

Classifications

| EN ISO 17632-A | EN ISO 17632-B | AWS A5.36/SFA-5.36 | AWS A5.36M/SFA-5.36M |
|------------------|-----------------|--------------------|----------------------|
| T46 3 P M21 1 H5 | T553T1-1M21A-H5 | E71T1-M21A2-CS2-H4 | E491T1-M21A3-CS2-H4 |
| T42 2 P C1 1 H5 | T492T1-1C1A-H5 | E71T1-C1A0-CS2-H4 | E491T1-M21A2-CS2-H4 |

Characteristics and typical fields of application

Seamless copper coated flux-cored wire for single- or multipass welding of carbon- and high strength steels, using M21 (Ar/CO₂) shielding gas or pure CO₂. The weld deposit has excellent mechanical properties till -30°C in mix gas application. The main features of this wire are excellent weldability in all positions, excellent bead appearance, low amount of spatters and easy to remove slag. In position PF very high welding speeds are possible due to an optimized slag characteristic. Due to the seamless design of the wire: hydrogen pickup during operation and storage can be avoided; no porosity issues even on primer plates and very good feeding performance are achievable. The average hydrogen content of the pure weld metal is about 1-3 ml/100g weld metal.

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,

Shipbuilding 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

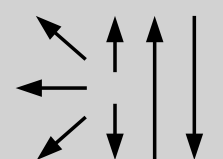
Typical analysis of all-weld metal (wt.-%)

| | Gas | C | Si | Mn |
|------|-----|------|------|-----|
| wt-% | M21 | 0.06 | 0.45 | 1.3 |
| wt-% | C1 | 0.05 | 0.35 | 1.2 |

Mechanical properties of all-weld metal

| Condition | Yield strength R _e | Tensile strength R _m | Elongation A (L ₀ =5d ₀) | Impact work ISO-V KV J | |
|-----------|------------------------------------------------------------------------|------------------------------------|----------------------------------------------------|---------------------------|------------------|
| | MPa | MPa | % | -20°C | -30°C |
| u | 530 (≥ 460) | 590 (550 – 660) | 24 (≥ 22) | 90 | 70 (≥ 47) |
| u1 | 470 (≥ 420) | 550 (500 – 640) | 25 (≥ 22) | 60 (≥ 47) | - |
| u | untreated, as welded – shielding gas M21: Argon+15-25% CO ₂ | | | | |
| u1 | untreated, as welded – shielding gas C1: 100% CO ₂ | | | | |

Operating data

| | | | |
|-------------------------------------------------------------------------------------|------------------------------|-------------------------------------------|------------------------------------------------|
|  | Polarity: DC (+) | Shielding gases: (EN ISO 14175) | Diameters 1.0 mm 1.2 mm 1.6 mm |
| | | M21: Argon+15-25% CO ₂ | |
| | | C1: 100% CO ₂ | |

Welding with standard GMAW power source possible

Approvals

ABS; BV; DNV-GL; LR; TÜV, DB, CE