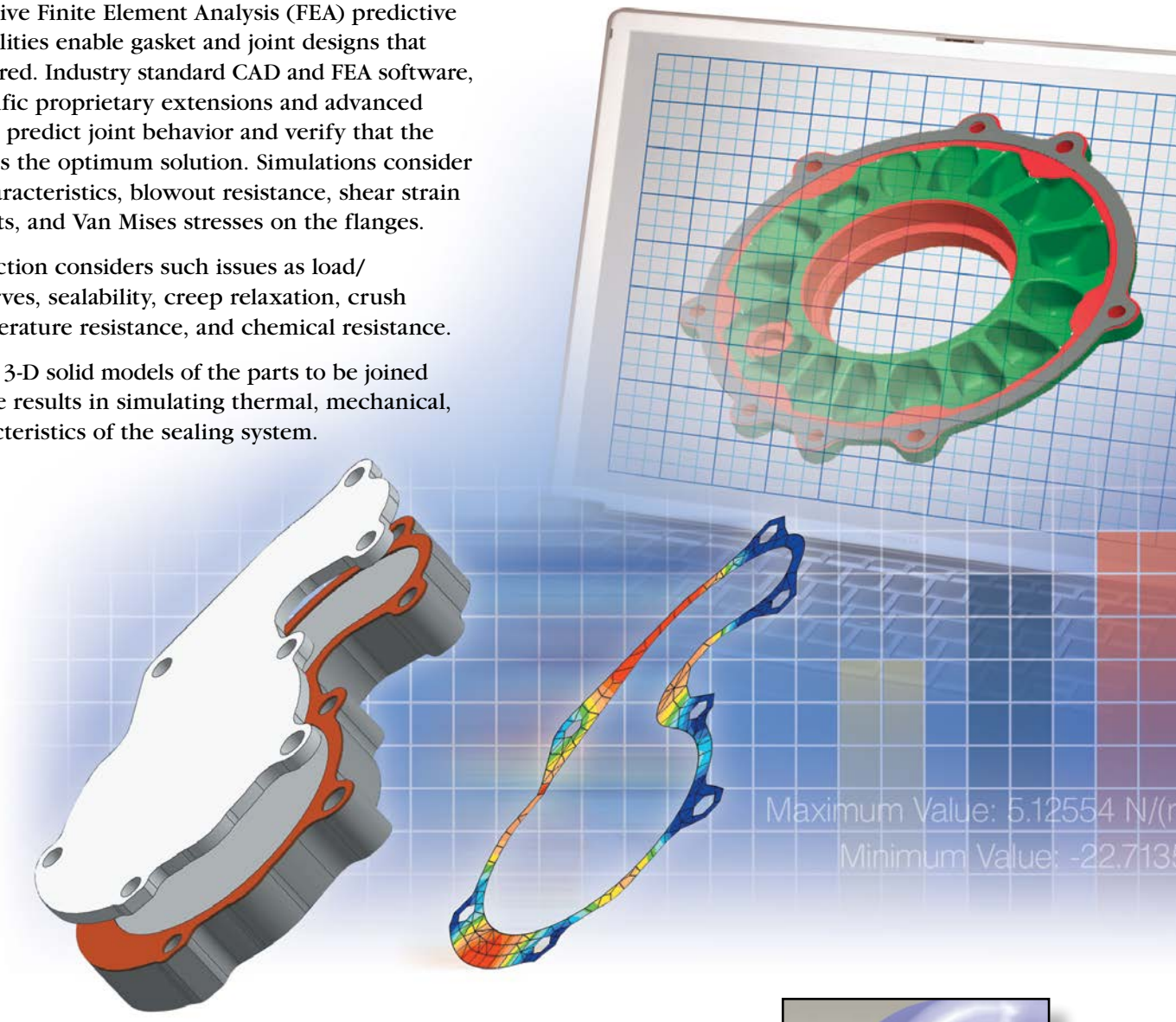
verification

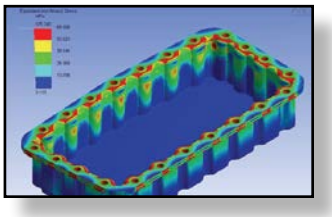
Design Output Meets Design Input Requirements

Thorough Design Failure Mode Effects Analysis (DFMEA) and comprehensive Finite Element Analysis (FEA) predictive modeling capabilities enable gasket and joint designs that perform as required. Industry standard CAD and FEA software, plus gasket-specific proprietary extensions and advanced material models, predict joint behavior and verify that the design represents the optimum solution. Simulations consider compression characteristics, blowout resistance, shear strain on dynamic joints, and Van Mises stresses on the flanges.

