



UNITED STATES WELDING CORPORATION

USW ALLOY DESIGNATION AND DESCRIPTION	TURBALOY HT (HY-TUF) MC-GRADE GTAW SOLID BARE WELDING WIRE IRON BASE		ISSUED JANUARY 2012		DATA SHEET 6453 (13)	
			REVISION NO. A			
CROSS-REFERENCE CONFORMANCE SPECIFICATIONS	AMS 6418 (BAR, PLATE) AMS 6453		1.5Si 1.3Mn 0.35Cr 1.8Ni 0.4Mo 0.25C UNS K32550			
METALLURGICAL BACKGROUND INFORMATION	<p>TURBALOY® HY-TUF 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. 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® HY-TUF this alloy is a through hardening steel with good ductility and high impact strength and hardness at the 220, to 240K psi tensile strength level.</p>					
MATERIALS TO BE WELDED AND APPLICATIONS	Used in applications involving heavy components requiring such properties, e.g. aircraft landing gear and airframe components, earth moving equipment, gear repair, hoisting equipment, ect...					
WIRE CHEMISTRY WT%	Carbon	0.23	0.28	Nickel	1.65	2.00
	Manganese	1.20	1.50	Molybdenum	0.35	0.45
	Silicon	1.30	1.70	Copper	-	0.35
	Sulfur	-	0.010	Oxygen	-	0.005 (50 ppm)
	Phosphorus	-	0.008	Nitrogen	-	0.040 (400 ppm)
	Chromium	0.00	0.40	Hydrogen	-	0.001 (10 ppm)
WELD PROPERTIES	Tensile 230 ksi Elongation 5 % R.A. 27 %					
SIZES AND FORMS AVAILABLE	STRAIGHT LENGTHS			SPOOLED WIRE		
	5 lb. (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.		
PACKAGING	Sealed, air-evacuated, argon purged Vapor Barrier envelopes with desiccants ensure full protection from atmospheric contamination and prolonged shelf-life.					
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