

BÖHLER EMS 2 Mo // BB 24

SAW wire/flux combination, low-alloyed, creep resistant

Classifications

SAW solid wire		SAW flux			
EN ISO14171-A	EN ISO14171-B	AWS A5.23	EN ISO 14174		
S2Mo	SU2M3	EA2	SA FB 1 65 DC H5		
SAW wire/flux combination					
EN ISO14171-A	EN ISO14171-B	AWS A5.23		AWS A5.23M	
S 46 4 FB S2Mo	S55A4 FB SU2M3	F8A4-EA2-A2/F8	P0-EA2-A2	F55A4-EA2-A2/F55P2-EA2-A2	

Characteristics and typical fields of application

Sub arc wire/flux combination suited for fine-grained constructional steels of increased strength and for 0.5% Mo alloyed boiler, plate and tube steels. Approved in long-term condition up to +550°C service temperature. The metallurgical behaviour of the flux BOEHLER BB 24 is neutral. The subarc wire/flux combination produces very good low temperature impact properties down to -40°C. Excellent slag detachability, smooth beads, good wetting and low hydrogen contents (25 ml/100 g) are further important features. The combination is ideally suited for multipass welding of thick plates. For information regarding the sub-arc welding flux BÖHLER BB 24 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

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

	С	Si	Mn	Мо	Р	As	Sb	Sn
SAW wire wt%	0.1	0.12	1.0	0.5				
all-weld metal %	0.07	0.25	1.15	0.5	≤ 0.012	≤ 0.01	≤ 0.005	≤ 0.005

Mechanical properties of all-weld metal

Condition	Yield strength $R_{p0,2}$	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	540 (≥ 460)	630 (550 – 680)	25 (≥ 20)	140	80	≥ 47
S	≥ 460	550 - 680	≥ 17	≥ 47	≥ 27	
n+a	≥ 280	≥ 440	≥ 26	≥ 125		

u untreated, as-welded

s stress relieved, 580- 620°C/2h/ furnace down to 300°C/air

n+a normalised 920 °C and annealed 620 °C



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Operating data



	Polarity: DC(+)	Redrying of sub-arc flux: 300 – 350 °C, 2 – 10 h	ø (mm) 2.0 2.5
↓ ↓	Preheating, interpass temp treatment are determined b	2.5 3.0 4.0	
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Approvals

Wire/flux combination : TÜV (7810.), NAKS Wire: TÜV (02603.), KTA 1408.1 (08058./08060.), DB (52.014.06), SEPROZ, CE