



# UNITED STATES WELDING CORPORATION

<p align="center"><b>USW ALLOY DESIGNATION AND DESCRIPTION</b></p>	<p align="center"><b>TURBALOY<sup>®</sup> 286VM</b> MC-GRADE <b>GTAW SOLID BARE WELDING WIRE</b> IRON BASE</p>	<p align="center">ISO 9001 AS 9100</p>	<p align="center"><b>DATA SHEET</b> <b>5805</b></p>																																																						
<p align="center"><b>CROSS-REFERENCE CONFORMANCE SPECIFICATIONS</b></p>	<table border="0"> <tr> <td>AMS 5805</td> <td>15Cr 25.5Ni 1.2Mo 2.1Ti 0.004B 0.30V</td> </tr> <tr> <td>MSRR 9500/234</td> <td>USWC 5805 (V)</td> </tr> <tr> <td>A286VM</td> <td>AISI 660</td> </tr> <tr> <td>UNS S66286</td> <td>Available in HQ-GRADE</td> </tr> <tr> <td>Tinidur</td> <td>(Note: AMS 5805 is used in preference to AMS 5804-9500/233)</td> </tr> </table>			AMS 5805	15Cr 25.5Ni 1.2Mo 2.1Ti 0.004B 0.30V	MSRR 9500/234	USWC 5805 (V)	A286VM	AISI 660	UNS S66286	Available in HQ-GRADE	Tinidur	(Note: AMS 5805 is used in preference to AMS 5804-9500/233)																																												
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<p align="center"><b>METALLURGICAL BACKGROUND INFORMATION</b></p>	<p>TURBALOY<sup>®</sup> 286VM is produced by vacuum induction melting and remelting techniques. The final wire is manufactured by special lubricant-free, roller-die forming followed by surface abrasion and cleaning processes.</p> <p>These manufacturing processes ensure consistent metallurgical integrity of the alloy with regard to control of trace elements and physical purity of the welding wire surface.</p> <p>TURBALOY<sup>®</sup> 286 VM is a precipitation hardening, austenitic stainless alloy used for high temperature strength and oxidation resistance. It is used to weld A286 base alloy on numerous turbine components including after-burners, turbine cases, wheels and blades, framework.</p>																																																								
<p align="center"><b>MATERIALS TO BE WELDED AND APPLICATIONS</b></p>	<p>AMS 5525, 5726, 5731, 5732, 5734, 5735, 5736, 5737, 5858, 5895. GE B50T12, B50T81, B50T1181, AISI 660. ASTM A638, PWA 1075, PWA 1092.</p> <p>Best results will be obtained when welding A286 in the solution treated condition. Ultra clean conditions and MC-GRADE wire help to reduce susceptibility to hot-crack formation.</p>																																																								
<p align="center"><b>WIRE CHEMISTRY WT%</b></p>	<table border="0"> <tr> <td>Carbon</td> <td>-</td> <td>0.04</td> <td>Cobalt</td> <td>-</td> <td>1.00</td> </tr> <tr> <td>Manganese</td> <td>-</td> <td>0.35</td> <td>Titanium</td> <td>1.90</td> <td>2.30</td> </tr> <tr> <td>Silicon</td> <td>-</td> <td>0.25</td> <td>Boron</td> <td>0.003</td> <td>0.005</td> </tr> <tr> <td>Sulfur</td> <td>-</td> <td>0.005</td> <td>Vanadium</td> <td>0.10</td> <td>0.50</td> </tr> <tr> <td>Phosphorus</td> <td>-</td> <td>0.01</td> <td>Aluminum</td> <td>-</td> <td>0.35</td> </tr> <tr> <td>Chromium</td> <td>13.50</td> <td>16.00</td> <td>Oxygen</td> <td>-</td> <td>0.005 (50ppm)</td> </tr> <tr> <td>Nickel</td> <td>24.00</td> <td>27.00</td> <td>Nitrogen</td> <td>-</td> <td>0.005 (50ppm)</td> </tr> <tr> <td>Molybdenum</td> <td>1.00</td> <td>1.50</td> <td>Hydrogen</td> <td>-</td> <td>0.0005 (5ppm)</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Iron</td> <td></td> <td>Balance</td> </tr> </table>			Carbon	-	0.04	Cobalt	-	1.00	Manganese	-	0.35	Titanium	1.90	2.30	Silicon	-	0.25	Boron	0.003	0.005	Sulfur	-	0.005	Vanadium	0.10	0.50	Phosphorus	-	0.01	Aluminum	-	0.35	Chromium	13.50	16.00	Oxygen	-	0.005 (50ppm)	Nickel	24.00	27.00	Nitrogen	-	0.005 (50ppm)	Molybdenum	1.00	1.50	Hydrogen	-	0.0005 (5ppm)				Iron		Balance
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<p align="center"><b>WELD PROPERTIES</b></p>	<p>Melting range: 2500°F - 2600°F Hardness: aged 28 HRC</p> <p align="right">Density: 7.9 gm/cc</p>																																																								
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DFARS Compliant

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