
2. Service conditions:
   - DOT rated service pressure: 200 bar (2900 psi)
   - Hydraulic test pressure: 333 bar (4833 psi)

3. Material:
   Mn-Steel, Fully killed and made to fine grain practice by basic oxygen or electric furnace process Chemical Composition (%)

4. Manufacture:
   Spun-tube cylinder

5. Cylinder leakage test:
   The cylinder needs to be done air-tightness test. Test pressure is 200 bar, holding 60s, not leak is qualified.

6. Heat Treatment: Quenching and Tempering

7. Mechanical Properties: (at room temperature)
   - Tensile (Rg): ≥720 MPa (104400 psi)
   - Yield (Re): ≥540 MPa (78300 psi)
   - Elong (A): ≥20% on 2" G.L. for DOT
   - Flattening test: Flatten to 6 x t without cracks

8. MT flaw detection: Each cyl. per DOT-3AA

9. Cylinder hydraulic test
   - carry out hydraulic test with test pressure of 333 bar and cylinder should be found no distortion or leakage, the ratio of permanent volumetric expansion ≤10%

8. D. O. T. Wall Stress Calculations: S = P(1.3D^2 + 0.4d^2) / (D^2 - d^2)
   S = Maximum wall stress, psi
   P = Test pressure, psi
   D = Outside diameter, inch
   d = Inside diameter, inch
   Rg = The minimum tensile strength, psi
   R = 104400
   S = 4833 [1.3 (9.134)^2 + 0.4 (8.585)^2]
   s = 68655 psi < 70000 psi

Thus the minimum wall thickness will be:
   t(min) = 1/2 (D - d) = 1/2 (9.134 - 8.585) = 0.274 inch
   0.67 Rg = 104400 psi x 0.67 = 69948 psi
   S = 68655 psi < 69948 psi < 70000 psi

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**TABLE**

<table>
<thead>
<tr>
<th>Model</th>
<th>Min WATER CAPACITY</th>
<th>LENGTH &quot;L&quot;</th>
<th>APPROX WEIGHT ±5%</th>
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<tr>
<td>LITERS</td>
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<td>MM</td>
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<tr>
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<td>1705</td>
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