

**Classifications**
**AWS A5.28 / SFA-5.28**

ER90S-B3

**Characteristics and typical fields of application**

Solid welding wire for 2.25 % Cr 1 % Mo alloyed boiler, plate and tube steels. Approved for long-term service up to 600 °C / 1100 °F service temperature. Also for similarly alloyed quenched and tempered steels as well as case hardening steels. The weld metal meets all prerequisites for reliable long term creep properties without embrittlement due to very low content of trace elements.

**Base materials**

High temperature steels and similar alloyed cast steels, similar alloyed case hardening steels

ASTMA 182 Gr. F22 Cl. 1+3 – K21590

ASTMA 213 Gr. T22 – K21590

ASTMA 234 Gr. WP22 Cl. 1+3 – K90941

ASTMA 335 Gr. P22 – K21590 – 1.7380 – 10CrMo9-10

ASTMA 217 Gr. WC9 – J21890 – 1.7379 – G17CrMo9-10

ASTMA 387 Gr. 22 – K21590

**Typical analysis**

	C	Si	Mn	Cr	Mo
wt.-%	0.09	0.55	0.6	2.55	1.05

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

Condition	Yield strength R <sub>p0.2</sub>	Tensile strength R <sub>m</sub>	Elongation A (L <sub>0</sub> =5d <sub>0</sub> )	Impact energy ISO-V KV J
	MPa	MPa	%	20°C
s	550 (≥ 400)	650 (≥ 550)	23 (≥ 18)	80 (≥ 47)

s heat treated 690° C / 1h - shielding gas M2

**Operating data**

	Polarity	DC+	Dimension mm
	Shielding gas (EN ISO 14175)	M2 M3	0.9 1.14 1.2

Preheating and interpass temperature 200 – 350°C.

Tempering at 700 – 750°C at least 1 h followed by cooling down to 300°C and still air.

**Approvals**

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