



# UNITED STATES WELDING CORPORATION

<b>USW ALLOY DESIGNATION AND DESCRIPTION</b>	<b>TURBALOY<sup>®</sup> 17-22</b> MC-GRADE GTAW SOLID BARE WELDING WIRE IRON BASE		<b>ISSUED</b> JANUARY 2007		<b>DATA SHEET</b>  <b>6458</b> (16)	
			REVISION NO. A			
<b>CROSS-REFERENCE CONFORMANCE SPECIFICATIONS</b>	AMS 6458 UNS K23015 17-22 (A) S USWC 6458 (V)		0.65Si 1.25Cr 0.5Mo 0.3V (0.28 - 0.33C) Non copper coated MIL-R-5632 Type VII Available in HQ-GRADE			
<b>METALLURGICAL BACKGROUND INFORMATION</b>	<p>TURBALOY<sup>®</sup> 17-22 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 the regard to control of trace elements and physical purity of the welding wire surface.</p> <p>17-22 is a high strength low alloy steel which is used for structural parts operating up to 800°F. TURBALOY<sup>®</sup> 17-22 is a matching filler metal for fabricating components of similar composition. The controlled level of impurities promotes improved toughness and reproducible high quality weldments. Ultra clean weldment preparation is beneficial for critical work.</p>					
<b>MATERIALS TO BE WELDED AND APPLICATIONS</b>	<p>AMS 6304, 6305, 6302, 6385, 17-22AS, 17-22AV, 6414 PWA 749, 768. AMS 6303, 6436 Turbine knife edge seal repair. Steam gas turbine structures and castings, aircraft brake units, compressor discs, Military equipment, missiles, rocket motor cases.</p> <p>Use ultra clean weldment preparation. Refer to PH &amp; PWHT chart.</p>					
<b>WIRE CHEMISTRY WT%</b>	Carbon	0.28	0.33	Molybdenum	0.40	0.60
	Manganese	0.45	0.65	Copper	-	0.35
	Silicon	0.55	0.75	Vanadium	0.20	0.40
	Sulfur	-	0.008	Oxygen	-	0.0025 (25ppm)
	Phosphorus	-	0.008	Nitrogen	-	0.005 (50ppm)
	Chromium	1.15	1.35	Hydrogen	-	0.0025 (25ppm)
	Nickel	-	0.25	Iron	-	Balance
<b>WELD PROPERTIES</b>	CVN : 20.7 ft. lbs at 0°F, 70% shear (Minimum specification requirement: 15 ft lbs)					
<b>SIZES AND FORMS AVAILABLE</b>	STRAIGHT LENGTHS			SPOOLED WIRE		
	5lb. (2.2kg) packs. 36" (914mm) lengths Flag tagged for traceability. (Double tagging and other lengths on request) Wide range of diameters.			Precision layer wound with controlled cast and helix. 12" (300mm) diameter spools standard. 8" (200mm), 4" (100mm) and proprietary spool sizes on request. Wide range of diameters and spool weights.		
<b>PACKAGING</b>	Sealed, air-evacuated, argon purged Vapor Barrier envelopes with desiccants ensure full protection from atmospheric contamination and prolonged shelf-life.					

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