


<b>HV-1000</b>	<b>LIME RUTILE HARDFACING ELECTRODE          DEPOSITING WELD METAL          WITH COMPLEX CARBIDE          PROVIDING HIGH HOT HARDNESS          WITH EXCELLENT RESISTANCE TO ABRASION</b>				<b>DATA SHEET          NO.          121</b>																																													
SPECIFICATION	-																																																	
CLASSIFICATION																																																		
PRODUCT DESCRIPTION	<p>The design emphasis of the flux is designed to ensure a slag solidification range that allows the chrome carbide particles to be evenly distributed within the austenitic alloy matrix, so ensuring complete uniformity of hardness.</p> <p>The balanced lime rutile flux contains the appropriate alloying elements and is bound with a blend of silicates that ensures both coating strength and resistance to moisture absorption.</p>																																																	
WELDING FEATURES OF THE ELECTRODE	<p>The electrode welds with a stable arc and strikes and re-strikes readily. The weld bead is smooth but not as bright as that obtained with straight chrome carbide types and the weld profile is slightly more convex.</p> <p>The metal recovery is some 180% with respect to weight of the core wire, thus reducing welding time. The weld deposits are non-machinable and non heat treatable.</p>																																																	
APPLICATIONS AND MATERIALS TO BE WELDED	<p>In addition to conventional applications, involving heavy abrasion resistance against minerals etc, this alloy is used to particular advantage when the component to be surfaced is subject to use at elevated temperatures, eg: bell housings on blast furnaces, cement furnaces, pump casings and so forth.</p>																																																	
WELD METAL ANALYSIS COMPOSITION % BY Wt.	<table border="1"> <thead> <tr> <th></th> <th>C</th> <th>Mn</th> <th>Si</th> <th>Cr</th> <th>Mo</th> <th>W</th> <th>Nb</th> <th>V</th> <th>Ti</th> <th>Fe</th> </tr> </thead> <tbody> <tr> <td>Min.</td> <td>3.0</td> <td>-</td> <td>0.5</td> <td>24</td> <td>2.0</td> <td>3.0</td> <td>2.0</td> <td>1.0</td> <td>-</td> <td></td> </tr> <tr> <td>Max.</td> <td>4.0</td> <td>1.5</td> <td>1.5</td> <td>32</td> <td>4.0</td> <td>4.5</td> <td>3.0</td> <td>3.0</td> <td>1.0</td> <td></td> </tr> <tr> <td>Typical</td> <td>3.2</td> <td>0.7</td> <td>0.8</td> <td>25</td> <td>3.2</td> <td>3.8</td> <td>2.2</td> <td>1.6</td> <td>0.5</td> <td>Bal.</td> </tr> </tbody> </table>							C	Mn	Si	Cr	Mo	W	Nb	V	Ti	Fe	Min.	3.0	-	0.5	24	2.0	3.0	2.0	1.0	-		Max.	4.0	1.5	1.5	32	4.0	4.5	3.0	3.0	1.0		Typical	3.2	0.7	0.8	25	3.2	3.8	2.2	1.6	0.5	Bal.
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WELD METAL HARDNESS (ALL WELD METAL)	AS WELDED (150°C PRE-HEAT & INTERPASS)			HRC	HV	<p>The weld metal exhibits thermal stability and resistance to oxidation up to 1000°C.</p> <p>HV (typical)            400°C HV 350            600°C HV 290            800°C HV 240</p>																																												
1 <sup>st</sup> Layer				48 – 54	480 – 575																																													
2 <sup>nd</sup> Layer				56 – 62	610 – 745																																													
3 <sup>rd</sup> Layer				58 – 64	655 – 800																																													
Actual hardness will be affected on base material composition, number of layers, heat input and welding conditions																																																		
WELDING AMPERAGE AC or DC+	Ø x Length (mm)	3.2 x 350	4.0 x 400	5.0 x 400																																														
Min.		100	150	200																																														
Max.		150	220	260																																														
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																																																	