

**Classifications**

| EN ISO 14341-A  | AWS A5.18 / SFA-5.18 | CSA W48-18 (GMAW Carbon Steel) |
|-----------------|----------------------|--------------------------------|
| G 42 5 M21 3Si1 | ER70S-6              | B-G 49A 3 C1 S6                |
| G 42 4 C1 3Si1  |                      |                                |

**Characteristics and typical fields of application**

Solid wire electrode with engineered surface, designed for reliable welding performance within a wide parameter range. ECOspark wires are characterised by very good feeding properties at high wire feeding rates, by a very stable arc performance and significant lower oxide / silicate forming on the weld surface. This makes them especially suited for fully mechanised processes where the wire comes in BASEdrum or the environmental friendly ECOdrum bulk package.

**Base materials**

Steels up to a yield strength of 420 MPa (60 ksi)

S235JR-S355JR, S235JO-S355JO, S235J2-S355J2, S275N-S420N, S275M-S420M, P235GH-P355GH, P275NL1-P355NL1, P215NL, P265NL, P355N, P285NH-P420NH, P195TR1-P265TR1, P195TR2-P265TR2, P195GH-P265GH, L245NB-L415NB, L245MB-L415MB, 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; A 662 Gr. B; A 711 Gr. 1013; A 841 Gr. A; API 5 L Gr. B, X42, X52, X56, X60

**Typical analysis**

|       | C    | Si  | Mn   |
|-------|------|-----|------|
| wt.-% | 0.08 | 0.9 | 1.45 |


**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                    | %                           | 20°C                     | -40°C     | -50°C     |
| u1        | 440 (≥ 420)          | 560 (500 – 640)        | 28 (≥20)                    | 160 (≥ 110)              | -         | 80 (≥ 47) |
| u2        | 430 (≥ 420)          | 530 (500 – 640)        | 26 (≥20)                    | 130 (≥ 90)               | 95 (≥ 47) | -         |

u1 untreated, as welded M21

u2 untreated, as welded CO<sub>2</sub>

**Operating data**

|  | Polarity                     | DC+ | Dimension mm |     |
|--|------------------------------|-----|--------------|-----|
|  | Shielding gas (EN ISO 14175) | C1  |              | 0.8 |
|  |                              | M2  |              | 0.9 |
|  |                              | M3  |              | 1.0 |
|  |                              |     |              | 1.2 |
|  |                              |     |              | 1.6 |

**Approvals**

TÜV (19669), DB (42.132.86), ABS, CWB, CE