



Solid wire for the GMAW of Al-Mg, Al-Mg-Mn alloys up to 5% Mg. These Aluminium alloys having a high tensile and corrosion strength, are suitable to use in shipbuilding, railway and automotive industry, cryogenic tanks and pressure vessel fabrication. To be used with Ar, He, pure and mixed shielding gases.

Standards: **EN ISO 18273:16** **AWS A5.10:21**
Classification: **S Al 5183 (AlMg4,5Mn0,7(A))** **ER 5183**

CHEMICAL COMPOSITION OF THE WIRE (wt.-%)

elements	Sidergas Aluminium		EN ISO		AWS	
	min.	max.	min.	max.	min.	max.
Si	-	0,10	-	0,40	-	0,40
Fe	-	0,20	-	0,40	-	0,40
Cu	-	0,05	-	0,10	-	0,10
Mn	0,50	0,80	0,50	1,00	0,50	1,00
Mg	4,30	5,20	4,30	5,20	4,30	5,20
Cr	0,05	0,20	0,05	0,25	0,05	0,25
Zn	-	0,05	-	0,25	-	0,25
Ti	-	0,15	-	0,15	-	0,15
Be	-	0,0003	-	0,0003	-	0,0003
other each	-	0,05	-	0,05	-	0,05
other total	-	0,15	-	0,15	-	0,15
Al	rem.		rem.		rem.	

MECHANICAL PROPERTIES OF ALL-WELD METAL

	Sidergas Aluminium	EN ISO	AWS
	typical values (*)	minimum values	minimum values
Tensile strength (Rm)	300 [MPa]	mechanical properties of the weld metal are not part of the classification	mechanical properties of the weld metal are not part of the classification
Yield strength (Rp0,2)	125 [MPa]		
Elongation (A%)	17 (L ₀ =5d ₀)		

(*) Typical values are referred to EN ISO 14175 I1 (100% Ar); base material 5083 O; welding position PA; preheating T -; Interpass T 85°C; as-welded condition. Tensile test acc. to EN ISO 4136; Charpy impact test acc. to EN ISO 9016. Text results should not be assumed to be expected results in a particular application or weldment.

PHYSICAL PROPERTIES

	Sidergas Aluminium
	typical values
Melting range (solidus-liquidus)	575 - 638 [°C]
Density	2.660 [kg/m ³]

PRODUCT APPROVALS

	CWB	BV	DNV GL	CCS	NKK	Vd-TÜV	DB	KR	LR	RINA	ABS	CE
SHIELDING GASES: (EN ISO 14175)	-	I1	-	I1	I1	I1-I3				I1		according to EN 13479:17 and Regulation UE n. 305/2011
GRADE:	-	WC	5183	WC	EN AW-5083	22.3-4 23.1-2 (ISO 15608)	EN AW-5083 EN AW-7020 EN (573)	WC G	BF WC/I-3S/1S	EN AW-5086		
DIAMETERS:	1.0-1.6mm		0.8-1.6mm		< 1.6	1.0-1.6 mm				0.8-1.6mm		
WELDING POSITIONS:	-	PA,PB,PC,PD,PE,PF				PA,PB,PC,PF		PA,PB,PC,PD,PE,PF				

OPERATING DATA

welding positions (*):

PA, PB, PC, PD,
PE, PF

type of current and polarity:



D.C. +

(*) according to EN ISO 6947:20

Thicker plate materials require preheating to 150°C. Thorough cleaning of the workpiece bevels is necessary

BASE MATERIALS

The alloy is not recommended for elevated temperature applications (> 65 °C) due to its susceptibility to stress corrosion cracking. The alloy is not-heat treatable.

EN 573-3:19: AlMg4,5Mn (5083); AlMg3 (5754); AlMg5 (5019); AlMg4 (5086); AlMg2Mn0,8 (5049); AlMg3,5Cr (5654); AlZn4,5Mg1 (7020); AlMgSi (6060); AlSi1MgMn (6082). G-AlMg10; G-AlMg5; G-AlMg3Si; G-AlMg5Si.

TECHNICAL DELIVERY CONDITIONS

The technical delivery conditions (type of product, dimensions, tolerance and marking) are in accordance with EN 544:18 and EN ISO 14344:10.

PACKAGING AND AVAILABLE SIZES

mm.	D-100 (0.45 kg)	D-200 (2.0kg)	D-300 (7.0 kg)	KS-300 (7.0kg)	K-415 (10 kg)	D-355 (18kg)	KS-400 (40kg)	MINIPAC60 (60 kg)	DRUM280 (80kg)	SUPERPAC550 (173 kg)	MASTERPAC 1200 (400 kg)
0.80	X	X	X (6.0 kg.)	X (6.0 kg.)	-	-	-	-	-	-	-
1.00	X	X	X	X	-	-	-	X	X	X	X
1.20	X	X	X	X	-	X	X	X	X	X	X
1.60	-	X	X	X	X	X	X	X	X	X	X
2.00	-	-	X	X	X	X	X	X	-	X	X
2.40	-	-	X	X	X	X	X	X	-	X	X
3.17	-	-	X	-	X	X	X	-	-	-	X

Other sizes and packaging available upon request