# Solid Wire Electrode for Submerged Arc Welding

# BA-WIRE 420

**Classification:** SFA-5.9 – **ER420**

**Typical analysis and chemical composition acc. to AWS A5.9:** (Weight Percent)

| Wire electrode | C | Si | Mn | Mo | Ni | Cr | P | S | Cu total |
|---|---|---|---|---|---|---|---|---|---|
| Typical analysis BA-WIRE 420 | 0.30 | 0.35 | 0.45 | 0.20 | 0.25 | 13.0 | 0.02 | 0.02 | 0.3 |
| ER420 acc. to AWS A5.9 | 0.25–0.40 | 0.5 | 0.6 | 0.75 | 0.6 | 12.0–14.0 | 0.03 | 0.03 | 0.75 |

**Application:**
Wire electrode for submerged arc welding often used for surfacing applications which need superior resistance to abrasion. It requires preheat and inter-pass temperatures of not less than 225 °C, followed by slow cooling. Post weld heat treatment is used to temper the weld deposit.
BA-WIRE 420 is similar to BA-WIRE 410, but with higher chromium and carbon content which increases the wear resistance.

**Base Materials:**
- AISI 420, X12Cr13: hardfacing results in higher hardness than with ER410.
  Suitable fluxes: BF 38, WP 380

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.

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

**Diameter:**
1.6 – 4.0 mm; sizes and tolerances acc. to ISO 544 and AWS A5.9.

**Wire electrode surface:**
Smooth finish free from surface defects and foreign matter.