Expanding Possibilities

Fracking, or hydraulic fracturing, is enabling the oil and gas industry to expand production to reserves that were previously unreachable. Parker's packer element technology is making that transition possible in a safe and efficient way.

The packer element systems are developed to function in both open-hole and cased-hole completion systems. TechSeal manufactures these elements from a variety of oil field grade materials including those for high pressure and high temperature environments. AST style and custom designed packer elements are available for order with various backup options.

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Product Features:

- Compatible with a variety of completion tools
- High expansion and extrusion resistance
- Broad temperature range capability including high pressure, high temperature
- NORSOK M-710, API and ISO 23936 certifications

Design Engineering:

- Application Engineers available for design assistance and technical support
- Non-linear elastomeric Finite Element Analysis (FEA)
- Material and functional testing
- Elastomer material development
Oil Field Grade Elastomers

The most highly engineered materials for consistent performance in harsh operating conditions: high pressures, high temperatures, abrasive completion fluids and corrosive subterranean environments.

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<th>Applications</th>
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<th>Descriptions</th>
<th>Featured Compounds</th>
<th>Material Characteristics</th>
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<td></td>
<td>Base fluids</td>
<td>Fracking fluids with a high pH</td>
<td>V7821-75</td>
<td>FEPM (Aflas®) compounds. Compatible with various base fluids.</td>
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<td></td>
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<td>V4461-90</td>
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<td></td>
<td>High expansion</td>
<td>Applications with large radial gaps</td>
<td>KA270-70</td>
<td>Hydrogenated nitrile (HNBR) compounds. High expansion capabilities to seal large radial gaps in downhole applications.</td>
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<td></td>
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<td>KA280-80</td>
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<td></td>
<td>High pressure and high temperature</td>
<td>Downhole applications where formation temps and pressures push the elastomers’ limits</td>
<td>KB292-95</td>
<td>Hydrogenated nitrile (HNBR) compound. Excellent extrusion resistance.</td>
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<td></td>
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<td>VA298-90</td>
<td>Fluorocarbon (FKM) compounds. Excellent extrusion resistance and high temp performance.</td>
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<td>VA275-95</td>
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<td>Steam</td>
<td>Steam injection wells where high pressure steam is required for efficient oil production</td>
<td>E0962-90</td>
<td>Ethylene propylene (EPDM) compound. Outstanding resistance to high temp steam.</td>
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<tr>
<td></td>
<td>Standard well condition</td>
<td>General use</td>
<td>NA523-70</td>
<td>Nitrile (NBR) compounds.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NA524-80</td>
<td>Good extrusion resistance and proven test performance.</td>
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<td></td>
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<td>NA525-90</td>
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</tbody>
</table>

*Aflas® is a registered trademark of Asahi Glass Co., Ltd.

Note: This table presents most common Parker TechSeal compounds for the oil and gas applications, providing general guidelines on material selections. Please consult our Application Engineers for specific recommendations for your applications. Material reports and test data are available upon request.

The graphic above is for illustration purposes only.
TechSeal designs and develops packer elements to function in open-hole and cased-hole well completion systems. The elements are offered in standard and custom configurations. ID sizes range from 1.000” to 18.000”, wall thickness can go up to 1.250”, and the length of the element can go up to 5+ feet.

Custom Backup Configurations

Often a single rubber element is not adequate to seal the high temperatures and high pressures seen in demanding downhole applications. Parker TechSeal provides pre-assembled solutions with backup systems that are engineered to meet your application requirements. The backup configurations can include both metallic and non-metallic options such as metal springs, PEEK rings, PTFE rings, composite rings and other custom backup designs.
Functional and Material Testing

Functional Testing

TechSeal has the capability to perform functional testing for single, double or triple element stacks. Hydraulic testing can be performed up to 400°F [~205°C] and 12,000 psi.

Material Testing

Parker TechSeal’s material laboratory can develop new compounds or test existing rubber compounds to confirm the material’s compatibility with the application’s operating environment. Additionally, we have the ability to characterize all materials for accurate Finite Element Analysis (FEA) predictions. FEA simulations can predict the element’s behavior in specific application conditions, eliminating the need for multiple prototype iterations.

Manufacturing and Services

Manufacturing Processes

• Flexible extrusion and machining processes allow for easy customization
• The unique patented manufacturing process produces parts with no voids, no flash and proven performance in the field
• Ideal for a wide range of element design geometries
• ISO certified facilities in North America

Additional Finishing Services

• Surface marking for element identification
• Part labeling
• Shrink wrapping and assembly packaging
• Surface coatings

An FEA simulation of packer elements with backups