

Classifications

EN ISO 14171-A	AWS A5.23 / SFA-5.23
S 42 8 FB S2Ni3 H5	F7A15-ENi3-Ni3 / F7P15-ENi3-Ni3

Characteristics and typical fields of application

Union S 2 Ni 3,5 - UV 418 TT is a wire flux combination for submerged arc welding of fine-grained structural steels and especially 3,5%Ni steel grades with matching wire composition. The wire flux-combination has been designed to achieve optimum toughness properties of the weld metal (at -80°C / -105°C), produced by multi-pass welding technique. It is suitable for cryogenic application such as pressure vessel and liquefied gas storage equipment manufacturing till a minimum temperature of -105°C (e.g. for CO₂ and Ethane) and arctic off-shore- constructions. Very good slag detachability also for narrow gap welding.

UV 418 TT is an agglomerated fluoride-basic flux with high basicity with a neutral metallurgical behavior and is suitable for single (AC or DC) and tandem welding, however the tandem process is not recommended for this combination. For information regarding this welding flux see our detailed data sheet.

Base materials

12 Ni 14 (EN) or SA 350 Gr. LF3 and SA 203 Gr. D & E (ASME)

Typical analysis

wt.-%	C	Si	Mn	Ni	S	P
all-weld metal	0.06	0.20	1.00	3.25	≤ 0.010	≤ 0.012

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

Condition	Yield strength	Tensile strength R _m	Elongation A	Impact energy ISO-V KV J			
	R _{p0.2}	R _m	(L ₀ =5d ₀)	-105°C	-80°C	-60°C	20°C
	MPa	MPa	%				
u, DC+	≥ 420	≥ 520	≥ 25	≥ 27	≥ 47	≥ 90	≥ 160
a1, DC+	≥ 420	≥ 520	≥ 25	≥ 35	≥ 54	≥ 90	≥ 160

u untreated, as welded ; a1 = 1 hour 620 °C

Operating data

	Polarity	DC / AC	Dimension mm
	Polarity	DC + / AC	2.4
			3.0
			3.2
			4.0

Preheating and Interpass temp.: 130 – 180°C; Heat Input < 2,0 kJ/mm

Approvals

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