Union I CrMo 910 Spezial

TIG wire/ rod, creep resistant

Classifications

AWS A5.28 / SFA-5.28

ER90S-G

Characteristics and typical fields of application

Union I CrMo 910 Spezial is a copper coated solid filler wire / rod for manual and mechanized gas tungsten arc welding. The 2.25Cr-1Mo type weld metal exhibits a bainitic microstructure with favorable mechanical properties in tempered condition. Union I CrMo 910 Spezial is specially designed for fabrication of chemical apparatur like hydrocracking units in petro chemical industry. Due to the low content of residual and tramp elements the weld metal offers a Bruscato factor < 12 ppm. Compared to Union I CrMo 910 this filler wire/rod offers a reduced Silicon and Manganese content further improving resistance to temper embrittlement. Union I CrMo 910 Spezial complies with the requirements on step-cooling testing.

Base materials

Similar alloyed creep resitant steels and castings like
1.7335 13CrMo4-5, 1.7262 15CrMo5, 1.7728 16CrMoV4, 1.7218 25CrMo4, 1.7225 42CrMo4, 1.7258 24CrMo5, 1.7354 G22CrMo5-4, 1.7357 G17CrMo5-5
ASTM A 182 Gr. F12; A 193 Gr. B7; A 213 Gr. T12; A 217 Gr. WC6; A 234 Gr. WP11; A335 Gr. P11, P12; A 336 Gr. F11, F12; A 426 Gr. CP12

Typical analysis

	C	Si	Mn	Cr	Mo	Cu
wt.-%	0.10	0.10	0.50	2.40	1.0	0.1*

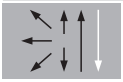
* incl. copper coating

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

Condition	Yield strength $R_{p0.2}$	Tensile strength R_m	Elongation A (L_0=5d_0)	Impact energy ISO-V KV J
	MPa	MPa	%	-29 °C
T1	550 (≥ 540)	650 (≥ 620)	26 (≥ 20)	290 (≥ 54)
T2	505 (≥ 310)	620 (≥ 515)	26 (≥ 20)	280 (≥ 54)
T3	450 (≥ 310)	575 (≥ 515)	26 (≥ 20)	270 (≥ 54)

T1: tempered (690 °C / 1 h)
T2: tempered (690 °C / 6 h)
T3: tempered (690 °C / 32 h)

Operating data



Polarity	DC -
Shielding gas (EN ISO 14175)	I1-3
Rod marking	I CRMO 910 SPEZIAL / ER 90S-G

Dimension mm
1.0
1.6 × 1000
2.4 × 1000
3.2 x 1000

Preheating, interpass temperature, and post-weld heat treatment as required by the base metal. Preheating and interpass temperature can normally be recommended being in a range of 150 to 350 ºC depending on the wall thickness. Common post weld heat treatments are carried out between 650 and 750 ºC.

Approvals

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