

Classifications

EN ISO 17634-A	EN ISO 17632-A	AWS A5.29 / SFA-5.29
T Mo B M21 3 H5	T 46 6 Mo B M21 3 H5	E80T5-GM-H4

Characteristics and typical fields of application

Seamless, Molybdenum alloyed, basic wire for single or multilayer welding in boiler, pressure vessel, pipeline and steel construction, preferably for creep resistant steel qualities with 0.5% Mo up to 500°C with Ar-CO₂ shielding gas. Features include: excellent impact values at low temperatures (-60°C) in as welded conditions and after long post weld heat treatments (620°C / 15h) with low spatter losses. Wire with very low amount of diffusible hydrogen in weld metal (<1.5ml/100g) that reduces the risk of cracks.

Base materials

16Mo3, S235JR-S355JR, P195TR1-P265TR1, L245NB-L415NB, L450QB, L245MB-L450MB, GE200-GE300; ASTM A 29 Gr. 1016; A 106 Gr. A, B; A 182 Gr. F1; A 234 Gr. WP1; A 283 Gr. C, D; A 335 Gr. P1; A 501 Gr. B; A 510 Gr. 1013; A 512 Gr. 1021, 1026; A 513 Gr. 1021, 1026; A 711 Gr. 1013; API 5 L B, X42, X52, X60, X65

Typical analysis

	Gas	C	Si	Mn	Mo
wt.-%	M21	0.08	0.35	1.00	0.50

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

Condition	Yield strength	Tensile strength	Elongation A	Impact energy ISO-V KV J		
	R _{p0.2} MPa	R _m MPa	(L ₀ =5d ₀) %	20°C	-40°C	-60°C
u	520 (≥ 470)	600 (550-680)	24 (≥ 22)	210	150	130 (≥ 47)
s	490 (≥ 470)	580 (550-680)	26 (≥ 22)	190	140	120 (≥ 47)

u untreated, as welded – shielding gas M21

s stress relieved 620°C / 3h – shielding gas M21

Operating data

	Polarity	DC +	Dimension mm
	Shielding gas (EN ISO 14175)	M21	1.2

Preheating, interpass temperature and post weld heat treatment as required by the base metal. For heavy walled components an interpass temperature to a min. 150°C recommended. Final PWHT should be carried out between 560°C to 620°C for a minimum of 1 hour.

Approvals

TÜV (12254), CE