



Certified Quality System

GMAW welding wire  
for elevated temperature steels

# SIDERGAS D2

Copper coated solid wire for the GMAW of creep-resistant low-alloyed steels and steels with a service temperature of up to 500 °C, with higher Manganese and Silicon content to increase deoxidation properties. Molybdenum (0,5%) provide high mechanical properties to the weld deposit at high temperature. The wire can also be used for welding low-alloyed, high tensile strength steels. To be used with both Ar/CO<sub>2</sub> mixed gas and Ar/CO<sub>2</sub>/O<sub>2</sub> shielding gas.

<b>Standards:</b>	<b>EN ISO 14341-A:11(*)</b>	<b>AWS A5.28:05</b>	<b>CSA W48:14</b>
<b>Classification:</b>	<b>G 50 4 M21 4Mo</b>	<b>ER80S-D2</b>	<b>B-G 55A 5 M G4M31</b>

(\*) 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	0,07	0,10	0,06	0,14	0,07	0,12	0,06	0,14
Mn	1,70	1,95	1,70	2,10	1,60	2,10	1,70	2,10
Si	0,60	0,80	0,50	0,80	0,50	0,80	0,50	0,80
P	-	0,02	-	0,025	-	0,025	-	0,025
S	-	0,02	-	0,025	-	0,025	-	0,025
Cu	-	0,30	-	0,35	-	0,50	-	0,35
Mo	0,40	0,60	0,40	0,60	0,40	0,60	0,40	0,60
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
V	-	0,015	-	0,03	-	-	-	0,03

## MECHANICAL PROPERTIES OF ALL-WELD METAL

	Sidergas	EN ISO	AWS	CSA
	typical values (*)	minimum values	minimum values	-
Tensile strength (Rm)	730 [MPa]	560 [MPa]	550 [MPa]	560 [MPa]
Yield strength (Rp0,2)	590 [MPa]	500 [MPa]	470 [MPa]	500 [MPa]
Elongation (A%)	21 (L <sub>0</sub> =5d <sub>0</sub> )	18 (L <sub>0</sub> =5d <sub>0</sub> )	17 (L <sub>0</sub> =2")	18 (L <sub>0</sub> =5d <sub>0</sub> )
Impact work (ISO-V KV)	60 [J] @ -30°C 50 [J] @ -50°C	47 [J] @ -40°C M21	27 [J] @ -30°C	47 [J] @ -50°C M21

(\*) Typical values are referred to EN ISO 14175 M21 (80% Ar, 20% 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

		CE
SHIELDING GASES (EN ISO 14175):	M21	(according to EN 13479:04 and Regulation (UE) No. 305/2011)
GRADING:	-	

## OPERATING DATA

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

Preheating and interpass temperature as required by the base metal

## BASE MATERIALS

Suitable for steels with yield strength of up to 580 MPa.

Steels for pressure purposes:

EN 10028-2 up to P355GH, 16Mo3, 20MnMoNi4-5

EN 10028-3 up to P355NH

Fine grain structural steels:

EN 10025-3 up to S460NL

EN 10025-4 up to S460ML

Steels for pipelines:

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

EN 10216-1 up to P275T1

EN 10216-2 P235GH, P255GH, 16Mo3

## 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
0.90	.035		X	X	X	X	X	X	X	
1.00	.040		X	X	X	X	X	X	X	
1.14	.045		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	X
1.40	.055		X	X	X	X	X	X	X	X
1.60	1/16		X	X	X	X	X	X	X	X

Sidergas

GMAW



Low-alloyed steels wires