3M™ Ceramic Sand Screens

Introduction

3M™ Ceramic Sand Screens offer efficient sand and proppant flowback control for demanding conditions where erosion and corrosion are major challenges. The ceramic materials used in 3M ceramic sand screens offer exceptional resistance to abrasion and chemical corrosion, and are approximately 10 times harder than the metallic materials used in conventional metallic screens. As a result, 3M ceramic sand screens offer superior service life and show minimal wear under reservoir conditions.

3M ceramic sand screens are comprised of a flexible stack of ceramic rings with v-shaped or keystone gaps. Slot opening, screen length and screen diameter are chosen for the specific application. 3M ceramic sand screens can be deployed in most standard well completions, including both new and existing wells.

Features and Benefits

- Increased well life-cycle longevity helps lower capital expenditures
- Increased production envelope enables higher production rates, especially in fraced wells
- Unlocking wells where sand failure has occurred
- Alternative to gravel packing, with simplified logistic and completion design
- For horizontal, deviated and vertical wells
- Simple deployment via wireline/slickline, coiled tubing or conventional rig system
- The 3M ceramic sand screen design can be conveyed through existing production tubing or optimized for well work over or new well applications
- 3M ceramic sand screens can be suspended from an existing nipple profile, or be deployed with an E-packer, mechanical or swell packer
- Suitable for both cased-hole and open-hole applications

Applications

- Wells with corrosion and erosion issues
- Stand-alone screens as an alternative to gravel packing
- Intervention in failed sand control
- Proppant flow-back control
- High temperature/pressure sand screens
- Protection for valves, SSDs (sliding sleeve doors) and ICDs (inflow control devices)
## Material Description
(Not for specification purposes.)

<table>
<thead>
<tr>
<th>Maximum Screen OD</th>
<th>Base pipe OD * (inch)</th>
<th>Base pipe weight (lbs/ft)</th>
<th>Screen ID (inch)</th>
<th>Connections</th>
<th>Metallurgy Base Pipe/Metal Parts</th>
<th>Maximum joint length</th>
<th>Slot opening (Micron)</th>
<th>Average weight of screen (lbs/ft)</th>
<th>Diameter perforation (inch)</th>
<th>Perforations base pipe (avg perfis/ft)</th>
<th>Minimum collapse pressure † (psi)</th>
<th>Minimum burst pressure † (psi)</th>
<th>End ring pushoff (tons)</th>
<th>DLS (°/100 ft)</th>
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<tbody>
<tr>
<td>(inch)</td>
<td>0.591</td>
<td>0.43</td>
<td>0.433</td>
<td>API NUE</td>
<td>316/316L</td>
<td>7 ft (Modular)</td>
<td>150, 200, 250, 300 µm</td>
<td>3.3</td>
<td>0.236</td>
<td>33</td>
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<td>8.1</td>
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* Base Pipe Outer Diameter (OD) & Inside Diameter tolerances according to API Spec 5CT
† Collapse and burst values are tested in alignment to ISO17824 and API19SS with no screen failure/no loss of sand control
Special metallurgy can be available based on specific application demand

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