

Classifications
Characteristics and typical fields of application

Seamless all positional metalcored high efficiency wire especially designed for semi-automatic and fully automatic joint welding of unalloyed and fine-grained constructional steels. Seamless technology guarantees a higher wire rigidity that give- as benefits- exact ignition and positioning accuracy. Very high metal recovery between 95 and 97% are additional benefit of this wire. Steady spray arc-like droplet transfer with minimal spatter formation, good penetration, high resistance to porosity, good behavior as well as low hydrogen contents (~ 2ml/100g weld deposit) are further quality features of this metalcored wire. Minimum oxide residues permit the welding of multi passes without the need for inter-run cleaning. Ideal for horizontal and flat fillet welds.

Base materials

Steels up to a yield strength of 460 MPa (67 ksi)

S235JR-S355JR, S235JO-S355JO, S450JO, S235J2-S355J2, S275N-S460N, S275M-S460M, P235GH-P355GH, P275NL1-P460NL1, P215NL, P265NL, P355N, P285NH-P460NH, P195TR1-P265TR1, P195TR2-P265TR2, P195GH-P265GH, L245NB-L415NB, L450QB, L245MB-L450MB, 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, E; A 662 Gr. B; A 711 Gr. 1013; A 841 Gr. A; API 5 L Gr. B, X42, X52, X56, X60, X65

Typical analysis

	Gas	C	Si	Mn
wt.-%	M21	0.07	0.7	1.5

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

Condition	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A ($L_0=5d_0$)	Impact energy ISO-V KV J		
	MPa	MPa	%	-40°C	-46°C	-50°C
u	490 (≥460MPa)	600 (550-660)	27 (≥22)	90 (≥47)	70 (≥47)	60 (≥27)
s1	450	550	27	100		

u as welded – shielding gas Ar + 5 – 25 % CO₂

s1 stress relieved, 580 °C /2 hrs. - shielding gas Ar + 5 – 25 % CO₂

Operating data

Polarity	DC+	Dimension mm
Shielding gas (EN ISO 14175)	M20, M21: Ar + 5 – 25 % CO ₂	1.0
		1.2
		1.4
		1.6

Welding with standard GMAW power source possible

Approvals

TÜV (11163), DB (42.052.26), ABS, BV, DNV, CWB, LR, CE