

# WBSAWF-B3SR SUB ARC FLUX

<b>Classifications</b>	<p>AWS A5.17 : F6 A4 – EM12  F7 A8 – F7 P8 – EH12K  AWS A5.23 : F7 A10 – E Ni 1 – Ni1  F8 A6 – F8 P6 – EA3 – A3  F8 A2 – F7 P4 – EB2 – B2  F9P0-EB2-B2, F7P15-ENi3  F9P2-EG-B3, EB9  EF5  F7A4-EM12K  F7A5-EM12K  F7A2-EM12K  DIN 32 522 : B FB 155 AC 10 MHP5  EN760 : A FB 1 55 AC H 5</p>									
<b>Wire Specifications</b>	<p>WBS3Si : AWS A5.23 F7A8-EG-G, F7P8-EG-G  WBSD2 1Ni : AWS A5.23 : ENi1 F8P6ENi1  WBSD3 1Ni 1/4Mo : AWS A5.23 : F8A10-EG-G, F8P10-EG-G  WBSD3 1Ni 1/2Mo : AWS A5.23 : F9A6-EG-G, F9P6-EG-G  WBSD3Mo : AWS A5.23 F8A6-EG-A4, F8P6-EGA4  WBSD2 1NiCrMo : AWS A5.23 : F1-P4-EG-G  WBSD2 1NiCrMo : AWS A5.23 : F1-P4-EG-G  WBS3 NiCrMo : AWS A5.23 : EF5  WBS2-2 1/2Cr1Mo : AWS A5.23 : F9P2-EG-B3  WBS2-Ni-3 : AWS A5.23 : , F7P15-ENi3  WBS2Ni1Cu : AWS A5.23 : EG  WB5Cr ER502 : AWS A5.28 : ER80S-B8  WB9Cr ER505 : AWS A5.28 : ER90S-B9  WB9Cr : AWS A5.23 : EB91</p>									
<b>Product Description</b>	<p>WBSAWF-B3SR is an agglomerated basic sub arc flux.</p>									
<b>Applications</b>	<p>WBSAWF-B3SR is an agglomerated basic flux most suited to weld high-tensile, fine-grain steels as well as steels which require high toughness at sub-zero temperatures. As a results the flux has been used where CTOD is a requirement.  The neutral behaviour of WBSAWF-B3SR in terms of silicon and manganese pick-up and burn off is suited for WBS3-SAW type wires.  The flux has been developed for welding with twin or multi-wire processes.  The flux can be welded on DC and AC.</p> <p>Flux should be re-dried @ 300-350oC for 1 hour, prior to use.</p> <p>Basicity to Boniszewski : ~3</p> <p>Packed in 25Kg plastic bags or 220Kg steel drums.</p>									
<b>Main Constituents of flux</b>	<b>CaO + CaF<sub>2</sub> + MgO</b>		<b>MnO + FeO</b>		<b>SiO<sub>2</sub></b>		<b>Al<sub>2</sub>O<sub>3</sub> + TiO<sub>2</sub> + ZrO<sub>2</sub></b>			
	55%		5%		15%		24%			

Chemical Analysis	C	Si	Mn	Mo	Cr	Ni
WBS2Si	0.05-0.08	0.15-0.25	0.70-1.00	-	-	-
WBS3Si	0.05-0.08	0.25-0.40	1.30-1.50	-	-	-
WBS2SNi1	0.07-0.10	0.15-0.30	0.70-1.10	-	-	0.70-1.00
WBSD3 1Ni 1/4Mo	0.06-0.09	0.25-0.40	1.30-1.50	0.10-0.25	-	0.70-1.00
WBSD3 1Ni 1/2Mo	0.06-0.09	0.25-0.40	1.30-1.50	0.45-0.65	-	0.70-1.00
WBSD3Mo	0.06-0.09	0.20-0.40	1.20-1.40	0.35-0.55	-	-
WBSD21NiCrMo	0.04-0.06	0.35-0.55	1.50-1.70	0.45-0.65	0.90-1.10	0.80-1.00
WBS3NiCrMo	0.10-0.17	0.10-0.20	1.70-2.20	0.45-0.65	0.25-0.50	2.30-2.80
WBS2-1¼Cr1/2Mo	0.05-0.10	0.20-0.40	0.50-1.00	0.45-0.65	1.10-1.30	-
WBS2-2 1/2Cr1Mo	0.08-0.12	0.20-0.40	0.50-1.00	0.90-1.20	2.10-2.50	-
WBS2-Ni-3	0.09-0.13	0.10-0.30	0.60-1.20	-	-	3.10-3.80
WBS2Ni1Cu	0.08-0.12	0.20-0.40	0.80-1.20	0.40-0.60 (Cu)	-	0.80-1.00
WB5Cr ER502	0.08-0.10	0.15-0.40	0.40-0.70	0.45-0.65	4.5-6.0	0.60
WB9Cr ER505	0.08-0.10	0.15-0.40	0.40-0.80	0.80-1.20	8.0-10.5	0.50
WB9Cr (EB91) Nb 0.05, V 0.2, N 0.05	0.08-0.13	0.15-0.40	0.40-0.80	0.80-1.10	8.0-9.5	0.40-0.80

Mechanical Test Properties	PWHT	UTS (N/mm2)	Yield (N/mm2)	EI (%)	C-V (J)	C-V (J)
WBS2Si	As-welded	450-550	>330	>28	>30 (-40°C)	-
WBS3Si	As-welded	540-640	>450	>25	>100(-40°C)	>70 (-60°C)
WBS2 Ni1	As-welded	510-570	>350	>25	>100(-50°C)	>80 (-60°C)
WBSD3 1Ni 1/4Mo	As-welded	580-680	>510	>20	>65 (-60°C)	-
WBS2Ni1Cu	As-welded	540-640	>450	>20	>80 (-40°C)	-
WBSD3 1Ni 1/2Mo	600°C/2Hrs	690-720	>620	>20	>80 (-50°C)	-
WBSD3Mo	600°C/2Hrs	620-660	>550	>24	>90 (-50°C)	-
WBSD21NiCrMo	600°C/2Hrs	690-730	>580	>20	>70 (-30°C)	-
WBS3NiCrMo	As-welded	760-900	>690	>16	>40 (-60°C)	-
WBS2-1¼Cr1/2Mo	600°C/2Hrs	650-720	>550	>22	>80 (-20°C)	-
WBS2-2 1/2Cr1Mo	600°C/2Hrs	600-660	>500	>22	>40 (-30°C)	-
WBS2-Ni-3	600°C/2Hrs	490-660	>400	>22	>60 (-101°C)	-
WB5Cr ER502	750°C/2Hrs	550-660	>500	>22	>40 (+20°C)	-
WB9Cr ER505	750°C/2Hrs	580-680	>450	>20	>40 (+20°C)	-
WB9Cr (EB91)	760°C/2Hrs	630-660	>540	>18	>40 (+20°C)	-

<b>Storage and Re-Drying</b>	<p><b>Storage</b> It is recommended that the WB range of sub arc fluxes are stored in a dry heated store at a minimum temperature of 18°C, and a maximum relative humidity of 60%.</p> <p><b>Re-drying</b> Re-dry @ 350°C for 2 hours and then transfer to holding oven and hold @ 100 - 200°C.</p>
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