diamondspark S 55 HP - UV 418 TT

Seamless SAW-basic flux cored wire/flux combination, mild steel

Classifications

EN ISO 14171-A	AWS A5.17 / SFA-5.17
S 46 6 FB T3 H5	F7A8-EC1 / F7P8-EC1

Characteristics and typical fields of application

diamondspark S 55 HP - UV 418 TT is a wire-flux combination for submerged arc welding of unalloyed structural steels and fine-grained structural steels up to MSYS = 460 MPa. The weld metal demonstrates very good toughness properties at low temperatures. The SAW wire is a coppered seamless basic flux cored wire with a good resistance to deformation (wire feed rollers) and is very easy to straighten to ensure the best current transfer with a low contact tip consumption. The wire is not sensitive to moisture pick up. This combination gives the fabricator the possibility to weld with high productivity: e.g: single wire 3,2 mm, 800 Amps (~17 kg/hour) with a good bead appearance, nice fusion and good slag detachability. The combination can be used for joining applications in unlimited thickness, with DC+ or AC current, which allows Tandem process (~ 30 kg/hour) with 2 wires (3,2 or 4,0 mm).
UV 418 TT is an agglomerated flux with a high basicity index and has been designed to be applied in unlimited thickness (neutral metallurgical behavior) with low level of diffusible hydrogen level. For more flux properties see separate datasheet of the flux.

Base materials

S235JR-S355JR, S235J0-S355J0, S235J2-S355J2, S275N-S460N, S275M-S460M, S275NL-S460NL, S275ML-S460ML, P235GH-P460GH, P275NL1-P460NL1, P275NL2-P460NL2, P215NL, P265NL, P355N, P285NH-P355NH, P195TR1-P265TR1, P195TR2-P265TR2, P195GH-P265GH, L245NB-L445NB, L245MBL445MB, GE200-GE240,
Ship building steels: A, B, D, E, A 32-E 36
ASTM A 106 Gr. A, B, C; A 181 Gr. 60, 70; A 283 Gr. A, C; A 285 Gr. A, B, C; A 350 Gr. LF1, LF2; A 414 Gr. A, B, C, D, E, F, G; A 501 Gr. B; A 513 Gr. 1018; A 516 Gr. 55, 60, 65, 70; A 573 Gr. 58, 65, 70; A 588 Gr. A; A 633 Gr. A, C, D; A 662 Gr. A, B, C; A 707 Gr. L1, L3; A 711 Gr. 1013; A 841 Gr. A, B, C; API 5 L Gr. B, X42, X52, X56, X60, X65

Typical analysis

wt.-%	C	Si	Mn
all-weld metal	0.07	0.4	1.4

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	%	-60°C	-40°C
u, DC+	470 (≥ 460)	560 (530–680)	27 (≥ 22)	150 (≥ 47)	160 (≥ 47)
a1, DC+	450 (≥ 420)	540 (490–660)	28 (≥ 22)	150 (≥ 47)	160 (≥ 47)
a2, DC+	435 (≥ 400)	520 (490-660)	28 (≥22)	160 (≥ 47)	170 (≥ 47)

u untreated, as welded ; a1 = 1 hour 620 °C ; a2 = 16 hours 620 °C

Operating data

Polarity	DC +/– / AC

Dimension mm
2.4
3.2
4.0

Mechanical properties depend of the applied welding procedure; e.g. a possible reduction in ISO-V toughness to 70J @-40ºC in as welded condition when welded with heat input 3,5 kJ/mm.

Approvals

DNV GL, LRS, ABS, TÜV