diamondspark 54 MC

Metal-cored wire, seamless, mild steel

Classifications

EN ISO 17632-A	EN ISO 17632-B	AWS A5.18 / SFA-5.18
T 46 6 M M21(M20) 1 H5	T 49 6 T15-1 M21(M20) A-U H5	E70C-6M H4
T 42 5 M C1 1 H5	T 49 5 T15-1 C1 A-U H5	E70C-6C H4

Characteristics and typical fields of application

Seamless metal cored wire for single- or multilayer welding of Carbon, Carbon-Manganese and similar types of steels, including fine grain steels with Argon-CO2 or pure CO2 shielding gas. Features include: high yield, good weldability, excellent bead appearance, very low spatter losses and exceptional mechanical properties at low temperatures (-60ºC) in as welded conditions as well with post weld heat treatment. This wire is especially suitable for automated-robotized applications and for root pass welding for piping and butt-joints. This product can be used in sour gas applications. (HIC tested acc. to NACE TM-0284). Test values for SSC are available upon request.

Base materials

S235JR-S355JR, S235J0-S355J0, S450J0, 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
Shipp 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.-%	M20 - M21	0.07	0.75	1.40
wt.-%	C1	0.06	0.55	1.20

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	%	-40°C	-50°C	-60°C
u	500 (≥ 460)	600 (550-660)	29 (≥ 20)	120		80 (≥ 47)
u1	530 (≥ 460)	620 (550-640)	28 (≥ 20)			60 (≥ 47)
u2	460 (≥ 420)	560 (500-640)	30 (≥ 20)	80	60 (≥ 47)	
s	420	510	24	90		

u untreated, as welded – shielding gas M21
u1 untreated, as welded – shielding gas M20
u2 untreated, as welded – shielding gas C1
s stress relieved 620°C / 2h – shielding gas M21

Operating data

Polarity	DC+/– in PG-Position
Shielding gas (EN ISO 14175)	M20, M21 (Ar + 5 – 25% CO2); C1

Dimension mm
1.0
1.2
1.4
1.6

Welding with conventional or pulsed power sources using DC+

Approvals

TÜV (06220), DB (42.052.02), DNV, ABS, LR, BV, RINA, CWB, CE