

# **ESAB OK Flux 10.31 + OK Band 7018**

## **New flux for SAW strip cladding with unalloyed CMn strips.**

OK Flux 10.31 is a neutral, slightly Mo-alloying agglomerated flux designed for SAW strip cladding with unalloyed CMn strips. It is designed for use with 30, 60 or 90 x 0.5mm strips, giving a very good weldability, an excellent slag detachability and a weld surface free of residuals. The flux adds nominally 0.4% Mo to the first layer. The weld metal chemical composition does not significantly change within the range of applicable welding parameters and over a cross section thickness of 3 layers.

### **Hydrogen**

Hydrogen content was measured by a unique test procedure, using 10 mm wide strip cut from a 60 mm wide band. The precise cut was made to obtain a 4.5 gram sample of weld metal for the hydrogen measurement according EN ISO 3690. Welding parameters were 350A, 26V, 12 cm/min. Results from 4 samples welded produced between 2.6 and 2.9 ml/100 g of weld metal.



Full weld bead cladded with OK Flux 10.31/OK Band 7018). ESAB A6 head, 2 x ESAB LAF 1600 DC, PEH control unit. 1000A / 30V / 13 cm/min, DC+. All welds are free of surface defects.



### **Typical applications**

- R&M of shafts and pistons
- Repair of production defects
- Buffer layers
- Pressure vessels

## Classification

**EN 760: SA CS 3 Mo DC**

With OK Band 7018:

## Flux characteristics

Slag type	Basicity index	Alloy transfer	Density	Grain size	Polarity
Calcium silicate SiO <sub>2</sub> -MgO-Al <sub>2</sub> O <sub>3</sub> -(CaF <sub>2</sub> )	1.0 (Bonizewski)	Molybdenum alloying	1.1 kg/kg/dm <sup>3</sup>	0.25 - 1.6 mm	DC +

## Typical chemical composition all weld metal (%) 60 x .5mm strip

Layer	750A-28V-12cm/min			850A-24V-13cm/min			1150A-28V-15cm/min			Strip Analysis
	1	2	3	1	2	3	1	2	3	OK Band 7018
<b>C</b>	0.074	0.072	0.070	0.073	0.070	0.068	0.071	0.065	0.064	0.10
<b>Si</b>	0.44	0.34	0.36	0.41	0.36	0.41	0.43	0.40	0.42	0.26
<b>Mn</b>	0.21	0.09	0.09	0.31	0.13	0.15	0.32	0.14	0.12	0.38
<b>P</b>	0.020	0.023	0.024	0.017	0.020	0.021	0.017	0.021	0.022	0.014
<b>S</b>	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
<b>Cr</b>	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.04	0.04	0.05
<b>Ni</b>	0.06	0.06	0.07	0.05	0.06	0.06	0.05	0.06	0.06	0.02
<b>Mo</b>	0.51	0.61	0.66	0.36	0.48	0.49	0.35	0.54	0.59	<0.01
<b>Cu</b>	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
<b>Brinell Hardness</b>	186	187	196	174	188	186	166	178	185	
<b>Bead height, mm</b>	3.9			4.0			4.5			

## Typical chemical composition all weld metal (%) 90 x .5mm strip

Layer	1000A-30V-13cm/min			1400A-27V-17cm/min			Strip Analysis
	1	2	3	1	2	3	OK Band 7018
<b>C</b>	0.079	0.074	0.076	0.072	0.067	0.067	0.11
<b>Si</b>	0.39	0.40	0.37	0.39	0.37	0.36	0.27
<b>Mn</b>	0.20	0.12	0.09	0.21	0.13	0.12	0.38
<b>P</b>	0.020	0.023	0.025	0.017	0.021	0.022	0.015
<b>S</b>	0.001	0.001	0.001	0.001	0.001	0.001	0.001
<b>Cr</b>	0.04	0.04	0.04	0.04	0.05	0.05	0.05
<b>Ni</b>	0.06	0.07	0.07	0.06	0.06	0.06	0.02
<b>Mo</b>	0.55	0.68	0.74	0.46	0.55	0.59	<0.01
<b>Cu</b>	0.02	0.02	0.02	0.02	0.02	0.02	0.02
<b>Brinell Hardness</b>	185	193	192	166	176	182	
<b>Bead height, mm</b>	3.1			3.5			

## Consumable part numbers

Type	GIN number	width mm	packing
OK Flux 10.31	1031000000		25kg plastic lined bag
OK Flux 10.31	103100000A		55 lb plastic lined bag, North American label
OK Band 7018	1136560200	60 x 0.5	25 kg coil, corrosion protected
OK Band 7018	113656020A	60 x 0.5	25 kg coil, corrosion protected, wooden box, North American label



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