



# UNITED STATES WELDING CORPORATION

<p><b>USW ALLOY DESIGNATION AND DESCRIPTION</b></p>	<p><b>TURBALOY® 15-5</b>  <b>HQ-GRADE</b>  <b>GTAW SOLID BARE WELDING WIRE</b>  <b>IRON BASE</b></p>	<p>ISO 9001  AS 9100</p>	<p><b>DATA SHEET</b>   <b>5659</b></p>																																				
		<p>Revision A</p>																																					
<p><b>CROSS-REFERENCE CONFORMANCE SPECIFICATIONS</b></p>	<p>AMS 5659  UNS S15500  15-5 PH</p> <p>15Cr 4.5Ni 030 Cb 3.5 Cu  USWC 5659 (A)  See also AMS 5826 (VM grade).  Available in MC-GRADE</p>																																						
<p><b>METALLURGICAL BACKGROUND INFORMATION</b></p>	<p>TURBALOY® 15-5 undergoes a series of proprietary abrading and cleaning processes to remove all surface contaminants. These manufacturing processes ensure a consistent ultra-clean weld wire surface.</p> <p>TURBALOY® 15-5 is a martensitic, precipitation hardening stainless engineering alloy giving excellent strength and corrosion resistance. TURBALOY® 15-5 is used to weld alloys of similar composition. The alloy is ferrite free in order to produce adequate toughness.</p>																																						
<p><b>MATERIALS TO BE WELDED AND APPLICATIONS</b></p>	<p>AMS 5348, 5347, 5346, 5356, 5357, 5400, 5862, 5658, 5659.</p> <p>ASTM A564(XM-12),A693(XM-12),A705(XM-12).  No preheat required - non air hardening; ( Controlled low carbon composition )  May be used in place of 17-4PH (AMS 5825) when greater transverse toughness is required under conditions of high restraint.</p>																																						
<p><b>WIRE CHEMISTRY WT%</b></p>	<table> <tr> <td>Carbon</td> <td>-</td> <td>0.07</td> <td>Nickel</td> <td>3.50</td> <td>5.50</td> </tr> <tr> <td>Manganese</td> <td>-</td> <td>1.00</td> <td>Columbium</td> <td>5xC</td> <td>0.45</td> </tr> <tr> <td>Silicon</td> <td>-</td> <td>1.00</td> <td>Copper</td> <td>2.50</td> <td>4.50</td> </tr> <tr> <td>Sulfur</td> <td>-</td> <td>0.015</td> <td>Molybdenum</td> <td>-</td> <td>0.50</td> </tr> <tr> <td>Phosphorus</td> <td>-</td> <td>0.030</td> <td>Tantalum</td> <td>-</td> <td>0.05</td> </tr> <tr> <td>Chromium</td> <td>14.00</td> <td>15.50</td> <td>Iron</td> <td></td> <td>Balance</td> </tr> </table>			Carbon	-	0.07	Nickel	3.50	5.50	Manganese	-	1.00	Columbium	5xC	0.45	Silicon	-	1.00	Copper	2.50	4.50	Sulfur	-	0.015	Molybdenum	-	0.50	Phosphorus	-	0.030	Tantalum	-	0.05	Chromium	14.00	15.50	Iron		Balance
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<p><b>WELD PROPERTIES</b></p>	<p>Hardness of base metal:  Annealed 28HRC  Hardened 43HRC</p> <p>Density 7.8gm/cc</p>																																						
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<p><b>PACKAGING</b></p>	<p>Sealed polyethylene envelopes. (Desiccants optional)</p>																																						
<p>DFARS Compliant</p>		<p>www.usweldingcorp.com</p>																																					