



Certified Quality System

GMAW welding wire  
for mild steels

# SIDERGAS S3

Copper coated solid wire for the GMAW of mild steels under both Ar/CO<sub>2</sub> mixed gas and pure CO<sub>2</sub> shielding gas. It is used in general construction, pressure vessel fabrication and shipbuilding.

Standards: **EN ISO 14341-A:11(\*)** **AWS A5.18:05** **CSA W48:14**  
 Classification: **G 42 4 M21 2Si/ G 42 4 C1 2Si** **ER70S-3** **B-G 49A 2 C1 S3**

(\*) Wire electrode classified to the system based upon the yield strength and the average impact energy of 47 J of all-weld metal in accordance with EN ISO 14341:11

## CHEMICAL COMPOSITION OF THE WIRE (wt.-%)

elements	Sidergas		EN ISO		AWS		CSA	
	min.	max.	min.	max.	min.	max.	min.	max.
C	0,06	0,09	0,06	0,14	0,06	0,15	0,06	0,14
Mn	1,00	1,30	0,90	1,30	0,90	1,40	0,90	1,30
Si	0,50	0,70	0,50	0,80	0,45	0,75	0,50	0,80
P	-	0,02	-	0,025	-	0,025	-	0,025
S	-	0,02	-	0,025	-	0,035	-	0,025
Cu	-	0,30	-	0,35	-	0,50	-	0,35
Mo	-	0,10	-	0,15	-	0,15	-	0,15
Ni	-	0,10	-	0,15	-	0,15	-	0,15
Ti+Zr	-	0,03	-	0,15	-	-	-	0,15
Al	-	0,02	-	0,02	-	-	-	0,02
Cr	-	0,15	-	0,15	-	0,15	-	0,15
V	-	0,015	-	0,03	-	0,03	-	0,03

## MECHANICAL PROPERTIES OF ALL-WELD METAL

	Sidergas	EN ISO	AWS	CSA
	typical values (*)	minimum values	minimum values	-
Tensile strength (Rm)	540 [MPa]	500 [MPa]	480 [MPa]	500 [MPa]
Yield strength (Rp0,2)	440 [MPa]	420 [MPa]	400 [MPa]	420 [MPa]
Elongation (A%)	30 (L <sub>0</sub> =5d <sub>0</sub> )	20 (L <sub>0</sub> =5d <sub>0</sub> )	22 (L <sub>0</sub> =2")	20 (L <sub>0</sub> =5d <sub>0</sub> )
Impact work (ISO-V KV)	80 [J] @ -20°C	47 [J]	27 [J]	47 [J]
	60 [J] @ -40°C	@ -40°C C1/M21	@ -29°C	@ -20°C C1

(\*) Typical values are referred to EN ISO 14175 C1 (CO<sub>2</sub>) as shielding gas, in the as-welded condition using an all-weld metal test assembly type 1.3 in accordance with EN ISO 15792-1:12, using a 1,20 mm diameter wire electrode under welding conditions specified in § 5.1 and 5.2 of EN ISO 14341:11. Test results should not be assumed to be expected results in a particular application or weldment.

## PRODUCT APPROVALS

		<b>CE</b>
SHIELDING GASES (EN ISO 14175):	C1	(according to EN 13479:04 and Regulation (UE) No. 305/2011)
GRADING:	-	

## OPERATING DATA

welding positions: PB, PC, PD, E, PF, PG type of current and polarity: D.C. +

## BASE MATERIALS

Suitable for steels with yield strength of up to 420 MPa.

Non alloy structural steels:

EN 10025-2 up to S355

Steels for pressure purposes:

EN 10028-2 up to P355GH

EN 10028-3 up to P355NH

Fine grain structural steels:

EN 10025-3 up to S420NL

EN 10025-4 up to S420ML

Steels for pipelines:

EN ISO 3183 up to L415M/N L360QB; API5L up to X60

EN 10217-1 up to P355N

EN 10216-1 up to P275T1

## TECHNICAL DELIVERY CONDITIONS

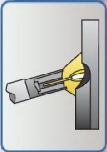
The technical delivery conditions (type of product, dimensions, tolerance and marking) are in accordance with EN ISO 544:11 and EN ISO 14344:10.

## PACKAGING AND AVAILABLE SIZES

mm	in	D-100 plastic	D-200 plastic	D-300 plastic	K-300 wire basket	KS-300 wire basket	FUSTO 280	MIDIPAC 150/300	SUPERPAC 450/550	MASTERPAC 1200
0.80	.030	X	X	X	X	X	X	X	X	
0.90	.035	X	X	X	X	X	X	X	X	
1.00	.040	X	X	X	X	X	X	X	X	
1.14	.045	X	X	X	X	X	X	X	X	
1.20			X	X	X	X	X	X	X	X
1.30	.052			X	X	X	X	X	X	X
1.40	.055			X	X	X	X	X	X	X
1.60	1/16			X	X	X	X	X	X	X

Sidergas

GMAW



Mild steels wires



wire SIDERGAS S3 Ø 1,00 mm (.040")  
shielding gas: Ar 92% CO<sub>2</sub> 8%  
(M20 to ISO 14175:2008)

Amps	Volts	metal transfer	wire speed	
			m/min	ipm
72	15.7	short arc	3	118
112	18.1	short arc	5	196
228	29.0	spray arc	12	472

wire SIDERGAS S3 Ø 1,00 mm (.040")  
shielding gas: Ar 84% CO<sub>2</sub> 8% He 8%  
(Praxair STARGON VS)

Amps	Volts	metal transfer	wire speed	
			m/min	ipm
85	17.2	short arc	3	118
118	19.5	short arc	7	275
230	27	spray arc	9	354

wire SIDERGAS S3 Ø 1,20 mm (.047")  
shielding gas: Ar 92% CO<sub>2</sub> 8%  
(M20 to ISO 14175:2008)

Amps	Volts	metal transfer	wire speed	
			m/min	ipm
118	17	short arc	3	118
175	18.7	short arc	5	196
280	30	spray arc	12	472

wire SIDERGAS S3 Ø 1,20 mm (.047")  
shielding gas: Ar 84% CO<sub>2</sub> 8% He 8%  
(Praxair STARGON VS)

Amps	Volts	metal transfer	wire speed	
			m/min	ipm
120	17.2	short arc	3	118
180	19	short arc	5	196
270	27	spray arc	9	354

The information contained or otherwise referenced herein is presented only as "typical" without guarantee or warranty, and Sidergas SpA expressly disclaim any liability incurred from any reliance thereon. Typical data are those obtained when welded and tested in accordance with the AWS A5.18 and EN ISO 14341-A (\*) specifications. Other tests and procedures may produce different results. No data is to be construed as a recommendation for any welding condition or technique not controlled by Sidergas SpA.