

# DUAL SHIELD II 80-Ni1H4

AWS A5.20: E81T1-Ni1MJDH4

## FEATURES

Dual Shield II 80-Ni1H4 produces diffusible Hydrogen levels of <4mL/100g over a wide range of welding parameters. Applications include petrochemical equipment, bridge fabrication, offshore oil construction, ship fabrication railcar, and heavy machinery.

## CLASSIFICATIONS AND APPROVALS

- Seismic D
- AWS A5.29: E81T1-Ni1MJDH4
- ASME SFA 5.29
- CERTIFIED BY C.W.B.- AWS A5.29
- A.B.S.- 3YSA(H5)
- MIL-E-24403/1: MIL-81T1-Ni1M
- D.N.V.- IV YMS(H5)
- L.R.- 4Y40S(H10)
- BV
- TUV

## WELDING PROCESS

- FCAW (Flux Core)

## INDUSTRIES

- Rail Road Car
- Mobile Machinery
- General Fabrication
- Civil Construction
- Bridge Construction
- Shipbuilding

## TYPICAL MECHANICAL PROPERTIES

As Welded 75% Ar / 25% CO <sub>2</sub>	
Yield Strength	79 ksi, 545 MPa
Tensile Strength	89 ksi, 615 MPa
Reduction in Area	71%
Elongation in 2"	28%
Stress Relieved 2 hrs. @ 1150°F (620°C)	
75% Ar / 25% CO <sub>2</sub>	
Yield Strength	73 ksi, 505 MPa
Tensile Strength	84 ksi, 570 MPa
Reduction in Area	71%
Elongation in 2"	28%

## CHARPY V-NOTCH PROPERTIES

Testing Temperature -20°F (-29°C)	
As Welded 75% Ar / 25% CO <sub>2</sub>	
	100 ft-lb, 149 J
Stress Relieved 2 hrs. @ 1150°F (620°C)	
75% Ar / 25% CO <sub>2</sub>	
	90 ft-lb, 122 J
Testing Temperature -40°F (-40°C)	
As Welded 75% Ar / 25% CO <sub>2</sub>	
	84 ft-lb, 114 J
Stress Relieved 2 hrs. @ 1150°F (620°C)	
75% Ar / 25% CO <sub>2</sub>	
	50 ft-lb, 68 J

## WELD METAL ANALYSIS

75% Ar / 25% CO <sub>2</sub>	
C	0.05%
Mn	1.20%
Si	0.32%
P	0.014%
S	0.009%
Ni	0.93%

**DUAL SHIELD II 80-Ni1H4** continued**DEPOSITION TABLE - 75% Ar / 25% C0<sup>2</sup>**

Diameter in (mm)	Amps	Volts	Wire Feed Speed ipm (cm/min)	Deposition lb/hr (kg/hr)	Efficiency %
.045 (1.2)	150	28	200 (508)	4.2 (1.91)	86
	210	29	300 (762)	6.3 (2.86)	86
	250	30	400 (1016)	8.5 (3.86)	87
	290	33	500 (1270)	10.7 (4.85)	87
.052 (1.4)	155	25	150, (381)	4.4 (2)	87
	245	28	250, (635)	7.3 (3.31)	86
	310	33	350, (889)	10.2 (4.63)	85
	360	36	450 (1143)	13.3 (6.03)	85
1/16 (1.6)	190	27	150 (38)	6.1 (2.77)	87
	300	30	250 (635)	10.2 (4.63)	87
	365	33	300 (762)	12.3 (5.58)	86
	410	33	350 (889)	14 (6.35)	88
5/64 (2.0)	250	26	112 (284)	6.4 (2.9)	85
	350	28	176 (447)	10.5 (4.76)	85
	450	31	258 (655)	14.8 (6.71)	85



# DUAL SHIELD II 80-Ni1H4 continued

FULL RANGE WELDING PARAMETERS							
Gas: 75/25 .045"				Gas: 75/25 .052"			
WFS ipm	Volts	Amps	Tip to Work in	WFS ipm	Volts	Amps	Tip to Work in
150-260	22-26	130-200	3/8-1/2	110-230	22-26	135-250	1/2-5/8
260-380	24-27	200-225	1/2-3/4	230-340	25-29	250-295	5/8-3/4
380-520	27-29	225-265	3/4-1	340-470	27-31	295-355	3/4-1

FULL RANGE WELDING PARAMETERS			
Gas: 75/25 1/16"			
WFS ipm	Volts	Amps	Tip to Work in
110-200	24-28	185-285	5/8-3/4
200-300	27-30	285-340	3/4-1
300-420	28-32	340-400	1-1 <sup>1/4</sup>

PART NUMBER / PRODUCT INFORMATION		
Part Number	Description	UPC
245011119	DS II 80-Ni1H4 045X33#PSP	662303058913
245011127	DS II 80-Ni1H4 052X33#PSP	662303058920
245011135	DS II 80-Ni1H4 1/16X33#PSP	662303058937
245011234	DS II 80-Ni1H4 1/16X33#PSP VP	662303058951
245011630	DS II 80-Ni1H4 1/16X60#CL	662303058890
245011671	DS II 80-Ni1H4 1/16X600#OMP	662303082987