The Obsidian® bridge plug extends Halliburton’s line of composite products. This tool has similar features as the Fas Drill® products but with the additional benefit of enhanced drillability. The setting equipment is compatible with the Fas Drill line of composite tools. The Obsidian bridge plugs have operation limits of 250°F (121°C) and 8,000 psi (55.16 MPa) differential pressure.

**Features and Benefits**

The Obsidian bridge plug is designed for isolating perforated intervals or portions of a wellbore. The unique material used in its construction and ease of drilling makes the Obsidian bridge plug ideal for horizontal applications.

To enhance reliability in high debris or horizontal applications, these tools are equipped with stronger slip bands and the slips are attached to the mandrel with shearable composite pins. This allows run-in speeds in horizontal sections in excess of 150 ft/min and speeds in vertical sections in excess of 400 ft/min.

- Consists of composites and a packer set, giving it no ferrous metal content.
- Isolates a lower zone during squeeze cementing operations on land-based or offshore rigs, in vertical or deviated wells.
- Functions as a bridge plug in multizone stimulation treatments.
- Saves rig time and reduces casing damage caused by long drillout processes.
- Drills out with conventional tricone, PDC, or with junk-mill bits.

**Setting Procedures**

Operators can use one of the following types of equipment to set the Obsidian frac plugs:

- Electric wireline setting tool
- Slickline setting tool
- Hydraulic setting tool
Case History

North America Land – North Texas. A major operator needed to drill two horizontal wells in a north Texas field. After consultation with Halliburton engineers, the operator chose to install Obsidian® bridge plugs in the wells. A total of three Obsidian plugs were installed in the wells. A single Obsidian bridge plug was installed in the first well as a “kill” plug and two Obsidian bridge plugs were installed in the second well to form an isolation barrier for a casing test. After they had served their purpose, operations began to remove the plugs. On the first well, just over two hours after pipe running commenced, the Obsidian “kill” plug was tagged by the bit. The well was circulated and the power swivel rigged up in preparation of drilling the Obsidian bridge plug. The crew began rotating pipe and set down on the plug with approximately 8,000 to 10,000 lbs after which the plug was drilled out in approximately two minutes. On the second well, the same procedure was used. The top bridge plug was drilled out in approximately 1-1/2 minutes and the remnants were pushed down to the top of the second bridge plug. Four minutes later it was completely drilled out. When samples of the drilled out plugs were collected off the shaker and examined by the operator, no returns larger than the size of a marble were found. The remains of the drilled out plugs consisted of fibrous material, rubber and small pieces of ceramic.

This picture depicts the returns found after drillout of the Obsidian® bridge plug.

Obsidian® Bridge Plug Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Maximum Tool OD inch (cm)</th>
<th>Tool Rating</th>
<th>Casing Size inch</th>
<th>Casing Weight lb/ft</th>
<th>Maximum Casing ID inch (cm)</th>
<th>Minimum Casing ID inch (cm)</th>
<th>Length inch (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>101753025</td>
<td>Bridge Plug</td>
<td>3.66 (9.30)</td>
<td>8K</td>
<td>250˚F</td>
<td>4 1/2</td>
<td>9.5 - 13.5</td>
<td>4.09 (10.39)</td>
<td>28.92 (73.45)</td>
</tr>
</tbody>
</table>

Note: For temperatures between 250˚F – 300˚F, pressure rating is reduced to 6K.

For more information on Halliburton’s Obsidian bridge plug, contact your Halliburton representative or e-mail us at service.tools@halliburton.com.

© 2009 Halliburton. All rights reserved. Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

www.halliburton.com