

ALUMINUM

MIG WIRES / TIG RODS (GMAW/GTAW)

ALMIGWELD 5183

Alloy 5183 was originally developed in 1957 to provide the highest strengths possible in the as-welded condition of Alloy 5083 and other similar high Magnesium Alloys. The more common filler Alloy 5356, will typically fail to meet the as-welded tensile Specification Requirements of Alloy 5083. The Alloy is typically utilized in Marine and Structural applications where high strengths, high fracture toughness for Impact resistance, and exposure to corrosive elements are important. The Alloy is not recommended for elevated temperature applications due to its susceptibility to stress corrosion cracking.

Specifications	
Classifications	ANSI/AWS A5.10 : (ER & R)
Approvals	ABS BV CE ClassNK CWB DB : 61.002.03 DNV KR LR : WC1/I-3 S RINA : WC(*) VdTÜV

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

Alloy Type	Aluminum
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Typical Tensile Properties			
Condition	Yield Strength	Tensile Strength	Elongation
Base Alloy 7039-T64			
As Welded	179 MPa (26 ksi)	310 MPa (45 ksi)	12 %
5083			
Base Alloy	145 MPa (21 ksi)	290 MPa (42 ksi)	22 %
7039-T61			
Base Alloy	345 MPa (50 ksi)	414 MPa (60 ksi)	14 %
7039-T64			
Base Alloy	379 MPa (55 ksi)	448 MPa (65 ksi)	13 %
Base Alloy 5083-0			
As Welded	124 MPa (18 ksi)	276 MPa (40 ksi)	16 %
Base Alloy 7039-T61			
As Welded	221 MPa (32 ksi)	324 MPa (47 ksi)	14 %

Typical Wire Composition %							
Mn	Si	Cr	Cu	Ti	Zn	Fe	Mg
0.65	0.04	0.08	0.01	0.100	0.01	0.13	4.9

Recommended Welding Parameters		
Current	Wire Diameter	Voltage
60-170 A	0.8 mm (0.030 in.)	13-24 V
100-130 A	0.8 mm (0.030 in.)	18-22 V
125-150 A	0.8 mm (0.030 in.)	20-24 V
125-150 A	0.9 mm (0.035 in.)	20-24 V
85-120 A	0.9 mm (0.035 in.)	20-23 V
170-190 A	0.9 mm (0.035 in.)	21-26 V
140-300 A	1.2 mm (0.047 in.)	20-29 V
190-350 A	1.6 mm (1/16 in.)	25-30 V

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Recommended Welding Parameters		
Current	Wire Diameter	Voltage
280-400 A	2.4 mm (3/32 in.)	26-31 V
280-360 A	2.4 mm (3/32 in.)	26-30 V
300-400 A	2.4 mm (3/32 in.)	26-32 V