UNITED STATES WELDING CORPORATION

USW ALLOY DESIGNATION AND DESCRIPTION	**TURBALOY® 13-8 Mo** **HQ-GRADE** **GTAW SOLID BARE WELDING WIRE** **IRON BASE**	**ISSUED** JANUARY 2007 REVISION NO. A	**DATA SHEET** 5840 (32)

CROSS-REFERENCE CONFORMANCE SPECIFICATIONS

AMS 5840
UNS S13889
PH13 - 8 Mo

USWC 5840 (A)
13Cr 8Ni 2.3Mo 1.1A1
(XM - 13)
Available in MC-GRADE

METALLURGICAL BACKGROUND INFORMATION

TURBALOY® 13-8 wire is manufactured by special lubricant-free, roller-die forming followed by surface abrasion and cleaning processes.
This manufacturing route ensures consistent metallurgical integrity of the alloy with regard to control of trace elements and physical purity of the welding wire surface.

TURBALOY® 13-8 is a martensitic, precipitation hardening stainless engineering alloy giving high strength and corrosion resistance. The high purity and controlled composition of this filler metal enables matching base alloys to be welded under more restraint and in thicker cross section and still obtain good transverse toughness. Low carbon minimizes grain boundary carbide formation.

MATERIALS TO BE WELDED AND APPLICATIONS

ASTM A564, A693, A705, (XM - 13 grade). UNS 13800
UNS S13800, PH13 - 8 Mo.
AMS629, 5412, 5864.

Aircraft components and fittings. Can be used as-welded: PWHT will optimize properties.
The aluminum content needs to be carefully protected by using adequate pure argon gas shielding.

WIRE CHEMISTRY WT%

Carbon	-	0.05	Molybdenum	2.00	2.50	
Manganese	-	0.10	Aluminum	0.90	1.35	
Silicon	-	0.10	Nitrogen	-	0.01	(100ppm)
Sulfur	-	0.010	Oxygen	-	0.005	(50ppm)
Phosphorus	-	0.008	Hydrogen	-	0.0025	(25ppm)
Chromium	12.25	13.25	Iron		Balance	
Nickel	7.50	8.50				

WELD PROPERTIES

Peak hardness of base metal: 500 HV
Solution treated material: 300HV

Density: 7.82gm/cc

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 e nvelopes with desiccants ensure full protection from atmospheric contamination and prolonged shelf-life.

DISTRIBUTED BY:

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