

CDI Energy Products' Latest API 610 Recognized High-Performance Polymer Material Excels in Highly Corrosive Applications

CDI's latest material to achieve API 610 recognition, dures® 200 has outperformed service life expectations under extremely corrosive sulfuric acid conditions.



HOUSTON, TEXAS, UNITED STATES, May 25, 2021 /EINPresswire.com/ -- [CDI](#)

[Energy Products](#), a global leader in high-performance polymer components, announced today its latest material to achieve [API 610 recognition](#) outperformed service life expectations under extremely corrosive sulfuric acid conditions. API 610 is the standard for Centrifugal Pumps for

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Dr. Tim Bremner, Materials Technology Director

Petroleum, Petrochemical and Natural Gas Industries. CDI's proprietary thermoplastic polymer composite, dures® 200, was the foundation for critical components developed for an API 610 Vertical Single Casing Diffuser Pump (VS1) for a high-production sulfuric acid plant. CDI's material scientists and engineers collaborated with the pump OEM to custom design suction bell eye case rings, bowl eye case rings, and bowl bushings which could sustain differential pressures of over 200psi, coupled with an extreme temperature profile of -20°F to 105°F (-28.8°C to 40.55°C). The pump OEM, a global industry leader in centrifugal, positive displacement, and specialty pumps required a material with higher thermal stability and higher creep resistance than Polytetrafluoroethylene (PTFE). CDI's dures® 200 was

developed to support service applications with aggressive acids and bases, aromatics, and amines. The pump OEM has indicated that the custom components are still in active use by the end-user and have far exceeded the vertical pump's typical service maintenance schedule with a significant reduction to costly downtime.

According to Dr. Tim Bremner, Materials Technology Director at CDI, "In the past decade, thermoplastic-based materials development in energy and chemical process sectors has been dominated by the push for operation at higher temperatures and higher pressures. The added challenge of achieving customers' performance targets in very high or very low pH fluid handling, as encountered in sulphuric acid production or caustic amine gas treaters, introduces another challenge to material design due to the limitations these corrosive environments place on our choice of fillers and reinforcements. We are more than enthusiastic about the performance of dures® 200 in pump applications where the combined temperature, pressure, and corrosive fluids would cause premature failure in lower-performing materials."

Currently, dures® 200 is delivering similar results for custom-designed components in single-stage overhung pumps and horizontally split multistage pumps with lean amines under pressures of over 200psi. Pump operators using dures® materials can operate their equipment with tighter clearances, decreasing vibration and downtime while improving and boosting efficiency. CDI's dures® materials also improve reliability and reduce maintenance costs by reducing the risk of pump failures due to touch-off or dry running conditions during start-up. In the dures® family of materials, A451 and XPC2 are also recognized by API and meet the requirements of API 610 for stationary wear or rotating parts applications.

"API pumps are manufactured to meet certain industrial requirements including specifications that directly affect performance and safety. Designing components for those extreme duty pumps requires extensive technical knowledge of both the equipment and the environments for



Examples of some of the polymer-based products developed for centrifugal pumps developed with CDI's dures® material family



dures® 200

RECOGNIZED BY API AND MEETS REQUIREMENTS OF API 610



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end use," says Gary Gibson, P.E., CDI's Senior Sales Engineer for API 610 Pump Components. Every five years, the API Committee convenes to review API standards and seek comments from its members which includes oil and gas industry leaders and distinguished industry institutes. Gibson goes on to say, "when the API 610 Twelfth Edition was released earlier this year, we were thrilled to learn that dures® 200 was now recognized in the non-metallic wear part materials selection."

CDI's team has extensive pump knowledge with proven results for components developed for circulating water pumps, cooling water pumps, boiler feed multistage pumps, river and waterway pumps, screening wash pumps, sump tank pumps, and much more. To learn more about dures® 200, or the dures® family of materials for power generation, hydrocarbon processing, or water treatment applications, contact a CDI representative.

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About CDI Energy Products

CDI Energy Products is a Michelin Group Company headquartered in Humble, Texas with locations serving North America, Europe, the Middle East, and Asia-Pacific. We are a global leader in high-performance polymer products to the energy industry and beyond. Our in-house engineering, material development, and manufacturing capabilities offer us full vertical integration from raw materials to finished products. Our products are engineered by a highly trained staff of engineers working side by side with our Material Science team. Our engineered materials are developed and tested on-site. We service oil and gas, liquid natural gas (LNG), cryogenics, wind and renewable energy, water management, fluid handling, automotive, aerospace and defense, medical and biomedical, refining and petrochemical, industrial processing, power generation, and semiconductor markets. For more information about CDI Energy Products, visit www.CDIproducts.com.

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