

Classifications

EN ISO 14341 / 21952-A	EN ISO 14341 / 21952-B	AWS A5.28 / SFA-5.28
G 46 4 M21 2Mo / G MoSi	G 55A 4 M21 1M3 / G (1M3)	ER70S-A1 (ER80S-G)

Characteristics and typical fields of application

GMAW solid wire electrode for welding of low alloy and creep resistant steels. Suitable for joints produced with CO₂ or gas mixture. Application area includes boiler, pressure vessel, tanks, pipeline, and crane constructions as well as in structural steel engineering. Approved in long-term service up to 550 °C..

Base materials

Creep resistant steels and similar alloyed cast steels, ageing resistant and steels resistant to caustic cracking

16Mo3, 20MnMoNi4-5, 15NiCuMoNb5, S235JR-S355JR, S235JO-S355JO, S450JO, S235J2-S355J2, S275N-S460N, S275M-S460M, P235GH-P355GH, P355N, P285NH-P460NH, P195TR1-P265TR1, P195TR2-P265TR2, P195GH-P265GH, L245NB-L415NB, L450QB, L245MB-L450MB, GE200-GE300

ASTM A 29 Gr. 1013, 1016; A 106 Gr. C; A, B; A 182 Gr. F1; A 234 Gr. WP1; A 283 Gr. B, C, D; A 335 Gr. P1; A 501 Gr. B; A 533 Gr. B, C; A 510 Gr. 1013; A 512 Gr. 1021, 1026; A 513 Gr. 1021, 1026; A 516 Gr. 70; A 633 Gr. C; A 678 Gr. B; A 709 Gr. 36, 50; A 711 Gr. 1013; API 5 L B, X42, X52, X60, X65

Typical analysis of solid wire (wt.-%)

	C	Si	Mn	Mo
wt.-%	0.1	0.6	1.1	0.5

Mechanical properties of all-weld metal

Condition	Yield strength R _{p0,2}	Tensile strength R _m	Elongation A (L ₀ =5d ₀)	Impact work ISO-V KV J	
	MPa	MPa	%	+20 °C	-40 °C
u	500 (≥ 400)	600 (≥ 520)	25 (≥ 22)	150	≥ 47
u1	470 (≥ 400)	590 (≥ 520)	23 (≥ 22)	150	≥ 47
a	450 (≥ 400)	570 (≥ 520)	25 (≥ 17)	150 (≥ 47)	

u untreated, as-welded – shielding gas Ar + 18 % CO₂

u1 untreated, as-welded – shielding gas 100 % CO₂

a annealed, 620 °C/1h / furnace down to 300 °C / air – shielding gas Ar + 18 % CO₂

Operating data

	Polarity: DC (+)	Shielding gases: (M21) Argon + 15 – 25 % CO ₂ (C1) 100 % CO ₂	ø (mm)
			0.8
			1.0
			1.2

Preheating, interpass temperature and post weld heat treatment as required by the base metal.

Approvals

TÜV (00021), DB (42.132.70), NAKS, CE