

Classifications

EN ISO 14171-A
AWS A5.23

S 46 4 FB S3Mo H4

F8A4-EA4-A4-H4 / F8P6-EA4-A4-H4

Characteristics and typical fields of application

Union S 3 Mo - UV 420 TTR is wire flux combination for submerged arc welding of creep resistant 0,5%Mo steel grades (16Mo3) and mild steel pressure vessels. It is suitable for single (DCEP) welding. Very good slag detachability also for narrow gap welding. Flux can especially be used for multi-pass butt welding of medium tensile steels. Good impact toughness of weld metal at low temperatures, however also suitable for 2-run procedures.

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

Creep resistant steels and similar alloyed cast steels, ageing resistant and steels resistant to caustic cracking, creep resistant constructional steels with comparable yield strength.

16Mo3, S275JR, S275J2G3, S355J2G3, P275T1-P355T1, P275T2-P355T2, P255G1TH, S255N, P295GH, P310GH, P315N-P420N, P315NH-P420NH, BHW 2.5, WB 25

ASTM A335 Gr. P1; A161-94 Gr. T1; A182M Gr. F1, A204M Gr. A, B, C; A250M Gr. T1; A217 Gr. WC1, API 5L X52-X65

S460N, S460M, S460NL, S460ML, S460Q, S460QL1, P460N, P460NH, P460NL1, P460NL2, L415NB, L415MB, L415QB, API 5 L X60, X65, X60Q, X65Q

Typical analysis

wt.-%	C	Si	Mn	Mo
wire	0.10	0.15	1.50	0.50
all-weld metal	0.06	0.20	1.50	0.45

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			
				-51°C	-40°C	-20°C	20°C
u, DC+	≥ 470	≥ 550	≥ 24		≥ 47	≥ 80	≥ 140
a1, DC+	≥ 470	≥ 550	≥ 24	≥ 27	≥ 47	≥ 80	≥ 140
a2, DC+	≥ 320	≥ 510	≥ 26				≥ 130

u untreated, as welded ; a1 = 2 hours 620 °C ; a2 = 920°C + air + 2 hours 600°C

Operating data

	Polarity	DCEP	Dimension mm
			2.4
			2.5
			3.0
			4.0
			5.0

Preheating and interpass temperature: 100 – 220°C

Approvals

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