Allowable Unbraced Axial Loads

General Notes:
1. Allowable axial loads listed in kips (1 kip=1000 pounds).
2. Allowable axial loads do not include a 1/3 allowable stress increase.
3. Allowable axial loads are based on punched webs. Punchouts are 1-1/2" wide x 4" long.
4. Allowable axial loads are based on concentric axial loading conditions only.
5. The lengths indicated are for unbraced lengths. The addition of intermediate bracing may increase the allowable axial loads.

![Diagram of structural system](image)
### ALLOWABLE UNBRACED AXIAL LOADS

Based on length (kips)

<table>
<thead>
<tr>
<th>Member</th>
<th>Unbraced Length (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allowable Unbraced Axial Loads</td>
<td></td>
</tr>
<tr>
<td>362S137-33</td>
<td>33</td>
</tr>
<tr>
<td>362S137-43</td>
<td>33</td>
</tr>
<tr>
<td>362S137-54</td>
<td>50</td>
</tr>
<tr>
<td>362S137-68</td>
<td>9.28</td>
</tr>
<tr>
<td>362S137-97</td>
<td>13.07</td>
</tr>
<tr>
<td>362S162-33</td>
<td>3.12</td>
</tr>
<tr>
<td>362S162-43</td>
<td>4.43</td>
</tr>
<tr>
<td>362S162-54</td>
<td>7.99</td>
</tr>
<tr>
<td>362S162-68</td>
<td>10.79</td>
</tr>
<tr>
<td>362S162-97</td>
<td>15.14</td>
</tr>
<tr>
<td>362S200-33</td>
<td>3.41</td>
</tr>
<tr>
<td>362S200-43</td>
<td>5.12</td>
</tr>
<tr>
<td>362S200-54</td>
<td>8.79</td>
</tr>
<tr>
<td>362S200-68</td>
<td>12.43</td>
</tr>
<tr>
<td>362S200-97</td>
<td>18.07</td>
</tr>
<tr>
<td>362S250-33</td>
<td>5.25</td>
</tr>
<tr>
<td>362S250-43</td>
<td>9.00</td>
</tr>
<tr>
<td>362S250-54</td>
<td>12.44</td>
</tr>
<tr>
<td>362S250-97</td>
<td>19.64</td>
</tr>
<tr>
<td>362S300-33</td>
<td>6.72</td>
</tr>
<tr>
<td>362S300-43</td>
<td>9.00</td>
</tr>
<tr>
<td>362S300-54</td>
<td>12.44</td>
</tr>
<tr>
<td>362S300-68</td>
<td>15.00</td>
</tr>
<tr>
<td>362S300-97</td>
<td>21.60</td>
</tr>
<tr>
<td>362S375-33</td>
<td>7.26</td>
</tr>
<tr>
<td>362S375-43</td>
<td>9.36</td>
</tr>
<tr>
<td>362S375-54</td>
<td>11.96</td>
</tr>
<tr>
<td>362S375-68</td>
<td>15.43</td>
</tr>
<tr>
<td>362S375-97</td>
<td>21.00</td>
</tr>
<tr>
<td>362S425-33</td>
<td>7.26</td>
</tr>
<tr>
<td>362S425-43</td>
<td>9.36</td>
</tr>
<tr>
<td>362S425-54</td>
<td>11.96</td>
</tr>
<tr>
<td>362S425-68</td>
<td>15.43</td>
</tr>
<tr>
<td>362S425-97</td>
<td>21.00</td>
</tr>
<tr>
<td>362S475-33</td>
<td>7.26</td>
</tr>
<tr>
<td>362S475-43</td>
<td>9.36</td>
</tr>
<tr>
<td>362S475-54</td>
<td>11.96</td>
</tr>
<tr>
<td>362S475-68</td>
<td>15.43</td>
</tr>
<tr>
<td>362S475-97</td>
<td>21.00</td>
</tr>
<tr>
<td>362S525-33</td>
<td>7.26</td>
</tr>
<tr>
<td>362S525-43</td>
<td>9.36</td>
</tr>
<tr>
<td>362S525-54</td>
<td>11.96</td>
</tr>
<tr>
<td>362S525-68</td>
<td>15.43</td>
</tr>
<tr>
<td>362S525-97</td>
<td>21.00</td>
</tr>
<tr>
<td>362S575-33</td>
<td>7.26</td>
</tr>
<tr>
<td>362S575-43</td>
<td>9.36</td>
</tr>
<tr>
<td>362S575-54</td>
<td>11.96</td>
</tr>
<tr>
<td>362S575-68</td>
<td>15.43</td>
</tr>
<tr>
<td>362S575-97</td>
<td>21.00</td>
</tr>
</tbody>
</table>

#### Notes:
1. Listed axial loads marked with "*" indicate the KL/r > 300.
2. Listed axial loads marked with "w's" indicate that h/t > 200. This indicates that web stiffeners are required to prevent web crippling at points of concentrated loads.
3. Listed capacities are calculated per AISI-NASPEC S100-2007 with 2010 supplement.

