## API Spec 11D1 - Packers and Bridge Plugs

<table>
<thead>
<tr>
<th>Standard</th>
<th>Edition</th>
<th>Section</th>
<th>Question</th>
<th>Reply</th>
</tr>
</thead>
</table>
| 11D1     | 2nd Edition July 2009 | 6.5.2.3 | Must the two pressure reversals specified in Section 6.5.2.3 (seventh bullet) both be in the same direction? (Alternately) in a single qualification per 6.5.2.3 would a pressure hold sequence of below-above-below meet requirements, assuming all acceptance criteria are met? | The requirement for two reversals may be achieved by either of the following sequences:  
— above to below to above;  
— below to above to below.  
These test sequences meet the definition of pressure reversal in 3.30.                                                                                                                                                                                                 |
| 11D1     | 2nd Edition July 2009 | 6.5.2.3 | Section 6.5.1 states “Packers or bridge plugs validated to grade V5 through grade V0 shall not be rated for use in casing or tubing sizes and masses (weights) that can have a maximum ID larger than the ID used in the validation test.  
Section 6.5.2.3 states “Set in maximum rated casing or tubing ID±0.76 mm (±0.030 in.) (see 6.5.1).”  
Does this mean that a plug tested and rated for 11.6 lb/ft casing cannot be rated for 10.5 lb/ft without additional testing, or does it mean that a plug cannot be tested and rated for 11.6 lb/ft casing unless the maximum ID condition (maximum mill condition) that is allowed for that weight of casing is tested? | The requirement is to test the packer or bridge plug in the maximum ID for which you are going to rate it. The tolerance of ± 0.030 in. is for those who are manufacturing a test fixture for use rather than using actual tubing or casing.  
When using API tubulars for 11D1 testing, for any given size and weight, the tubular is never going to be at the maximum ID allowed.  
If you are going to use an unmodified API tubular for the validation test, you must measure the ID of that tubular and that measurement becomes the largest ID for which the packer or bridge plug can be rated. The rating for the packer or bridge plug should be stated as the ID range for which the packer or bridge plug is validated and not by the weight of the tubular, which could have a large range of potential ID's. |
| 11D1     | 2nd Edition July 2009 | 7.4.2 | To meet the requirement of 7.4.2 for metallic components to Quality grade 1, am I correct that the only way I can meet the requirement is by having MTRs from 2 different labs referring to the same batch/heat number, and that they indicate that each mechanical and chemical property on the supplier’s/manufacturer’s specification has been met. | For Q1, Type 1 components two separate documents are required.  
An MTR to the supplier/manufacturer for each component to verify that the material meets supplier/manufacturer specifications.  
Additionally, document that the supplier/manufacturer has verified, through testing, that the chemical and mechanical properties of all Type 1 Q1 components meet the MTRs. Chemical and mechanical property determination shall be in accordance with a national or International standard. |
### 7.4.2 Background: Section 7.4.2 states: “The supplier/manufacturer shall verify, through testing, that the chemical/mechanical properties of metallic materials meet the MTRs as specified for quality grade Q1 for Type 1 components. Chemical/mechanical property determination shall be in accordance with a national standard or International Standard.”

**Question:** If the raw material supplier/manufacturer performs chemical and mechanical testing on the specific heat of material supplied and details the actual results on an MTR, after verifying that these meet the material criteria, does that satisfy the requirements of 7.4.2?

**Reply:** No. The requirement for the supplier/manufacturer to verify through testing is in addition to the earlier requirements in 7.4.2 for the supplier to provide either a certificate of compliance or material test reports for Q1-type components.

### 3.41 What is the the purpose of (weld) in section 3.41 type 1 components. Does this mean only welded components or including welded components?

**Reply:** It's meant to encompass "all components, including welded components".

### B.3.3.4.8 e) Background: Section B.3.3.4.4 Validation Testing Scope states “The steps within each testing phase shall be performed in the order shown.” Section B.3.3.4.8 states “To successfully complete the V0-H phase 1 requirements, complete the following testing steps.” Section B.3.3.4.8. e) states to “Perform a minimum of three pressure reversals at or above the maximum rated pressure, and testing begins with the maximum rated pressure from above or below.”

**Question:** Is B.3.3.4.8 e) considered a test step and a requirement to complete a minimum of three pressure reversals before moving to the next test step, B.3.3.4.8 f)?

**Reply:** YES
<table>
<thead>
<tr>
<th>Standard</th>
<th>Edition</th>
<th>Section</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>11D1</td>
<td>3rd Edition April 2015</td>
<td>B.3.3.4.8 - B.3.3.4.10</td>
<td>Background: B.3.3.4.5 Validation Testing Process, Grade V3-H, Phase 1 and B.3.3.4.6 Validation Testing Process, Grade V0-H, Phase 1 require the packer to be set at max temperature and the temperature reduced by a minimum of the temperature-cycle range. B.3.3.4.6 Validation Testing Process, Grade V3-H, Phase 2 and B.3.3.4.9 Validation Testing Process, Grade V0-H, Phase 2 require the packer to be set at the minimum temperature plus the temperature cycle range. There is no requirement for the two testing phases to cover the entire temperature range or overlap. Question: When Phase 1 and Phase 2 tests are required, does the entire packer temperature range have to be covered without any gaps during Phase 1 and 2 validation? EXAMPLE: A packer with a temperature rating from 100F to 350F with a temperature cycle range of 100F. Phase 1 test would be conducted from 350 F to 250F. Phase 2 would conducted from 200F to 100F. A gap exists between 200F and 250F in the two Phases.</td>
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