Union S 1 CrMo 2 - UV 420 TTR

SAW wire/flux combination, low-alloyed, creep resistant

Classifications

EN ISO 24598-A	AWS A5.23 / SFA-5.23
S S CrMo2 FB	F9P2-EB3R-B3R-H4

Characteristics and typical fields of application

Union S 1 CrMo2 – UV 420 TTR is a wire-flux combination for submerged-arc welding of creep resistant steel grades with 2,25% Cr – 1% Mo. To prevent long term temper-embrittlement the weld metal is characterized by a high degree of purity, and meets the most stringent toughness requirements at low/subzero temperatures, also after step-cool heat treatment. After a PWHT of 5 hrs at 690ºC : $T_{t(54J)}$ + 2,5*$\Delta T_{t(54J)SC}$ < +10ºC (typical < -10ºC). The very good welding behavior in narrow gap joint configurations without limitation in thickness. **UV 420 TTR** is a fluoride-basic flux with high basicity and neutral metallurgical behaviour, designed for welding with DC+ polarity with a low level of diffusible hydrogen. For information regarding welding flux UV 420 TTR see our detailed data sheet.

Base materials

1.7380 10CrMo9-10, 11CrMo9-10, 12CrMo9-10
A335 Gr. P22, A387 Gr.22, A542BCl4 and other similar steel grades.

Typical analysis

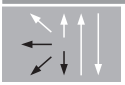
wt.-%	C	Si	Mn	Cr	Mo	X
wire	0.12	0.08	0.55	2.5	1.0	< 10
all-weld metal	0.08	0.20	0.75	2.3	1.0	< 12

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

Condition	Tensile test Temperature	Yield strength R_e	Tensile strength R_m	Elongation A (L_o=5d_o)	Impact energy ISO-V KV J		
	°C	MPa	MPa	%	-40°C	-30°C	-20°C
a1, DC+	+20	600 (≥ 550)	720 (≥ 680)	20 (≥ 16)		≥ 54	≥ 80
a2, DC+	+20	480 (≥ 460)	580 (≥ 550)	22 (≥ 20)	≥ 54	≥ 100	≥ 120
a2, DC+	+500	360 (≥ 320)	430 (≥ 400)	16 (≥ 12)			
a3, DC+	+20	430 (≥ 400)	560 (≥ 520)	22 (≥ 20)	≥ 80	≥ 120	≥ 140
a3, DC+	+500	300 (≥ 280)	400 (≥ 360)	14 (≥ 12)			

a1 = 1 hour 690 °C ; a2 = 8 hours 690 °C ; a3 = 32 hours 690 °C ; a4 = 8 hours 650 °C

Operating data



Polarity	DC+

Dimension mm
1.6
2.0
2.5
3.0
4.0
5.0

Preheat and Interpass temperature: 200 – 250ºC Single wire (HI max 22 kJ/cm) e.g. for 3.0/3.2 mm: 450-520 A; 29-32 V; 45-55 cm/min and for 4.0 mm : 500-580 A; 29-32 V; 50-55 cm/min.
It is strongly recommended to keep the weld at preheating temperature, unless it is possible to carry out ISR or DHT (350ºC/ min 4hrs) immediately after welding, in order to avoid cold cracking.

Approvals

TÜV (02734), CE