


NS-EC_o-1	COBALT BASED ALLOY FOR SURFACING CARBON, LOW ALLOY STEELS, STAINLESS STEELS AND NICKEL BASED ALLOYS			DATA SHEET NO. 133								
SPECIFICATION	AWS A5.13			JIS Z 3251								
CLASSIFICATION	EC _o Cr-C			DC _o CrC-500BR								
PRODUCT DESCRIPTION	A metallurgically balanced rutile basic flux with controlled additions of high purity amphoteric and acid minerals to adjust molten slag to that compatible of cobalt based alloys. The flux is concentrically extruded onto a fully alloyed core wire using a blend of silicates that ensures both coating strength and resistance to moisture absorption.											
WELDING FEATURES OF THE ELECTRODE	The electrode is used to best advantage on DC+ but is also very stable on AC. Slag detachability is good even when using high preheat. Weld beads are bright and smooth - slightly convex in shape. This convex shape combined with preheat of 100°- 300° C provides maximum resistance to solidification cracking on multi-pass welds and when restraint is high.											
APPLICATIONS AND MATERIALS TO BE WELDED	The alloys ability to withstand thermal shock combined with good resistance to abrasion, erosion, corrosion, oxidation and compressional stresses between 20° and 1000°C have led to its extensive usage in the following industries: Steel, cement, marine, petrochemical and power generating. Applications include valves, valve seats, hot shear, blades, punches, dies, hot steel, handling components, catalytic crackers, cutting knives.											
WELD METAL ANALYSIS COMPOSITION % BY Wt.		C	Mn	Si	Mo	P	S	Cr	Ni	W	Fe	Co
	MIN	1.7	-	-	-	-	-	25	-	11	-	
	MAX	3.0	2.0	2.0	1.0	-	-	33	3.0	14	5.0	
	TYPICAL	2.5	0.2	0.6	0.8	0.01	0.01	29	1.0	9.0	1.0	Bal.
WELD METAL HARDNESS (ALL WELD METAL)	TEMP. (°C)	HRC		HV		As is evident hardness reduces above 900°C but resistance to oxidation continues up to 1100°C.						
	20	56		600								
	400	48		480								
	600	38		370								
	800	26		270								
	900	-		205								
WELDING AMPERARE AC or DC+	Ø (mm)	3.2		4.0		5.0						
	MIN	80		110		140						
	MAX	110		150		190						
OTHER DATA	Electrodes that have become damp should be re-dried at 150°C for 1 hour.											
RELATED PRODUCTS	AWS A5.21 RCoCr-C for oxy-acetylene and TIG welding.											