

Classifications

EN ISO 26304-A	AWS A5.23 / SFA-5.23
S 62 4 FB S3Ni1Mo H4	F10A6-EF3-F3-H4 / F9P6-EF3-F3-H4

Characteristics and typical fields of application

Union S 3 NiMo1 - UV 420 TTR-C is a wire flux combination for submerged arc welding of un-alloyed and low alloyed high strength steel grades. It is applied in high strength applications in oil and gas industry. Especially in joining castings, forgings and pipe connections in steel grades like AIS 4130 and 8630 that need a PWHT at relative high temperatures (e.g. 630 – 660°C) for long (cumulative) duration. It is suitable for welding procedures with single wire with DC+ and tandem (DC+ and AC) welding.

UV 420 TTR-C is agglomerated fluoride basic flux with the special feature of a Carbon support resulting in a compensated Carbon loss and a low level of diffusible hydrogen. More detailed information is available in the separate datasheet of the flux.

Base materials

For joining and surfacing applications in forging parts in F22, AISI 8630, AISI 4130, and dissimilar joints to pipe grades API 5L – X75 and X80.

Typical analysis

wt.-%	C	Si	Mn	Ni	Mo	S	P
wire	0.12	0.20	1.75	0.95	0.55		
all-weld metal	0.10	0.30	1.75	0.95	0.55	< 0.012	≤ 0.015

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

Condition	Yield strength	Tensile strength	Elongation A	Impact energy ISO-V KV J		
	$R_{p0.2}$ MPa	R_m MPa	($L_0=5d_0$) %	-51°C	-40°C	-20°C
u, DC+	≥ 620	≥ 690	≥ 18	≥ 27	≥ 47	≥ 100
a1, DC+	≥ 590	≥ 690	≥ 18	≥ 47	≥ 70	≥ 100
a2, DC+	≥ 550	≥ 660	≥ 18	≥ 47	≥ 70	≥ 100

u untreated, as welded ; a1 = 2 hours 620 °C ; a2 = 8 hours 660 °C

Operating data

	Polarity	DC +	Dimension mm	
				1.6
				2.0
				2.5
				3.0
				3.2
				4.0

Preheating and interpass temperature: 180 – 240°C

Approvals

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