Wear Resistance Ltd.

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TECHNICAL DATA SHEET No. 15

Product:	**Grade WRST/HE Electrodes.**
Description:	A Sintered Tungsten Carbide alloy tubular electrode consisting of pre-formed particles of Sintered Tungsten Carbide in a Carbon/Tungsten/ Chromium/Iron matrix. Baked on flux containing slag forming minerals and fero-alloys to stabilise the arc, deoxidise the weld metal and add alloying elements where required.
Nominal Composition:	C. 5.6%, W. 38%, Cr. 8%, Ni. 3%, Balance Fe. + alloying elements.
Hardness:	83 HRA average at 20° C.
	480 HB average at 600° C.
Availability:	6.3mm dia. x 355mm long.
	9.5mm dia. x 405mm long.
Typical Applications:	Very high abrasion, medium impact applications, where high temperatures are expected up to 650° C.
Application Instructions:	
A) Work Preparation:	It is essential that all surfaces to be welded are clean and free from rust, scale etc. This may be achieved by wire brushing, or in the case of heavy rust or scale, by grinding.
B) Pre-Heating:	The workpiece should be pre-heated to 100° C to reduce cracking of the deposit.
C) Deposition:	The welding generator must be of DC type for these electrodes, and the electrode should be connected to the positive pole. Wherever possible the electrode should be deposited in the down hand position, i.e. with the workpiece horizontal. The electrode should be deposited with minimum amps consistent with good weld flow and a steady arc - as a guide this should be in the range 180-220 amps for the 6.3mm dia. electrode & 220-280 amps for the 9.5mm dia. electrode.Where possible the required thickness of deposit should be achieved in one pass, up to a thickness of 6mm, to reduce cracking. Each run or bead should be deposited with a weave to produce a run 10-12mm wide, and should overlap the previous run by 5-6mm. The distance from the electrode tip to the weld pool should be 10mm max and the electrode should be positioned at an angle of 45-60 to the workpiece.
D) Cooling:	Slow cool large workpieces in still air or cover with thermal blankets, smaller workpieces should be immersed in suitable insulating material until cold.
E) Storage & Drying of Electrodes:	Electrodes should be stored in a dry, well ventilated store under heated conditions where the humidity is below the general level (0 - 60% humidity). Redrying should be carried out at 250° C for 12 hours if the electrodes have been stored in adverse conditions, or the deposit shows signs of porosity.