

Dual Shield II 101H4M

Dual Shield II 101H4M is one of a series of low hydrogen flux cored electrodes introduced by ESAB. Each of the new Dual Shield II H4 wires is an all-position flux cored electrode that provides excellent low temperature toughness in both the as welded and/or stress relieved conditions (as applicable) when used with 75% Ar /25% CO₂. Each can produce diffusible hydrogen levels of < 4mL/100g deposited over a wide range of welding parameters. Dual Shield II 101H4M is especially designed to weld HY-80 and HSLA-100 steels typically used in shipbuilding. Suitable for single or multi-pass welding applications. This wire was developed to meet the stringent requirements of MIL-E-24403/2 and offshore welding, and it is an ideal choice for HSLA steels.

Specifications

Classifications	ASME SFA 5.36 ASME SFA 5.29 AWS A5.36 : E91T-M21A6-K2H4 AWS A5.29 : E91T1-GM-H4
Approvals	ABS QPL-24403/2 : MIL-101TM
Industry	Ship/Barge Building Pipeline Mobile Equipment Industrial and General Fabrication

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

Tensile Properties

Testing Condition	Conditional Statement	Yield Strength	Tensile Strength	Elongation	Reduction in Area
75% Ar - 25% CO₂					
As Welded	AWS A5.29 Requirement	640 MPa	705 MPa	23 %	67 %
As Welded	MIL-E-24403/2 Vertical-Up HY-80 Base Plate	598 MPa	680 MPa	27 %	68 %

Charpy Testing

Testing Condition	Testing Temp	Impact Value
75% Ar - 25% CO₂		
As Welded	-18 °C	95 J
As Welded	-50 °C	66 J

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni
75% Ar - 25% CO₂					
0.059	1.37	0.36	0.010	0.012	2.09

Deposition Data

Diameter	Amps	Volts	Wire Feed Speed	Efficiency (Per)	Deposition Type	TTW Dist	Deposition Rate
1.6 mm	365 A	33 V	762 cm/min	86 %			5.6 kg/h
1.4 mm	135-250 A	22-26 V	279-584 cm/min		Full Range	12.7-16 mm	
1.6 mm	285-340 A	27-30 V	508-762 cm/min		Full Range	19-25.4 mm	
1.4 mm	310 A	33 V	889 cm/min	85 %			4.6 kg/h
1.2 mm	290 A	33 V	1270 cm/min	87 %			4.8 kg/h
1.2 mm	210 A	29 V	762 cm/min	86 %			2.8 kg/h
1.6 mm	185-285 A	24-28 V	279-508 cm/min		Full Range	16-19 mm	
1.2 mm	150 A	28 V	508 cm/min	86 %			1.9 kg/h
1.6 mm	190 A	27 V	38 cm/min	87 %			2.8 kg/h

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1.6 mm	340-400 A	28-32 V	762-1067 cm /min		Full Range	25.4-31.75 mm	
1.4 mm	295-355 A	27-31 V	864-1194 cm /min		Full Range	19-25.4 mm	
1.4 mm	360 A	36 V	1143 cm/min	85 %			6.0 kg/h
1.6 mm	300 A	30 V	35 cm/min	87 %			4.6 kg/h
1.4 mm	155 A	25 V	381 cm/min	87 %			2.0 kg/h
1.4 mm	245 A	28 V	635 cm/min	86 %			3.3 kg/h
1.2 mm	200-225 A	24-27 V	660-965 cm/min		Full Range	12.7-19 mm	
1.6 mm	410 A	33 V	889 cm/min	88 %			6.4 kg/h
1.2 mm	130-200 A	22-26 V	381-660 cm/min		Full Range	9.5-12.7 mm	
1.2 mm	225-265 A	27-29 V	965-1321 cm /min		Full Range	19-25.4 mm	
1.4 mm	250-295 A	25-29 V	584-864 cm/min		Full Range	16-19 mm	
1.2 mm	250 A	30 V	1016 cm/min	87 %			3.9 kg/h
75% Ar - 25% CO2							
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