

# Solid Wire Electrode for Submerged Arc Welding

**Classification:**ISO 14171-A -  
SFA 5.17 / AWS A5.17 -**S2**  
**EM12(K)****Characteristics:**

Wire electrode for submerged arc welding of non-alloy and fine grain steels, boiler steels and pipe steels.

**Typical analysis and chemical composition acc. to EN ISO 14171-A and AWS A5.17:**

Wire electrode	C	Si	Mn	Mo	Ni	Cr	P	S	Cu total
Typical analysis BA-S2	0.11	0.12	1.07	0.01	0.04	0.03	0.007	0.008	0.009
S2 acc. to ISO 14171-A	0.07-0.15	0.15	0.80-1.30	0.15	0.15	0.15	0.025	0.025	0.30
EM12 acc. to AWS A5.17	0.06-0.15	0.10	0.80-1.25				0.030	0.030	0.35
EM12K acc. to AWS A5.17	0.05-0.15	0.10-0.35	0.80-1.25				0.030	0.030	0.35

**Base Materials:**

- Non-alloy structural steels acc. to EN 10025 and ASTM: S235JRG2/A570 grade 36 to S355J2G3R/A572 grade 50  
Suitable fluxes: BF 1, BF 3 and BF 4
- Fine grain steels acc. to EN 10025, EN 10028 and ASTM: up to P355N/S355NL/A516 grade 70  
Suitable fluxes: BF 1, BF 3, BF 4, BF 5.1, BF 6.5 and BF 10
- Pipe steels acc. to ISO 3183, EN 10208 and API-5: L415N/X60  
Suitable fluxes: BF 5.1, BF 6.30 and BF 6.5
- Boiler steels acc. to EN 10028 and ASTM: P235GH/A516 grade 55, P355GH/A516 grade 70 and S275J2G3/A572 grade 42, S355J2G3/A572 grade 50  
Suitable fluxes: BF 1, BF 3, BF 4, BF 5.1 and BF 6.5

Flux type suitability is strongly dependent on its application. In combination with the wire electrode the most suitable flux should match the requirements of the plate material as closely as possible under the existing welding conditions. Further information can be obtained from the technical flux data sheets.

**Diameter:**

2.0 – 5.0 mm; Sizes and tolerances acc. to ISO 544 and AWS A5.17.

**Wire electrode surface:**

Copper-coated, smooth finish free from surface defects and foreign matter.

**Package forms:**

Coils, spools, drums and spiders as standard package forms for SAW-wire electrodes, different package forms on request.