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BISCO® Silicones

Argent

BISCO® RS-700 Silicone Sponge Series

The RS-700 series is a high-performance silicone sponge series, the perfect closed-cell complement to the BISCO® Silicones portfolio. The RS-700 product line offers ruggedized properties for even the harshest applications. Whether the application involves rain, snow, extreme heat, or whipping winds, RS-700 can handle it. The closed-cell structure and high strength formulation combine to make RS-700 the only choice for extreme applications. RS-700 products are available in continuous roll form in three firmness grades.

Extreme locations demand extraordinary performance.

1. Extreme Toughness

This closed-cell material withstands even the harshest applications, performing at its best even while being stretched (up to 175% before material failure) or compressed, it always bounces back. RS-700 combines high tensile strength with abrasion resistance, making it ideal for conditions where other gaskets fail. The RS-700 series will not fail due to scratches or stretch conditions.

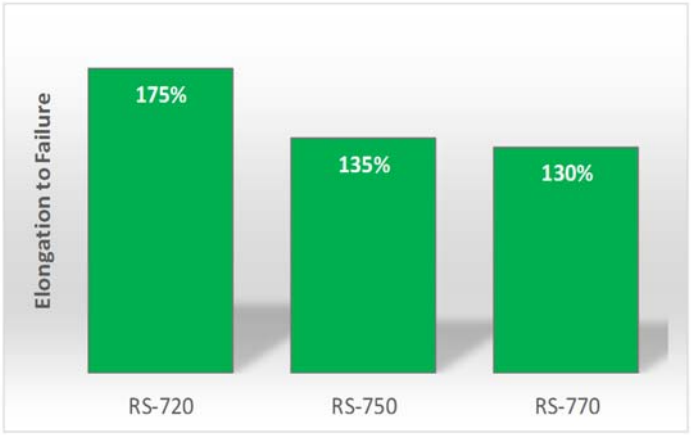

Table 1: *Elongation Failure Percentage for RS-700*

2. Temperature Resiliency

Extreme temperatures often demand performance. All three firmness grades of RS-700 are rated for constant use up to 205°C (401°F) and intermittent use up to 260°C (500°F). The RS-700 product family is also rated for a low temperature embrittlement point of –55°C (-67°F).
Whether used over a wide temperature range, or at constant high temperatures, designers can count on the reliable performance of RS-700.

RS-700 can handle many rugged environments

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3. Reliable Sealing at Low Compressions

The closed-cell structure and low compression set of RS-700 Silicone Sponge gives the product line unparalleled water-sealing capabilities over long periods of time. RS-700 is the clear choice for designers with demanding applications that require water-sealing performance at conditions as low as 15% compression.

The RS-700 Silicone Sponge product line can be used in the design of extra strong and durable gaskets tasked with blocking out both moisture and dust. All three grades of RS-700 meet the strictest UL gasket certifications. In addition, all product line grades are certified for UL50, UL50E periodic recompression, UL508 and UL157.

RS-700 has been tested to ASTM F 37, *Sealability of Gasket Materials*, and surpassed the competition by leaps and bounds. Gasket aspect ratio and pressure play a key role in this test, even at the smallest gasket ratio (1:1), and under 10.34 kPa (1.5 psi) of pressure, every grade of RS-700 passes.

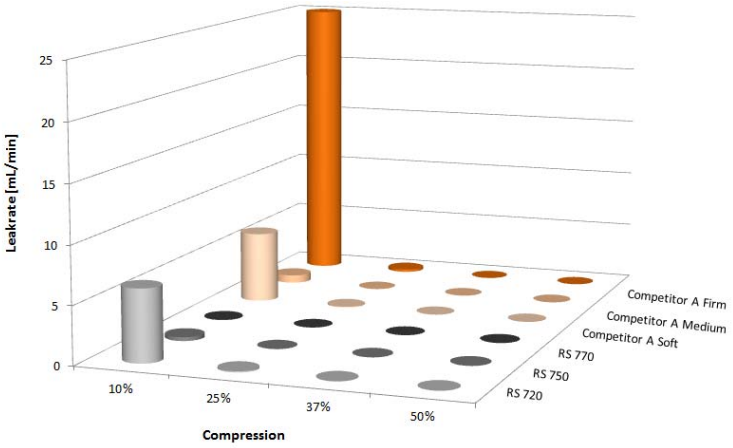
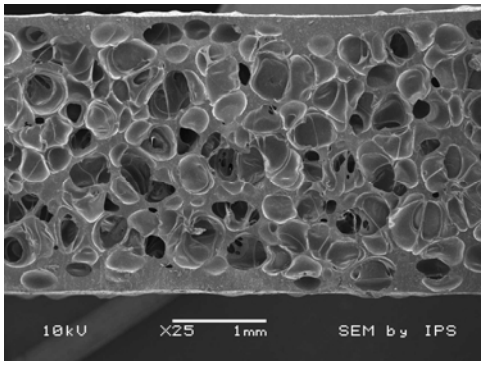
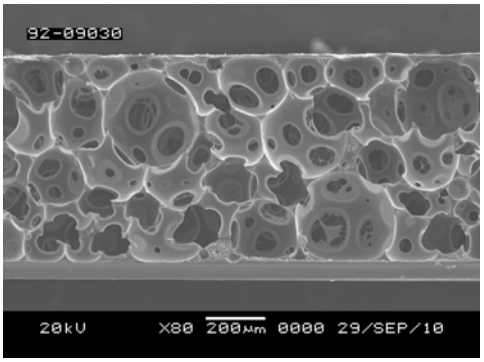


Table 2: RS-700 Water Sealing
Conditions: 1:1 Gasket Ratio, 10.34 kPa (1.5 psi)



SEM Image of closed-cell foam



SEM Image of open-cell foam

The full RS-700 series outperforms the competition in low compression sealing applications. Even at just 10% sealing, RS-700 provides superior sealing due to the combination of the smooth surface and closed-cell structure of the sponge.

