



Quality Management System
in accordance with
ISO 9001:2000
Cert # 05-R0925

4140 Chrome-Moly Electrode

U.S. ALLOY CO.
dba Washington Alloy
7010-G Reames Rd.
Charlotte, NC 28216
www.weldingwire.com



ALLOY DESCRIPTION AND APPLICATION:

4140 is designed for welding and build up on mild & low alloy steels having a smooth stable arc transfer, spatter free, excellent bead contour, with a high deposition rate. Formulated for typical use on dies, forgings, castings and other base metals where heat treating or flame hardening is required. Preheat and interpass of 500-650° F is found on AISI 4140 grades of base metal followed by slow cool and post weld heat treating to required hardness. Small stringer beads with light peening while still hot (immediately after each bead) will help ensure less stress built-up.

Base Metal Manufacturer may also have recommendations on heat treatment procedures.

TYPICAL WELDING PROCEDURES; DCEP

Diameter	Amps (Flat)	Volts
3/32"	60-100	23-27
1/8"	80-150	24-28
5/32"	110-200	25-31

Procedures may vary with change in position, base metals, filler metals, equipment and other changes.

Hardness as welded RC 38-44 may be heat treated to about RC 58

TYPICAL WELD METAL CHEMISTRY (%) & PROPERTIES

Carbon	0.30-0.43	PWHT; Fully annealed, welded, post weld heat treated oil quenched		
Manganese	.75-1.0	@ 1600°F and tempered at	1150°F	950°F
Silicon	0.15-0.60	Tensile Strength (ksi)	140	180
Phosphorus	0.035 max.	Yield Strength (ksi)	127	165
Sulphur	0.040 max.	Elongation in 2" (%)	18%	16%
Chromium	0.5-1.0	Reduction of Area (%)	32%	36%
Molybdenum	0.15-0.45			

AVAILABLE SIZES: TE 4140= 1/8", 5/32"

Other sizes may be available – please inquire

SPECIFICATIONS: INTERNAL

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