



UNITED STATES WELDING CORPORATION

USW ALLOY DESIGNATION AND DESCRIPTION	TURBALOY® 312 HQ-GRADE GTAW SOLID BARE WELDING WIRE IRON BASE	ISSUED JANUARY 2007	DATA SHEET 5784 (18)																														
		REVISION NO. A																															
CROSS-REFERENCE CONFORMANCE SPECIFICATIONS	AMS 5784 UNS S64299 29-9 SS AWS A5.9 ER312 MSRR 9500/212 Also MSRR 9500/27 OMAT 3/163 A USWC 5784 (A) 																																
METALLURGICAL BACKGROUND INFORMATION	<p>TURBALOY® 312 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® 312 is an aerospace grade of the duplex 29-9 stainless steel alloy widely used for dissimilar metal welding of nickel alloys to stainless materials and to alloy steels. The alloy is not suitable for high temperature thermal cycling because excess ferrite can form sigma phase and embrittle the joint.</p>																																
MATERIALS TO BE WELDED AND APPLICATIONS	Nickel base alloys to steel in dissimilar combinations. Jethete, FV607 to Crown Max. GE-30 castings. ASTM A743. MSRR 9500/212 can be used to replace MSRR/27																																
WIRE CHEMISTRY WT%	<table border="0"> <tr> <td>Carbon</td> <td>0.08</td> <td>0.15</td> <td>Chromium</td> <td>27.00</td> <td>31.00</td> </tr> <tr> <td>Manganese</td> <td>1.00</td> <td>2.00</td> <td>Nickel</td> <td>8.5</td> <td>10.5</td> </tr> <tr> <td>Silicon</td> <td>-</td> <td>0.75</td> <td>Molybdenum</td> <td>-</td> <td>0.5</td> </tr> <tr> <td>Sulfur</td> <td>-</td> <td>0.03</td> <td>Copper</td> <td>-</td> <td>0.5</td> </tr> <tr> <td>Phosphorus</td> <td>-</td> <td>0.04</td> <td>Iron</td> <td></td> <td>Balance</td> </tr> </table>			Carbon	0.08	0.15	Chromium	27.00	31.00	Manganese	1.00	2.00	Nickel	8.5	10.5	Silicon	-	0.75	Molybdenum	-	0.5	Sulfur	-	0.03	Copper	-	0.5	Phosphorus	-	0.04	Iron		Balance
Carbon	0.08	0.15	Chromium	27.00	31.00																												
Manganese	1.00	2.00	Nickel	8.5	10.5																												
Silicon	-	0.75	Molybdenum	-	0.5																												
Sulfur	-	0.03	Copper	-	0.5																												
Phosphorus	-	0.04	Iron		Balance																												
WELD PROPERTIES	Hardness: 17HRC (as welded) Density 7.67 gm/cc Melting Point: 2650°F																																
SIZES AND FORMS AVAILABLE	<table border="0"> <tr> <td style="text-align: center;">STRAIGHT LENGTHS</td> <td style="text-align: center;">SPOOLED WIRE</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>			STRAIGHT LENGTHS	SPOOLED WIRE	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.																		
STRAIGHT LENGTHS	SPOOLED WIRE																																
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.																																
PACKAGING	Sealed polyethylene envelopes. (Desiccant optional)																																

DISTRIBUTED BY:

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