

Classifications

EN ISO 14341-A	AWS A5.18 / SFA-5.18
G 42 4 M21 3Si1	ER 70S-6
G 42 4 C1 3Si1	

Characteristics and typical fields of application

GMAW Copper-coated solid wire of the G 3Si1 / ER70-6 type for metal transfer with minimum spatter when welding with mixed-gases as well as with CO₂.

Due to the high current load capacity, the stable arc and the nearly residual free weld surface the wire offers the best conditions for productive welding processes. Excellent feeding characteristics provides high wire feed rates especially during robotic welding. The coppered solid wires of the EMK series can be provided in bulk packages from EC0drum 250 up to SQUAREdrum 550.

Base materials

Steels with yield strength < 420 MPa (60 ksi)

S235JR-S355JR, S235JO-S355JO, S235J2-S355J2, S275N-S420N, S275M-S420M, P235GH-P355GH, P275NL1-P355NL1, P215NL, P265NL, P355N, P285NH-P420NH, P195TR1-P265TR1, P195TR2-P265TR2, P195GH-P265GH, L245NB-L415NB, L245MB-L415MB, GE200-GE240, ship building steels: A, B, D, E, A 32-E 36

ASTM A 106 Gr. A, B, C; A 181 Gr. 60, 70; A 283 Gr. A, C; A 285 Gr. A, B, C; A 350 Gr. LF1; A 414 Gr. A, B, C, D, E, F, G; A 501 Gr. B; A 513 Gr. 1018; A 516 Gr. 55, 60, 65, 70; A 573 Gr. 58, 65, 70; A 588 Gr. A, B; A 633 Gr. C; A 662 Gr. B; A 711 Gr. 1013; A 841 Gr. A; API 5 L Gr. B, X42, X52, X56, X60

Typical analysis

	C	Si	Mn
wt.-%	0.08	0.9	1.45

Mechanical properties of all-weld metal - typical values (min. values)

Condition	Yield strength R _e	Tensile strength R _m	Elongation A (L ₀ =5d ₀)	Impact energy ISO-V KV J	
	MPa	MPa	%	20°C	-40°C
u	440 (≥ 420)	560 (≥ 500 – 640)	30 (≥ 20)	160	80 (≥ 47)
u2	440 (≥ 420)	540 (≥ 500 – 640)	29 (≥ 20)	120	50 (≥ 47)
s	380	490	30	160	

u untreated, as welded – shielding gas M21

u2 untreated, as welded – shielding gas I1

s stress relieved, 620 °C/2h – shielding gas M21

Operating data

	Polarity	DC+	Dimension mm
	Shielding gas (EN ISO 14175)	C1	0.8
		M1	1.0
		M2	1.2
		M3	1.6

Approvals

TÜV (03036), DB (42.132.80), ABS, DNV, LR, CE