Halliburton’s exclusive Micro Matrix® cement now offers solutions to special cementing problems that have beset operators for many years. When you’re faced with such challenges as how to obtain the needed compressive strength across a low-strength water zone; or how to seal off a microannulus smaller in cross-section than a typical cement particle; or even how to get the needed compressive strength when the BHCT is only 40°F, as in a subsea completion, Micro Matrix cement will provide the solution you need. And that isn’t all. Micro Matrix cement can be your solution anytime you need a lightweight cement, a cement to penetrate extremely small spaces, or a cement with high compressive strength.

**Micro Matrix Cement Represents a Major Advance in Primary and Squeeze Cementing Technology**

- Develops high early compressive strengths at low temperatures.
- Penetrates and helps seal areas normally inaccessible to oilfield cements.

### For Squeeze Cementing, Micro Matrix Cement Helps Repair Leaks and Correct Other Problems

Micro Matrix cement has proven to be ideal for sealing casing leaks. Its penetrating ability and strength characteristics offer a distinct advantage over regular cement in virtually every squeeze application: controlling water or gas flow, sealing thief zones, repairing leaks, and facilitating abandonment.

<table>
<thead>
<tr>
<th>Penetration Capabilities Through Narrow Slot</th>
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<tbody>
<tr>
<td><strong>Cement Type</strong></td>
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<tr>
<td>Micro Matrix</td>
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<td>Class H</td>
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</tbody>
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Pressure = 90 psi  
Temperature = 75°F

*Micro Matrix cement at 12 lb/gal showed 91% penetration through a 0.006-in. slot. Standard cement at 16 lb/gal showed zero penetration.*
Micro Matrix Cement Also Offers Unique Properties for Primary Cementing

For any primary cementing application requiring a high-strength, lightweight slurry, Micro Matrix could be your solution. Also, WOC times with Micro Matrix cement may be reduced by as much as 50% at low temperature as compared to premium cement.

Micro Matrix cement expands slightly on hydration and offers significantly better bonding strength than typical cement at low temperature. And, Micro Matrix is versatile, compatible with virtually all of Halliburton’s proven cement additives.

Ultrafine Cement Technology: The Breakthrough Innovation That Produced Micro Matrix Cement

Micro Matrix cement is micro ground so that the particle size is 10 or more times smaller than standard cement. This smaller particle size has been particularly useful for remedial cementing where penetration of small cracks is required, and for wells completed and produced that develop high permeability streaks resulting in adverse production economics.

Standard cement slurries, because of their greater particle size, are unable to produce more than a skin effect following a squeeze procedure. Micro Matrix cement, on the other hand, has been proven to penetrate small channels, thus helping shut off undesired water, gas, or steam production.

Micro Matrix Cement—One More Reason to Call Halliburton for Advanced Cementing Solutions

For over 60 years, Halliburton has led in developing cementing solutions for oil and gas operators around the world—whether the application is a relatively simple surface cementing job or a complex deep liner job.

Contact your local Halliburton representative about using Micro Matrix cement in wells with hard-to-meet cementing requirements. Learn how Micro Matrix cement can make even the toughest conditions manageable. A team of Halliburton cementing experts will blend local knowledge with superior lab support, design programs, and pumping capabilities into a total package that delivers results along with the best value in the field.

Micro Matrix Cement’s Unique Properties

- Ultrafine particle size
- Low density
- High early compressive strength
- Good bond strength
- Expansion during hydration
- Simple slurry design (cement and water)
- Superior performance at cold temperatures