AMINOX®-AS-1
Technical Datasheet

High Grade Machinable Type 316L Stainless Steel

Typical Applications
- Components/equipment in oil & gas
- Chemical/petrochemical plant equipment
- High performance electrical connectors
- Pump and valve components
- Low magnetic permeability equipment
- General engineering

Product Description
AMINOX-AS-1 is a closely controlled chemical composition 17% chromium / 12% nickel / 2 molybdenum Type 316L austenitic stainless steel. The alloy combines moderate mechanical strength with good resistance to corrosion in a wide range of media. Optimum service performance for the product is assured by the application, as standard, of a wide range of testing regimes including hardness, notch impact and intercrystalline corrosion testing. Control of microstructure is affected by measurement of ferrite content and grain size. Forged bar is ultrasonically tested to ASTM A388.

Corrosion Resistance
The low level of carbon in AMINOX-AS-1 reduces the likelihood of sensitisation during welding sometimes referred to as ‘weld decay’. Testing to establish freedom from any propensity to intercrystalline corrosion is performed to ASTM A262-a Practice E or DIN 50914 for 24 hours.

Material Specifications
- AMINOX-AS-1 (latest revision)
- EN 10088-3 1.4404 and 1.4401
- ASTM A479 and ASME SA79 S31603
- DIN 17440 1.4404 AD-Merkblatter W2
- DIN EN 10272
- ASTM A182 and ASME A182 S31603
- NORSOK M-630 MDS S01
- NACE MR01-75 / ISO 15156

Machining & Weldability
Stringent control of the chemical composition of AMINOX-AS-1 result in a consistent, highly machinable and readily weldable austenitic stainless steel.

Availability
Bar

Chemical Composition (weight %)

<table>
<thead>
<tr>
<th>Weight (%)</th>
<th>C</th>
<th>S</th>
<th>P</th>
<th>Si</th>
<th>Mn</th>
<th>Cr</th>
<th>Ni</th>
<th>Mo</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>0.015</td>
<td>0.015</td>
<td>0.045</td>
<td>0.40</td>
<td>2.0</td>
<td>16.5</td>
<td>10.0</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Max</td>
<td>0.030</td>
<td>0.020</td>
<td>0.045</td>
<td>0.40</td>
<td>2.0</td>
<td>18.5</td>
<td>13.0</td>
<td>2.5</td>
<td>0.10</td>
</tr>
</tbody>
</table>

Minimum Mechanical Properties (UNS S31800 - annealed)

<table>
<thead>
<tr>
<th>Diameter</th>
<th>&gt;160mm</th>
<th>≥515 &lt;700</th>
<th>&gt;35±160mm</th>
<th>≥515 &lt;700</th>
<th>≤35mm</th>
<th>≥515 &lt;900</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTS, MPa</td>
<td>205</td>
<td>35</td>
<td>40</td>
<td>205</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>0.2% PS, MPa</td>
<td>30</td>
<td>60 (transverse)</td>
<td>-</td>
<td>100 (longitudinal)</td>
<td>-</td>
<td>100 (longitudinal)</td>
</tr>
</tbody>
</table>

Technical Assistance
Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.