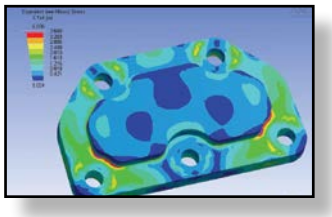
Technology selection considers such issues as load/compression curves, sealability, creep relaxation, crush resistance, temperature resistance, and chemical resistance.

We can use your 3-D solid models of the parts to be joined to ensure reliable results in simulating thermal, mechanical, and other characteristics of the sealing system.

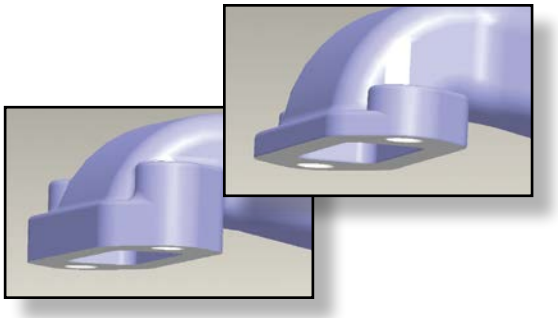




▲ *Evaluating the number and position of bolts*



▲ *Evaluating stresses on a plastic flange*



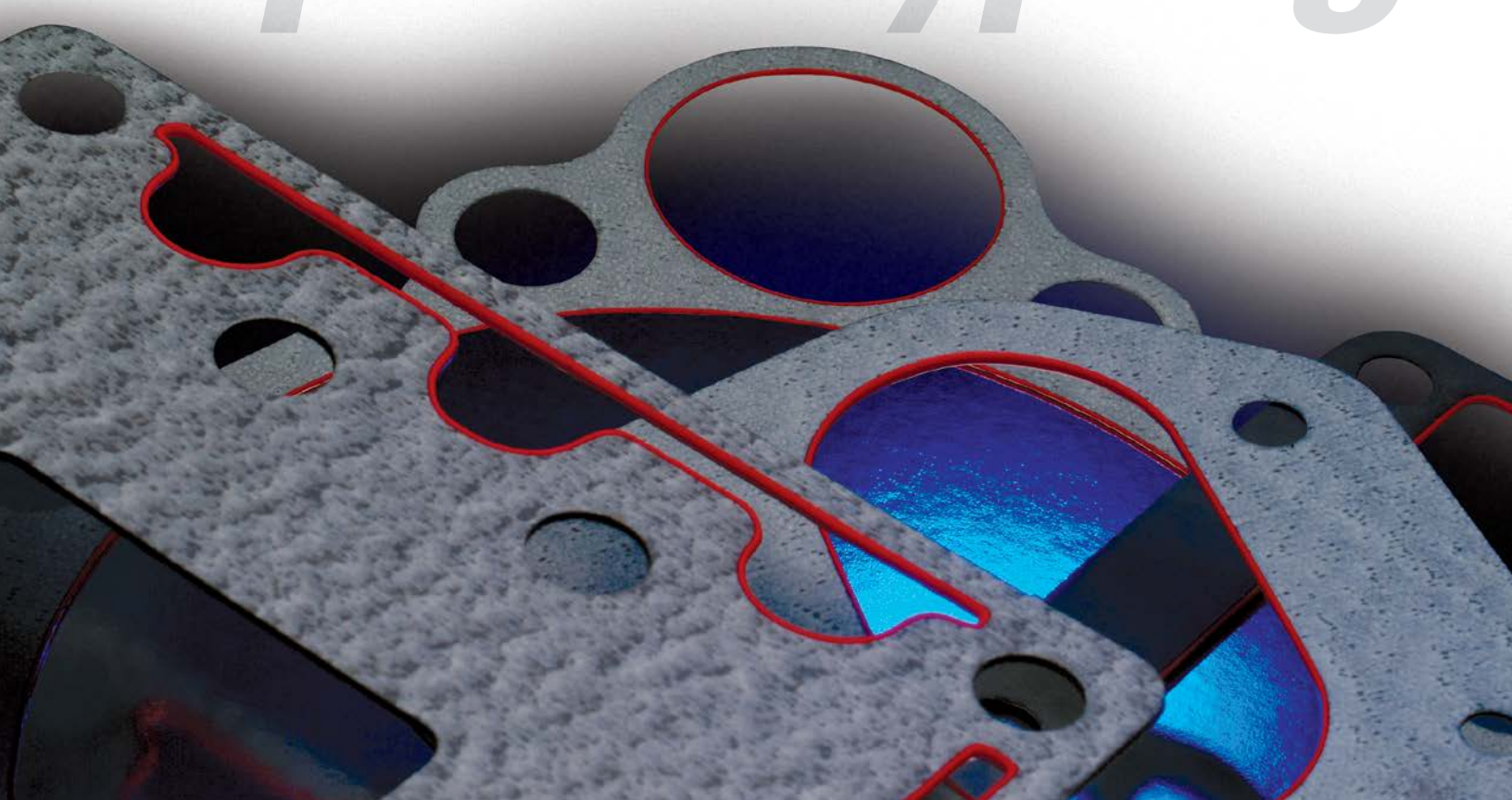
▲ *Recommending flange design changes*

Ready for the Real World

Rapid Prototyping of Production-Representative Samples for Validation Testing

Once you have approved the design, a patented manufacturing process allows rapid turnaround of prototypes for real-world testing that will validate the results of the simulation. Select-a-Seal prototypes, for example, are delivered in 21 days or less.

prototyping



The Proof is in the Testing

Comprehensive testing capabilities provide for static and dynamic testing, accelerated aging, and response to fluid exposure, heat, high thermal change rates, pressure pulsing, vibration, etc. Before the design is released to manufacturing, you'll have the data to prove the gasket meets your specifications.

validation

Your Gasket: On Time, On Budget, In Spec

Interface promises technically reliable, cost-effective solutions. Advanced testing and analysis capabilities conform to many OEM test standards. We provide pre-validation test data when requested.

We understand the importance of providing a high degree of technical reliability, including reliability of data accuracy, reliability of meeting data delivery dates, and reliability of performance.

Take the First Step

To learn more about our application engineering service, visit **www.InterfaceMaterials.com** or call an Interface regional sales office.