**Complies with AISI S100-07 NASPEC with 2010 supplement • IBC 2012**

The technical content of this literature is effective 11/1/12 and supersedes all previous information.

**Clarkdietrich.com**
<table>
<thead>
<tr>
<th>Member</th>
<th>F_y (ksi)</th>
<th>Unbraced Length (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5505162-33</td>
<td>3.20</td>
<td>1.01 *</td>
</tr>
<tr>
<td>5505162-33</td>
<td>3.15</td>
<td>1.04</td>
</tr>
<tr>
<td>5505162-33</td>
<td>3.07</td>
<td>1.07</td>
</tr>
<tr>
<td>5505162-33</td>
<td>2.99</td>
<td>1.10</td>
</tr>
<tr>
<td>5505162-33</td>
<td>2.93</td>
<td>1.13</td>
</tr>
<tr>
<td>5505162-33</td>
<td>2.86</td>
<td>1.16</td>
</tr>
<tr>
<td>5505162-33</td>
<td>2.79</td>
<td>1.19</td>
</tr>
<tr>
<td>5505162-33</td>
<td>2.72</td>
<td>1.22</td>
</tr>
<tr>
<td>5505162-33</td>
<td>2.65</td>
<td>1.25</td>
</tr>
<tr>
<td>5505162-34</td>
<td>2.58</td>
<td>1.28</td>
</tr>
<tr>
<td>5505162-34</td>
<td>2.51</td>
<td>1.31</td>
</tr>
<tr>
<td>5505162-34</td>
<td>2.43</td>
<td>1.34</td>
</tr>
<tr>
<td>5505162-34</td>
<td>2.36</td>
<td>1.37</td>
</tr>
<tr>
<td>5505162-34</td>
<td>2.29</td>
<td>1.40</td>
</tr>
<tr>
<td>5505162-34</td>
<td>2.22</td>
<td>1.43</td>
</tr>
<tr>
<td>5505162-34</td>
<td>2.15</td>
<td>1.46</td>
</tr>
<tr>
<td>5505162-34</td>
<td>2.08</td>
<td>1.49</td>
</tr>
<tr>
<td>5505162-34</td>
<td>2.01</td>
<td>1.52</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.94</td>
<td>1.55</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.88</td>
<td>1.58</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.81</td>
<td>1.61</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.74</td>
<td>1.64</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.67</td>
<td>1.67</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.60</td>
<td>1.70</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.53</td>
<td>1.73</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.46</td>
<td>1.76</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.39</td>
<td>1.79</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.32</td>
<td>1.82</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.25</td>
<td>1.85</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.18</td>
<td>1.88</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.11</td>
<td>1.91</td>
</tr>
<tr>
<td>5505162-34</td>
<td>1.04</td>
<td>1.94</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.97</td>
<td>1.97</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.90</td>
<td>2.00</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.83</td>
<td>2.03</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.76</td>
<td>2.06</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.69</td>
<td>2.09</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.62</td>
<td>2.12</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.55</td>
<td>2.15</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.48</td>
<td>2.18</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.41</td>
<td>2.21</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.34</td>
<td>2.24</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.27</td>
<td>2.27</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.20</td>
<td>2.30</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.13</td>
<td>2.33</td>
</tr>
<tr>
<td>5505162-34</td>
<td>0.06</td>
<td>2.36</td>
</tr>
</tbody>
</table>

Notes:
1. Listed axial loads marked with * indicate the K/Lr > 300.
2. Listed axial loads marked with "ws" indicate that h/t > 200. This indicates that web stiffeners are required to prevent web crippling at points of concentrated loads.
3. Listed capacities are calculated per AISI-NASPEC S100-2007 with 2010 supplement.
ALLOWABLE UNBRACED AXIAL LOADS

Based on length (Kips)

