


NSB-312	FOR JOINING DIFFICULT TO WELD HIGH CARBON STEELS AND DISSIMILAR METAL COMBINATION WHEN NO EXACT SPECIFICATION OF THE BASE METAL EXISTS					DATA SHEET NO. 148					
	SPECIFICATION	AWS A5.4		BS EN 1600		JIS Z 3221					
CLASSIFICATION	E312-16		E 29 9 R		D312-16						
PRODUCT DESCRIPTION	<p>A metallurgically based rutile flux with balanced additions of chemically basic and amphoteric minerals that deposits duplex weld metal containing some 40% delta ferrite and 60% austenite.</p> <p>The flux is extruded onto a fully alloyed 29Cr 9Ni core wire using a blend of silicates that ensures both coating strength and resistance to subsequent moisture absorption.</p>										
WELDING FEATURES OF THE ELECTRODE	<p>This unique flux formulation ensures excellent arc stability, ease of initial arc strike and re-strike, minimal spatter on AC and virtually none on DC+.</p> <p>The resultant weld seams are smooth, evenly rippled and free from undercut while slag detachability is excellent. Metal recovery is some 103% with respect to core wire weight.</p>										
APPLICATIONS AND MATERIALS TO BE WELDED	<p>Primarily designed for high carbon steels, cast or wrought, which are well known as difficult to weld or problem steels. The duplex microstructure of the weld metal will tolerate high dilution with such steels while still maintaining its strength ductility and thus resistance to cracking.</p> <p>It can also be used very successfully for joining carbon steels to stainless steels, the only exception to its extensive use on such applications is that at service temperatures above 300°C a drop in weld metal ductility occurs.</p>										
WELD METAL ANALYSIS COMPOSITION % BY Wt.		C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Fe
	MIN	-	0.5	-	-	-	28	8.0	-	-	
	MAX	0.15	2.5	1.0	0.03	0.04	32	10.5	0.75	0.75	
	TYPICAL	0.10	0.9	0.8	0.01	0.02	29	9.5	0.05	0.03	Bal.
WELD METAL PROPERTIES (ALL WELD METAL)	<u>PROPERTY</u>		<u>UNITS</u>		<u>MINIMUM</u>	<u>TYPICAL</u>	<u>OTHERS</u>				
	Tensile strength		N/mm ²		660	820	HV 260				
	0.2% Proof stress		N/mm ²		-	640					
	Elongation on 4d		%		22	23					
	Reduction of Area (RA)		%		-	30					
WELDING AMPERAGE AC or DC+	Ø (mm)	2.0	2.6	3.2	4.0	5.0					
	MIN	20	50	70	100	130					
	MAX	50	80	110	150	210					
OTHER DATA	Electrodes that have become damp should be re-dried at 120°C for 30 mins.										
RELATED PRODUCTS	Please contact our Technical Department for detail.										