Testing Capabilities

Advanced Testing Ensures Performance

- Thermal cycling
  - with high temperature/pressure fluid circulation
  - with vibration
- Nitrogen sealability
- Oil and coolant sealability
- Hot compression testing
- Friction/shear testing
- Erosion testing
- Pressure-pulse testing
- Dynomometer testing
- Customized bench testing

Global Support

At Interface Performance Materials, we do more than just ship gaskets and gasket materials. We know that different market segments and localities require different products, different approaches, and different levels of technical support. With our knowledge of the global market, our broad product line, and value-added services, we are uniquely equipped to support your needs.

Obtain additional information by calling our Center for Customer Excellence at 877-942-7538.

Quality Standards

Manufacturing plants in New York, Pennsylvania and Germany are registered to ISO 9001. The Centerville product design and parts manufacturing operation and manufacturing plants in Lancaster, PA and Marshalltown, IA are registered by Underwriters Laboratories, Inc. to TS 16949, the Harmonized Standard for the Automotive Supply Chain. TS 16949 is the automotive industry's most challenging standard. We view these certifications as confirmation that our quality processes are among the best in the sealing industry. Our OEM and aftermarket customers benefit from added assurance of our quality.

Interface Performance Materials serves businesses worldwide with quality product, engineering support, and superior customer service.

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A10517 UL REGISTERED FIRM ISO 9001:2000 ISO/TS 16949:2002 INTERFACE PERFORMANCE MATERIALS

KPMG Quality Registrar

ANSI-RAB QMS ACCREDITED

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