FracPac™ Systems

Halliburton, an established leader in frac packing solutions, meets customers’ needs with advanced industry-leading, fit-for-purpose gravel pack and frac tool designs.

These designs come in four performance levels:

- Standard GP/HRWP Tools
- FracPac™ Tools
- Red Zone® FracPac Tools
- Beyond Red Zone™ (BRZ) FracPac Tools

The FracPac system features a patented carbide crossover design to achieve optimum results. The Red Zone FracPac system, with its wear-resistant upper extension, is designed for the long zone applications, larger proppant volumes and higher rates. And the Beyond Red Zone FracPac system, for extreme FracPac applications, achieves the highest rates and volumes available in the industry.

Features

Halliburton delivers a wide range of solutions for every well completion need.

- Fit-for-purpose tool systems
- Patented wear-resistant crossover insert
- Extensive analysis and verification testing
- Weight-down tool position control
- Capable of squeeze and live annulus packing

Benefits

- Highest rates and volumes with ramped schedule
- Reliable execution
- Lowest risk of erosive failure
- Field-proven sand control systems
- Halliburton’s frac design capabilities
- Global support capabilities

Applications

Halliburton knows reservoirs vary in size, production potential and characteristics, so we offer a wide range of solutions to meet specific well completion needs. Our fit-for-purpose systems can be designed for any sand control well application, in any location, around the globe.

- Single and multizone completions
- Short to long-zone capabilities
- Laminar zones requiring stimulation
Extensive Testing and Analysis

Halliburton began testing tools for frac packing service in the 1990s. Today, Red Zone® frac packing service provides enhanced rate and volume capabilities. During the design phase, extensive analysis is performed using advanced flow modeling software. This analysis enables the design process to better predict actual results and to make fine changes to the design features of the tools to enhance performance. This same analysis is reviewed after testing to compare the results and improve future analysis. Testing is performed at Halliburton’s Duncan, Oklahoma, test facility with proppant volumes and ramping schedules that correspond to actual field conditions. Data is collected throughout the testing to evaluate the life of the tool to make tool life calculations and to evaluate additional improvements that can be made to further advance the technology.

Test parameters: 5.00-in. bore Frac Flow test, 50 BPM, 20/40 Carbo Prop, 2.1m lbs.

Maximum Tool Ratings

<table>
<thead>
<tr>
<th>Tool Size</th>
<th>Flow Rate</th>
<th>Volume</th>
<th>Proppant</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-in. 2.55</td>
<td>20 BPM</td>
<td>175,000#</td>
<td>20/40 (SG2.71) Ceramic</td>
</tr>
<tr>
<td>5 1/2-in. 2.75</td>
<td>30 BPM</td>
<td>175,000#</td>
<td>20/40 (SG2.71) Ceramic</td>
</tr>
<tr>
<td>6 5/8-in. and 7-in. 3.25</td>
<td>40 BPM</td>
<td>400,000#</td>
<td>20/40 (SG2.71) Ceramic</td>
</tr>
<tr>
<td></td>
<td>25 BPM</td>
<td>250,000#</td>
<td>20/40 (SG3.56) Ceramic</td>
</tr>
<tr>
<td>7-in. (17-35#) 3.88</td>
<td>40 BPM</td>
<td>250,000#</td>
<td>20/40 (SG2.71) Ceramic</td>
</tr>
<tr>
<td>7 5/8-in. 3.88</td>
<td>45 BPM</td>
<td>750,000#</td>
<td>16/30 (SG3.56) Ceramic</td>
</tr>
<tr>
<td>9 5/8-in. 5.00</td>
<td>60 BPM</td>
<td>1.2 MM#</td>
<td>20/40 (SG3.27) Ceramic</td>
</tr>
<tr>
<td>9 5/8-in. 6.00</td>
<td>70 BPM</td>
<td>800,000#</td>
<td>16/30 (SG3.56) Ceramic</td>
</tr>
</tbody>
</table>

Rating can be impacted by customer completion requirements.

For more information on FracPac™ systems, please call your local Halliburton representative or email us at sandcontrol@halliburton.com.

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