

Classifications

EN ISO 14171-A
AWS A5.17 / SFA-5.17

S 46 6 FB S3Si

F7A8-EH12K / F7P8-EH12K

Characteristics and typical fields of application

Union S 3 Si - UV 418 TT is a wire flux combination for submerged arc welding of unalloyed steel grades up to a minimum specified yield strength of 460 MPa. Especially recommended to be used for multi-pass butt welding. Very good impact toughness. Suitable for single wire, twin-arc and tandem welding configurations. Very good slag detachability also for narrow gap welding preparations.

UV 418 TT is an agglomerated fluoride basic flux for submerged arc welding of unalloyed and low alloyed steel grades. It has a high basicity and neutral metallurgical behaviour and is designed for medium and high strength fine grained structural steels. Detailed information about the flux can be found in the separate datasheet of the flux.

Base materials

General purpose structural steels and fine grained structural steels up to 460 MPa min. yield strength. S235J2G3 – S355J2G3, GE200 – GE260, S255N – S380N, S255NL – S460NL, P275NL1 – P460NL1, P235GH – P355GH, L210 – L415NB

ASTM A36 Gr. all; A 106 Gr. all, A214; A 242; A266 Gr. 1, 2, 4; A285; A299; A328; A366; A515 Gr. all; A516 Gr. all; A570 Gr. 30 – 45; A572 Gr. 42, 50; A606 Gr. all; A656 Gr. 50, 60; A668 Gr. A, B; A907 Gr. 30, 33, 36, 40; A841; A851 Gr. 1, 2; A935 Gr.45; A936 Gr. 50; API 5L X42 – X60

Typical analysis

| wt.-% | C | Si | Mn |
|----------------|------|------|------|
| wire | 0.10 | 0.30 | 1.65 |
| all-weld metal | 0.08 | 0.30 | 1.55 |

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

| Condition | Yield strength R_e MPa | Tensile strength R_m MPa | Elongation A ($L_0=5d_0$) % | Impact energy ISO-V KV J | | |
|-----------|-----------------------------|-------------------------------|-------------------------------------|--------------------------|------------|------------|
| | | | | -73 °C | -60 °C | -10 °C |
| u | 475 (≥ 460) | 560 (530-650) | 28 (≥ 25) | | 150 (≥ 47) | 170 (≥ 70) |
| a1 | 450 (≥ 420) | 535 (520-630) | 28 (≥ 25) | | 160 (≥ 80) | 175 (≥ 80) |
| a2 | 450 (≥ 420) | 550 (520-630) | 28 (≥ 25) | 50 (≥ 27) | 200 (≥ 80) | - |
| a3 | 380 (≥ 360) | 500 (485-590) | 30 (≥ 25) | 150 (≥ 27) | 220 (≥ 80) | - |

u untreated, as welded ; a1 = 15 hours 580 °C ; a2 = 1 hour 620 °C ; a3 = 16 hours 620 °C

Operating data

|  | Dimension mm |
|--|--------------|
| | 2.0 |
| | 2.5 |
| | 3.0 |
| | 4.0 |
| | 4.8 |

Recommendation :

Single wire DC+ : Preheating and interpass temperature 180 – 220°C, heat input < 2,0 kJ/mm.

Approvals

TÜV (07276), DB (51.132.05), CE, DNV GL, LR, BV, ABS