



UNITED STATES WELDING CORPORATION

<p align="center">USW ALLOY DESIGNATION AND DESCRIPTION</p>	<p align="center">TURBALOY® 802 HQ-GRADE GTAW SOLID BARE WELDING WIRE IRON BASE</p>	<p align="center">ISO 9001 AS 9100</p>	<p align="center">DATA SHEET 1680</p>																																				
<p align="center">CROSS-REFERENCE CONFORMANCE SPECIFICATIONS</p>	<p>USW 1680 AWS A5.28 ER80S-D2 BS 2901 Part 1 - A31 (Reference)</p> <p align="right">1.85 Mn .50 Mo 0.6 Si (0.07 - .12 C)</p>																																						
<p align="center">METALLURGICAL BACKGROUND INFORMATION</p>	<p>TURBALOY® 802 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® 802 is a 2Mn 0.5Mo versatile low alloy steel filler metal which is widely used to weld a range of high strength steels, giving tough, ductile joints. The high ductility and useful strength produced by TURBALOY® 802 is a beneficial feature when AISI 4*** grade steels are repair welded.</p>																																						
<p align="center">MATERIALS TO BE WELDED AND APPLICATIONS</p>	<p>Rocket motor casings in low alloy steels of the type Cr Mo C and Cr Mo. Used for ordnance and defense applications and general engineering applications. Multi-purpose filler metal for all grades of low alloy steel repair welds using GMAW and GTAW. Suitable for CO₂ gas shielding, although premium property values are obtained using GTAW process.</p>																																						
<p align="center">WIRE CHEMISTRY WT%</p>	<table border="0"> <tr> <td>Carbon</td> <td>0.07</td> <td>0.12</td> <td>Nickel</td> <td>-</td> <td>0.15</td> </tr> <tr> <td>Manganese</td> <td>1.60</td> <td>2.10</td> <td>Copper</td> <td>-</td> <td>0.50</td> </tr> <tr> <td>Silicon</td> <td>0.50</td> <td>0.80</td> <td>Other elements total</td> <td></td> <td>0.50 max</td> </tr> <tr> <td>Sulfur</td> <td>-</td> <td>0.015</td> <td>Iron</td> <td></td> <td>Balance</td> </tr> <tr> <td>Phosphorus</td> <td>-</td> <td>0.020</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Molybdenum</td> <td>0.40</td> <td>0.60</td> <td></td> <td></td> <td></td> </tr> </table>			Carbon	0.07	0.12	Nickel	-	0.15	Manganese	1.60	2.10	Copper	-	0.50	Silicon	0.50	0.80	Other elements total		0.50 max	Sulfur	-	0.015	Iron		Balance	Phosphorus	-	0.020				Molybdenum	0.40	0.60			
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<p align="center">WELD PROPERTIES</p>	<p>Minimum Tensile, as welded: 80 ksi Minimum Yield, as welded: 68 ksi</p> <p align="right">Density 7.82 gm/cc</p>																																						
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<p align="center">PACKAGING</p>	<p>Sealed, air-evacuated, argon purged Vapor Barrier envelopes with desiccants ensure full protection from atmospheric contamination and prolonged shelf-life.</p>																																						
<p>DFARS Compliant</p>		<p align="right">www.usweldingcorp.com</p>																																					