

Classifications

EN ISO 636-A	EN ISO 636-A	AWS A5.18 / SFA-5.18
W 3Si1	W 42 5 W3Si1	ER70S-6

Characteristics and typical fields of application

TIG rod of Type W 3Si1 / ER70S-6 suited for joints in boiler and vessel fabrication as well as in structural steel engineering. Can be used in sour gas applications (HIC-Test acc. to NACE TM-02-84). SSC-test results are also available.

Base materials

Steels with yield strength < 420 MPa (60 ksi)

S235JR-S355JR, S235J0-S355J0, 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	-50°C
u	450 (≥ 420)	560 (≥ 500 - 640)	28 (≥ 20)	180	80	≥ 47
s	400	510	28	180	110	

u untreated, as welded – shielding gas 100 % Ar

s stress relieved, 600 °C/2h – shielding gas 100 % Ar

Operating data

	Polarity	DC-	Dimension mm
	Shielding gas (EN ISO 14175)	l1	1.2 × 1000
	Rod marking	+ W3Si1 / ER70S-6	1.6 × 1000
			2.0 × 1000
			2.4 × 1000
			3.0 × 1000
		4.0 × 1000	

Approvals

TÜV (19288), CE