Seals out moisture. | Fights frigid cold. | Always bounces back.

Resists high heat. | Withstands strong winds. | Stretches under stress.

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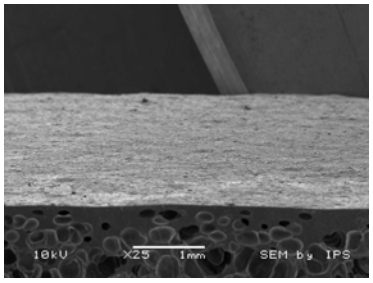
4. Improved Manufacturing Efficiency

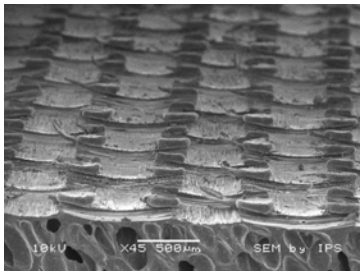
RS-700 is manufactured in a continuous roll to reduce the amount of down time in changing sheeted goods. Continuous rolls also decrease scrap rate for optimal machine utilization. RS-700 has a smooth surface that allows the adhesive to be spread evenly over the surface when applied. An improved adhesive application ensures that no air bubbles, which could potentially lead to water ingress, occur at the gasket interface.



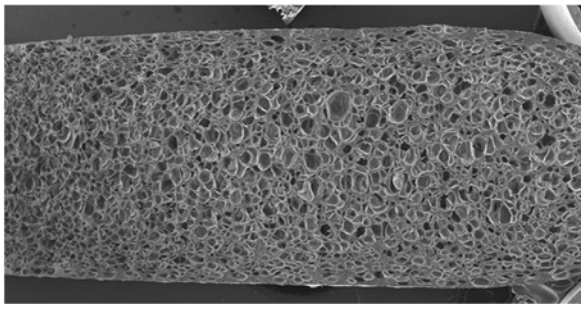
RS-700 Smooth Finish Surface

5. Long-Term Performance in Critical Applications

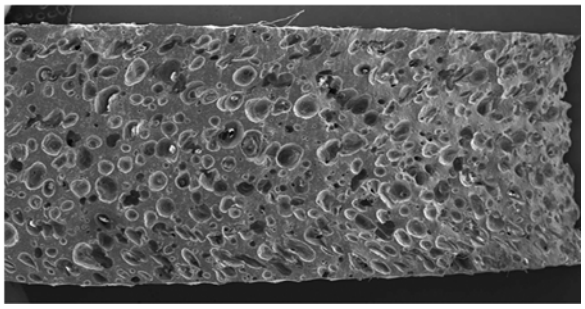
The RS-700 series has a standard compression set value of less the 15%, significantly better than the competition. The samples were put through a more rigorous compression set testing at 50% compression and 100°C to predict how RS-700 and the competition would perform in harsh conditions. Scanning Electron Microscopy images below illustrate the clear visual differences between RS-700 and Competitor A. The RS-750 grade maintains the cell structure network after aging while the cell structure of Competitor A collapses.



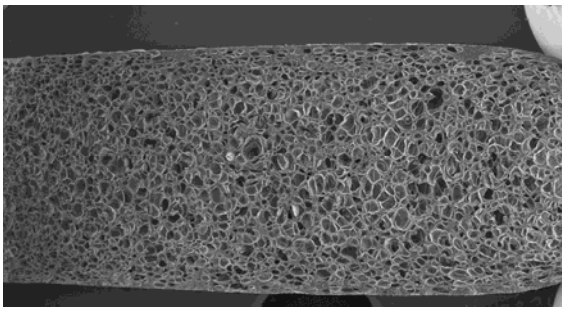
Competitor Textured Surface



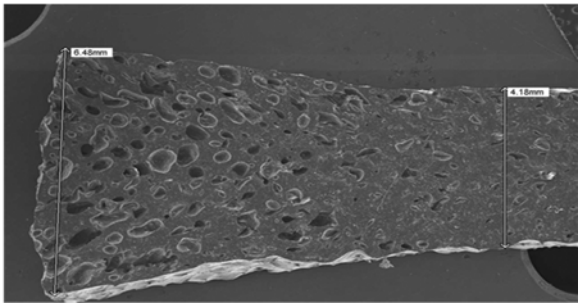
RS-750 Sample Before Compression Set Testing



Competitor A Medium Sample Before Compression Set Testing



RS-750 Sample After Compression Set Testing



Competitor A Medium Sample After Compression Set Testing

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