

Dual Shield Prime 81Ni1M H4

A seamless, copper free, cored wire designed to weld thick steel components. The diffusible hydrogen level is consistently below 4mL/100g of deposited weld metal and with the seam of the wire being laser welded this ensures no moisture pick up. The wire is not copper coated, which means there is no chance of copper flakes contaminating feed liners, torches and contact tips. Dual Shield Prime 81Ni1M H4 is designed to weld high strength steels (>500 MPa, >72 ksi yield strength) and provides excellent impact toughness down to -60° C (-76° F). Dual Shield Prime 81Ni1M H4 is designed to be used with Ar/CO₂ (M21) shielding gas mixtures.

Classifications Weld Metal	SFA/AWS A5.29 : E81T1-Ni1M H4 EN ISO 17632-B : T555T1-1M21A-N2-U-H5 EN ISO 17632-A : T 50 6 1Ni P M21 1 H5
Approvals	ABS 5YQ460SA H5 BV SA5Y46 H5 CE EN 13479 DNV-GL V Y46MS(H5) LR 5Y46S H5 RS 5Y46S H5

Approvals are based on factory location. Please contact ESAB for more information.

Welding Current	DC+
Diffusible Hydrogen	< 4 ml/100g
Alloy Type	C Mn Ni
Shielding Gas	M21 (EN ISO 14175)

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
M21 Shielding gas			
As Welded	533 MPa (77 ksi)	587 MPa (85 ksi)	28 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
M21 shielding gas		
As Welded	-40 °C (-40 °F)	110 J (81 ft-lb)
As Welded	-60 °C (-76 °F)	75 J (56 ft-lb)
M21 Shielding gas		
As Welded	-40 °C (-40 °F)	110 J (81 ft-lb)
As Welded	-60 °C (-76 °F)	75 J (56 ft-lb)

Typical Weld Metal Analysis %

C	Mn	Si	Ni
0.03	1.34	0.29	0.96

Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate
1.2 mm (0.045 in.)	170-310 A	23-35 V	6.0-16.5 m/min (236-650 in./min)	2.5-6.2 kg/h (5.5-13. lb/h)
1.6 mm (1/16 in.)	180-420 A	24-38 V	3.0-13.0 m/min (118-512 in./min)	1.8-7.5 kg/h (4.0-16. lb/h)