BÖHLER EMS 3 // BB 24

SAW wire/flux combination, unalloyed

Classifications

SAW solid wire			SAW flux
EN ISO14171-A	**EN ISO14171-B**	**AWS A5.17**	**EN ISO 14174**
S3	SU33	EH10K	SA FB 1 65 DC H5

SAW wire/flux combination

EN ISO14171-A	**EN ISO14171-B**	**AWS A5.17**	**AWS A5.17M**
S 42 4 FB S3	S49A4 FB SU33	F7A4-EH10K (F7 P6-EH10K)	F48A4-EH10K (F48 P6-EH10K)

Characteristics and typical fields of application

Universally applicable, e.g. in shipbuilding, structural steel work, and pressure vessel fabrication. The flux reacts metallurgically Mn-neutral. The sub-arc wire/flux combination produces higher strength values with very good low temperature impact properties. Excellent slag detachability, smooth beads, good wetting and low hydrogen contents (≤ 5 ml/100 g) are further important features. The combination is ideally suited for multi-pass welding of thick plates.
The deposit produces very good low temperature impact properties down to -40°C. BÖHLER EMS 3 / BB 24 can be used in sour gas applications (HIC-Test acc. to NACE TM-02-84). Test values for SSC-test are available too. For information regarding the sub-arc welding flux BÖHLER BB 24 see our detailed data sheet.

Base materials

Steels up to a yield strength of 420 MPa (60 ksi)
S235J2G3 - S355J2G3, GE200, GE240, GE260, S235JRS1 - S235J4S, AH, DH, EH, S255N - S380N, P235GH, P265GH, S255N, P295GH, S235G2T, S255GT, S355GT, L210 - L360NB, P235G1TH, P255G1TH
ASTM A36 Gr. all; A 106 Gr. A, B A214; A 242 Gr.1-5; A266 Gr. 1, 2, 4; A283 Gr. A, B, C, D; A285 Gr. A, B, C; A299 Gr. A, B; A328; A366; A515 Gr. 60, 65, 70; A516 Gr. 55; A556 Gr. B2A; A570 Gr. 30, 33, 36, 40, 45; A572 Gr. 42, 50; A606 Gr. all; A607 Gr. 45; 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-X56

Typical analysis of the wire and of all-weld metal (wt.-%)

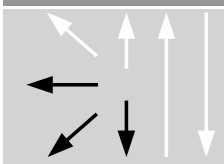
	C	Si	Mn
SAW wire wt.-%	0.12	0.1	1.5
all-weld metal %	0.08	0.25	1.5

Mechanical properties of all-weld metal

Condition	Yield strength R_e	Tensile strength R_m	Elongation A (L_0=5d_0)	Impact work ISO-V KV J		
	MPa	MPa	%	+20 °C	-20 °C	-40 °C
u	**455** (≥ 420)	**550** (500 – 640)	**28** (≥ 20)	**180**	**160**	**70** (≥ 47)

u untreated, as-welded

Operating data



Polarity:	**Redrying of sub-arc flux:**	**ø (mm)**
DC (+)	300 – 350 °C, 2 – 10 h	3.0 4.0

Approvals

Wire/flux combination: TÜV (7811.)
Wire: TÜV (02603.), KTA 1408.1 (8058.), DB (52.014.04), SEPROZ, CE