# 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

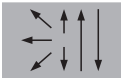
| | Gas | C | Si | Mn |
|---|---|---|---|---|
| wt.-% | M20 - M21 | 0.07 | 0.75 | 1.40 |
| wt.-% | C1 | 0.06 | 0.55 | 1.20 |

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

| Condition | Yield strength $R_e$ | Tensile strength $R_m$ | Elongation A ($L_0$=5$d_0$) | 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