ASTM A325

Scope - This specification covers high strength heavy hex structural bolts from 1/2" through 1-1/2" diameter. These bolts are intended for use in structural connections and therefore have shorter thread lengths than standard hex bolts. This specification is applicable to heavy hex structural bolts only.

<table>
<thead>
<tr>
<th>Grades</th>
<th>TYPE 1</th>
<th>TYPE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Medium carbon, carbon boron, or medium carbon alloy steel</td>
<td>Weathering steel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mechanical Properties</th>
<th>Type 1 Bolts</th>
<th>Type 3 Bolts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Markings</td>
<td>Size</td>
<td>Tensile, ksi</td>
</tr>
<tr>
<td>A325</td>
<td>½ – 1</td>
<td>120 min</td>
</tr>
<tr>
<td>A325</td>
<td>1 1/8 to 1 ½</td>
<td>105 min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Properties</th>
<th>Type 1 Bolts</th>
<th>Type 3 Bolts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Element</td>
<td>Carbon Steel</td>
<td>Carbon Boron Steel</td>
</tr>
<tr>
<td>Carbon</td>
<td>0.30 - 0.52</td>
<td>0.30 - 0.52</td>
</tr>
<tr>
<td>Manganese</td>
<td>0.60 min</td>
<td>0.60 min</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>0.040 max</td>
<td>0.040 max</td>
</tr>
<tr>
<td>Sulfur</td>
<td>0.050 max</td>
<td>0.050 max</td>
</tr>
<tr>
<td>Silicon</td>
<td>0.15 - 0.30</td>
<td>0.10 - 0.30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommended Mating Materials</th>
<th>Nuts</th>
<th>Washers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type 1</td>
<td>Type 3</td>
</tr>
<tr>
<td></td>
<td>Plain</td>
<td>Galvanized</td>
</tr>
<tr>
<td>A563 C, C3, D, DH, DH3; A194 2H</td>
<td>A563DH; A194 2H</td>
<td>A563 C3, DH3; A194 2H</td>
</tr>
</tbody>
</table>

800-642-0921 or visit us at southernfasteners.com