



# UNITED STATES WELDING CORPORATION

<b>USW ALLOY DESIGNATION AND DESCRIPTION</b>	<b>TURBALOY® 420</b> HQ-GRADE GTAW SOLID BARE WELDING WIRE IRON BASE	<b>ISSUED</b> JANUARY 2007	<b>DATA SHEET</b>  <b>5621</b> (5)																																				
		<b>REVISION NO.</b> A																																					
<b>CROSS-REFERENCE CONFORMANCE SPECIFICATIONS</b>	AMS 5621 UNS S42000 USWC 5621 (A)  13Cr (0.30 - 0.40C) AWS A5.9 ER420 Fed QQ-S-763 Comp 420-A Alloy 51420																																						
<b>METALLURGICAL BACKGROUND INFORMATION</b>	<p>TURBALOY® 420 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® 420 is a hardened martensitic stainless engineering alloy used for welding base alloys of similar composition and for depositing hard, wear resisting repair patches.</p>																																						
<b>MATERIALS TO BE WELDED AND APPLICATIONS</b>	AMS 5621, 5506, 420SS, tool and die repair  Preheat 302-410°F, maintain interpass, immediate PWHT at 1350 - 1460°F for 6-8 hours, air cool. For non-critical repairs welds, ER309 filler can be used.																																						
<b>WIRE CHEMISTRY WT%</b>	<table border="0"> <tr> <td>Carbon</td> <td>0.30</td> <td>0.40</td> <td>Nickel</td> <td>-</td> <td>0.50</td> </tr> <tr> <td>Manganese</td> <td>-</td> <td>1.00</td> <td>Molybdenum</td> <td>-</td> <td>0.50</td> </tr> <tr> <td>Silicon</td> <td>-</td> <td>1.00</td> <td>Copper</td> <td>-</td> <td>0.50</td> </tr> <tr> <td>Sulfur</td> <td>-</td> <td>0.030</td> <td>Aluminum</td> <td>-</td> <td>0.05</td> </tr> <tr> <td>Phosphorus</td> <td>-</td> <td>0.040</td> <td>Tin</td> <td>-</td> <td>0.05</td> </tr> <tr> <td>Chromium</td> <td>12.00</td> <td>14.00</td> <td>Iron</td> <td></td> <td>Balance</td> </tr> </table>			Carbon	0.30	0.40	Nickel	-	0.50	Manganese	-	1.00	Molybdenum	-	0.50	Silicon	-	1.00	Copper	-	0.50	Sulfur	-	0.030	Aluminum	-	0.05	Phosphorus	-	0.040	Tin	-	0.05	Chromium	12.00	14.00	Iron		Balance
Carbon	0.30	0.40	Nickel	-	0.50																																		
Manganese	-	1.00	Molybdenum	-	0.50																																		
Silicon	-	1.00	Copper	-	0.50																																		
Sulfur	-	0.030	Aluminum	-	0.05																																		
Phosphorus	-	0.040	Tin	-	0.05																																		
Chromium	12.00	14.00	Iron		Balance																																		
<b>WELD PROPERTIES</b>	Soft condition hardness: 87 HRB Process annealed: 91 HRB Max temperature hardness: 53 HRC  Density: 7.7gm/cc																																						
<b>SIZES AND FORMS AVAILABLE</b>	<table border="0"> <tr> <td style="text-align: center;"><b>STRAIGHT LENGTHS</b></td> <td style="text-align: center;"><b>SPOOLED WIRE</b></td> </tr> <tr> <td>5 lb. (2.2kg) packs</td> <td>Precision layer wound, with controlled cast and helix</td> </tr> <tr> <td>36" (914mm) lengths</td> <td>12" (300mm) diameter spools standard</td> </tr> <tr> <td>Flag tagged for traceability.</td> <td>8" (200mm), 4" (100mm) and proprietary spool sizes</td> </tr> <tr> <td>(Double tagging and other lengths on request)</td> <td>on request.</td> </tr> <tr> <td>Wide range of diameters.</td> <td>Wide range of diameters and spool weights.</td> </tr> </table>			<b>STRAIGHT LENGTHS</b>	<b>SPOOLED WIRE</b>	5 lb. (2.2kg) packs	Precision layer wound, with controlled cast and helix	36" (914mm) lengths	12" (300mm) diameter spools standard	Flag tagged for traceability.	8" (200mm), 4" (100mm) and proprietary spool sizes	(Double tagging and other lengths on request)	on request.	Wide range of diameters.	Wide range of diameters and spool weights.																								
<b>STRAIGHT LENGTHS</b>	<b>SPOOLED WIRE</b>																																						
5 lb. (2.2kg) packs	Precision layer wound, with controlled cast and helix																																						
36" (914mm) lengths	12" (300mm) diameter spools standard																																						
Flag tagged for traceability.	8" (200mm), 4" (100mm) and proprietary spool sizes																																						
(Double tagging and other lengths on request)	on request.																																						
Wide range of diameters.	Wide range of diameters and spool weights.																																						
<b>PACKAGING</b>	Sealed polyethylene envelopes. (Desiccants optional)																																						

DISTRIBUTED BY:

3579 HIGHWAY 50 EAST # 104 □ CARSON CITY, NEVADA 89701-2826  
775/883-7878 □ 800/423-5964 □ FAX: 775/883-7776