RA330 Advantages
• The microstructure and chemical content of RA330 is very tightly controlled to enable it to withstand the effects of carburization as well as thermal shock and thermal fatigue, making it a prime candidate for thermal processing applications.
• RA330 can handle temperatures up to 2100°F which is higher than or comparable to other alloys with almost twice as much nickel. Alloys like 625 (1800°F) & 600 (2100°F) have significantly higher cost and little if any significant advantage.
• RA330 has been assigned to ASME P number 46 and can be welded using RA330-04 or 82 weld fillers.

RA 253 MA Advantages
• RA 253 MA has a leaner nickel content that allows it to remain very cost effective versus nickel base alloys.
• RA 253 MA has great high temperature strength, similar to high nickel alloys like alloy 601, and superior to other lower nickel stainlesses.
• RA 253 MA has been assigned to the same P group in ASME Section IX as 309 stainless and welded using standard practices (P - 8, Group 2).

Chemical Composition, %

<table>
<thead>
<tr>
<th>UNS</th>
<th>W.Nr</th>
<th>Cr</th>
<th>Ni</th>
<th>Si</th>
<th>Mn</th>
<th>C</th>
<th>Ce</th>
<th>N</th>
<th>Fe</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA330®</td>
<td>N08330</td>
<td>1.4886</td>
<td>19</td>
<td>35</td>
<td>1.25</td>
<td>1.0</td>
<td>0.06</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>RA 253 MA®</td>
<td>S30815</td>
<td>1.4835</td>
<td>21</td>
<td>11</td>
<td>1.7</td>
<td>0.6</td>
<td>0.08</td>
<td>0.04</td>
<td>0.17</td>
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</tbody>
</table>

Cantilever Testing
3 x 6 hour cycles at 2000°F

Average Stress
0.0001% Per Hour
Minimum Creep Rate
### Maximum allowable design stresses, ksi

<table>
<thead>
<tr>
<th>Material</th>
<th>1100°F</th>
<th>1200°F</th>
<th>1350°F</th>
<th>1500°F</th>
<th>1650°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA330</td>
<td>7.8</td>
<td>4.7</td>
<td>2.4</td>
<td>1.1</td>
<td>0.48</td>
</tr>
<tr>
<td>RA 253 MA</td>
<td>9.0</td>
<td>5.2</td>
<td>2.4</td>
<td>1.3</td>
<td>0.71</td>
</tr>
</tbody>
</table>

### Maximum Suggested Temperature Limit in Air

#### Thermal Fatigue

RA330 vs cast

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