<table>
<thead>
<tr>
<th>Member</th>
<th>Fy (ksi)</th>
<th>1</th>
<th>1.5</th>
<th>2</th>
<th>2.5</th>
<th>3</th>
<th>3.5</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000S162-43</td>
<td>3.90</td>
<td>3.93</td>
<td>3.96</td>
<td>3.99</td>
<td>4.02</td>
<td>4.05</td>
<td>4.08</td>
<td>4.11</td>
<td>4.14</td>
<td>4.17</td>
<td>4.20</td>
<td>4.23</td>
<td>4.26</td>
</tr>
<tr>
<td>1000S200-68</td>
<td>3.90</td>
<td>3.93</td>
<td>3.96</td>
<td>3.99</td>
<td>4.02</td>
<td>4.05</td>
<td>4.08</td>
<td>4.11</td>
<td>4.14</td>
<td>4.17</td>
<td>4.20</td>
<td>4.23</td>
<td>4.26</td>
</tr>
<tr>
<td>1000S250-97</td>
<td>3.90</td>
<td>3.93</td>
<td>3.96</td>
<td>3.99</td>
<td>4.02</td>
<td>4.05</td>
<td>4.08</td>
<td>4.11</td>
<td>4.14</td>
<td>4.17</td>
<td>4.20</td>
<td>4.23</td>
<td>4.26</td>
</tr>
<tr>
<td>1000S250-68</td>
<td>3.90</td>
<td>3.93</td>
<td>3.96</td>
<td>3.99</td>
<td>4.02</td>
<td>4.05</td>
<td>4.08</td>
<td>4.11</td>
<td>4.14</td>
<td>4.17</td>
<td>4.20</td>
<td>4.23</td>
<td>4.26</td>
</tr>
<tr>
<td>1000S300-54</td>
<td>3.90</td>
<td>3.93</td>
<td>3.96</td>
<td>3.99</td>
<td>4.02</td>
<td>4.05</td>
<td>4.08</td>
<td>4.11</td>
<td>4.14</td>
<td>4.17</td>
<td>4.20</td>
<td>4.23</td>
<td>4.26</td>
</tr>
<tr>
<td>1000S300-97</td>
<td>3.90</td>
<td>3.93</td>
<td>3.96</td>
<td>3.99</td>
<td>4.02</td>
<td>4.05</td>
<td>4.08</td>
<td>4.11</td>
<td>4.14</td>
<td>4.17</td>
<td>4.20</td>
<td>4.23</td>
<td>4.26</td>
</tr>
</tbody>
</table>

Notes:
1. Listed axial loads marked with " * " indicate the KL/r > 300.
2. Listed axial loads marked with " ws" indicate that h/t > 200. This indicates that web stiffeners are required to prevent web crippling at points of concentrated loads.
3. Listed capacities are calculated per AISI-NASPEC S100-2007 with 2010 supplement.
ALLOWABLE UNBRACED AXIAL LOADS

Based on length (Kips)

| Member        | Fy (ksi) | 1      | 1.5    | 2      | 2.5    | 3      | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16     | 17     | 18     | 19     | 20     |
|---------------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1200S162-54   | 50      | 8.43 ws| 8.16 ws| 7.80 ws| 7.17 ws| 6.47 ws| 5.74 ws| 5.01 ws| 3.63 ws| 2.71 ws| 2.12 ws| 1.72 ws| 1.44 ws| 1.22 ws| 1.06 ws| 0.93 ws| 0.82 * ws| 0.73 * ws| 0.66 * ws| 0.60 * ws| 0.55 * ws| 0.50 * ws| 0.46 * ws| 0.43 * ws|
| 1200S162-66   | 50      | 11.70  | 11.15  | 10.44  | 9.59   | 8.65   | 7.67   | 6.66   | 4.84   | 3.64   | 2.87   | 2.34   | 1.96   | 1.67   | 1.44   | 1.27 * ws| 1.12 * ws| 1.00 * ws| 0.90 * ws| 0.81 * ws| 0.74 * ws| 0.68 * ws| 0.62 * ws| 0.57 * ws|
| 1200S182-54   | 50      | 18.66  | 17.77  | 16.59  | 15.19  | 13.65  | 12.04  | 10.43  | 7.54   | 5.72   | 4.53   | 3.70   | 3.09   | 2.63   | 2.27   | 1.98 * ws| 1.74 * ws| 1.51 * ws| 1.31 * ws| 1.15 * ws| 1.02 * ws| 0.91 * ws| 0.82 * ws| 0.74 * ws|
| 1200S250-54   | 50      | 25.46  | 23.11  | 22.04  | 21.39  | 20.66  | 19.91  | 17.75  | 15.28  | 12.82  | 10.48  | 8.66   | 7.32   | 6.28   | 5.47   | 4.82   | 4.28   | 3.84   | 3.46   | 3.14   | 2.87   | 2.63   | 2.42 * ws| 2.15 * ws|
| 1200S300-54   | 50      | 28.99  | 26.65  | 25.05  | 23.91  | 22.64  | 21.39  | 20.66  | 19.91  | 17.75  | 15.28  | 12.82  | 10.48  | 8.66   | 7.32   | 6.28   | 5.47   | 4.82   | 4.28   | 3.84   | 3.46   | 3.14   | 2.87   | 2.63   | 2.42 * ws|
| 1200S162-97   | 50      | 12.00  | 11.30  | 10.58  | 9.94   | 8.91   | 7.56   | 6.03   | 4.23   | 3.18   | 2.62   | 2.14   | 1.77   | 1.46   | 1.20   | 1.00   | 0.84   | 0.70   | 0.58   | 0.48   | 0.40   | 0.33   | 0.28   | 0.23   |

Notes:
1. Listed axial loads marked with "*" indicate the KL/r > 300.
2. Listed axial loads marked with "ws" indicate that h/t > 200. This indicates that web stiffeners are required to prevent web crippling at points of concentrated loads.
3. Listed capacities are calculated per AISI-NASPEC S100-2007 with 2010 supplement.

Complies with AISI S100-07 NASPEC with 2010 supplement • IBC 2012
The technical content of this literature is effective 11/1/12 and supersedes all previous information.