

NOVOFIL SG3

MIG/MAG welding wire for mild steels

MIG/MAG

G4Si1 · ER70S-6

DESCRIPTION

NOVOFIL SG3 is a copper coated gas metal arc welding wire in 15 kg spools or 250 kg drums. It is particularly designed for semi-automatic and full-automatic GMAW applications.

NOVOFIL SG3 is suitable for GMA welding of un-alloyed structural steels with a tensile strength up to 540 N/mm², ship plates and fine-grained C-Mn steels. It gives high-strength weld metal at working temperatures varying between -50 and 450 °C. It contains higher Si and Mn than SG2 welding wire. Increased silicon improves wettability.

100% CO₂ or 80% Ar + 20% CO₂ are used for gas shielding.

CLASSIFICATION

AWS A5.18: ER70S-6

EN ISO 14341-A: G 42 3 C G4Si1 / G 46 4 M21 4Si1

COATING TYPE

Copper coated

Bronze coated

Copper free

APPROVALS

DB

DNV-GL

TÜV

CE

SHIELDING GASES

ISO 14175 / EN 439

M21: Ar + 15-25% CO₂

C1: 100% CO₂

DIAMETERS

0.60

mm · .025 in

0.80

mm · .030 in

0.90

mm · .035 in

1.00

mm · .039 in

1.20

mm · .045 in

1.60

mm · .062 in

PACKAGING

ø mm	0.60	0.80	0.90	1.00	1.20	1.60
Spool	✓	✓	✓	✓	✓	✓
Drum	–	✓	✓	✓	✓	✓

Spool weight: 15 kg – 16 kg – 18 kg

Drum weight: 250 kg – 300 kg – 450 kg

WELDING POSITIONS



PA

flat



PB

horizontal-vertical



PC

horizontal



PE

overhead



PF

vertical up



PG

vertical down

CHEMICAL ANALYSIS OF THE WIRE [%]

	C	Mn	Si	P	S	Ni	Cr	Mo	Cu
min	0.06	1.60	0.80	–	–	–	–	–	–
max	0.14	1.90	1.20	0.025	0.025	0.15	0.15	0.15	0.30

MECHANICAL PROPERTIES OF THE WELD METAL

	Gas M21	Gas C1
Yield strength Re	510 MPa	450 MPa
Tensile strength Rm	580 MPa	550 MPa
Elongation A5	26%	26%
Impact test KV (–40 °C)	70 J	–
Impact test KV (–30 °C)	60 J	–
Impact test KV (–20 °C)	100 J	60 J
Impact test KV (+20 °C)	140 J	100 J

MATERIALS TO BE WELDED

General structural steels

DIN: St 44, St 44-2, St 44-3, St 52, St 52-3 • EN: S275, S355 • DIN: St 37-4, St 44-4, St 52-4 • EN: P235TR2 – P355T2 • DIN: St 50-2, St 60-2, St 70-2 • EN: E295, E335, E360 • DIN: C 10 – C 35; Ck 10 – Ck 35 • EN: C10 – C35

Fine grained steels

DIN: StE 255 – StE 420 • EN: S255N – S420N • DIN: WStE 255 – WStE 355 • EN: P255NH – P355NH

Elevated temperature steels

DIN: St 35-8, St 45-8 • EN: P235G1TH – P255G1TH

Boiler & pressure vessel steels

DIN: H1, H11 • EN: P235GH, P265GH • DIN: 17 Mn 4, 19 Mn 6 • EN: P295GH, P355GH

Ship plates

DIN: A, B, C, D, E • DIN: AH32 – EH36

Cast steels

DIN: GS-38, GS-45, GS-52 • EN: GE200, GE240, GE260

Pipe materials

DIN: StE 210-7 – StE 415-7 • EN: L210 – L415NB • DIN: X42, X46, X52, X60 (API 5LX)

WELDING PARAMETERS

Current type and polarity: **DC (+)**

	Diameter [mm]	Current [A]	Voltage [V]
Short arc	1.00	80–175	18–28
Short arc	1.20	120–200	18–30
Short arc	1.60	225–480	28–40

The values given are for information only and may vary depending on welding conditions. Document prepared by the authorised distributor on the basis of the NOVOFIL S.p.A. technical data sheet — in case of discrepancies the manufacturer's original prevails.