



**MANUFACTURERS OF A DIVERSE RANGE OF
ADVANCED WELDING CONSUMABLES**

**SECTION
4**

WI-0304 DS39 RD-100 Rev. 4, 01.07.2013

RD-100	BASIC LOW HYDROGEN ELECTRODE FOR WELDING STEELS WITH A MINIMUM UTS OF 700 N/mm²				DATA SHEET NO. 39						
	SPECIFICATION		AWS A5.5	JIS Z 3212							
CLASSIFICATION		E10016-G	D7016								
PRODUCT DESCRIPTION		The design emphasis of the chemically basic flux is engineered to ensure the optimum weld metal properties demanded by the specification are fully met. The basic flux containing the appropriate alloying elements but minimal iron powder, is extruded onto a high purity ferritic core wire and bound with a blend of silicates that ensure both coating strength and a coating resistant to subsequent moisture absorption.									
WELDING FEATURES OF THE ELECTRODE		The chemical nature of the flux together with its controlled coating factor allows the electrode to be used at relatively low amps. This factor together with the fairly fluid but quick freezing slag facilitate vertical up welding including controlled penetration root runs. Overall the arc is very stable, slag detachability is good, fillet welds are slightly convex and metal recovery is some 98% with respect to weight of the core wire.									
APPLICATIONS AND MATERIALS TO BE WELDED		Ferritic high strength low alloy (HSLA) steels, eg: quenched and tempered AISI 4130, 4140, BS970 709M40 (En19), and DIN 42CrMo4. Fabrication of higher strength steels involving a requirement to meet a minimum all-weld metal UTS of 700 N/mm ² (100 ksi) with butt welds in the stress relieved condition. For offshore oil well-head process pipework and fittings, these nickel-free electrodes satisfy NACE MR-0175 requirements intended to ensure resistance to sulphide-induced stress corrosion cracking combined with good sub-zero notch toughness.									
WELD METAL ANALYSIS COMPOSITION % BY Wt.			C	Mn	Si	S	P	Cr	Ni	Mo	Fe
		MIN	0.05	0.5	0.2	-	-	0.1	-	0.2	
		MAX.	0.15	2.0	0.8	0.02	0.03	0.4	1.8	0.4	
		TYPICAL	0.10	1.5	0.4	0.01	0.01	0.2	1.6	0.3	Bal.
		<i>* Undiluted weld metal shall have the minimum of at least one of the element as specified on AWS A5.5-2006</i>									
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	690	750					
		0.2% Proof stress		N/mm ²	600	680					
		Elongation on 4d		%	16	25					
		Reduction of Area (RA)		%	-	65					
		Impact energy -20 °C		J	-	80					
WELDING AMPERAGE AC or DC+		Ø (mm)	2.6	3.2	4.0	5.0					
		MIN	50	70	130	180					
		MAX	85	125	170	220					
OTHER DATA		Electrodes that have become damp should be re-dried at 150°C for 1 hour									
RELATED PRODUCTS		Please contact our Technical Department for detail									