DUROXITE®

DUROXITE® CR-ZERO WIRE

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General Product Description

Duroxite® Cr-zero WIRE is a non-chromium bearing flux cored hardfacing wire for open arc welding. The deposited overlay contains boron carbides which has wear resistance and hardness equal to or greater than conventional chromium carbide deposits. Duroxite® Cr-zero WIRE is specifically formulated to eliminate chromium in the wire, and still provide outstanding wear resistance. Since there are no chromium alloys added in the welding wire, the emission of hexavalent chromium during welding is reduced or completely eliminated (depending on the chromium content in substrate materials or pre-existing weld deposit). Duroxite® Cr-zero WIRE is a good choice of hardfacing wire for earthmoving applications when the hexavalent chromium smoke is a big concern at the workshop. It is suitable for single and double-layer deposit.

Key Benefits

- Duroxite® Cr-zero WIRE provides very good abrasion resistance for earthmoving applications where hexavalent chromium in welding fumes cannot be reduced by work practice controls.
- Duroxite® Cr-zero WIRE maintain same wear resistance guaranteed from surface through 75% depth of overlay in multi-layer deposit.

Typical Applications

Duroxite® Cr-zero WIRE is used for hardfacing components undergoing wear by earth, sand and abrasives in the agricultural, quarry, mining, and public works fields.

Examples: Mixer shafts, impellers, buckets, shovels, transport screws, and crushers for the concrete industry.

Standard Dimensions

Standard Diameters	Metric	Imperial
Metric	1.6 mm	2.8 mm
Imperial	1/16''	7/64''

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Mechanical Properties

Typical all-weld metal analysis (Weight %)					
C	Mn	Si	Ni	B	Fe
0.5	2.0	1.2	1.7	4.0	Balance

Typical all-weld metal surface hardness [1]
Hardness: 2-layer deposit on mild steel: 63 to 69 HRC
Hardness: 3-layer deposit on mild steel: 65 to 69 HRC

[1] Surface hardness is measured on machined flat surface just below overlay surface.

Wear Properties	ASTM G65 – Procedure A weight loss [2]	
	Surface	75% depth of overlay [3]
Multiple passes	0.18 g maximum	0.18 g maximum

[2] ASTM G65 is a standard test measuring sliding abrasion resistance using a dry sand/rubber wheel apparatus. ASTM G65-Procedure A is the most severe test method.
[3] ASTM G65 wear test is conducted at 75% depth of the overlay materials to ensure consistently good wear resistance from the top surface through to the depth of 75% of the overlay.

Welding recommendations

Welding conditions		
Current type	Shielding gas	Welding positions
DCEP (Direct current electrode positive)	None (Self-shielded)	Flat, half up, half down

Welding parameters recommendations									
Diameter		Amperage (A)		Voltage (V)		Stick-out			
						Range		Optimum	
Metric	Imperial	Range	Optimum	Range	Optimum	Metric	Imperial	Metric	Imperial
1.6 mm	1/16″	225–300	270	20–26	23	15.9 mm–25.0 mm	5/8″–1″	20 mm	3/4″
2.8 mm	7/64″	290–310	300	29–31	30	15.9 mm–25.0 mm	5/8″–1″	20 mm	3/4″

Recovery: 95%

Delivery Conditions

Standard package	Diameter		Weight	
Type	Metric	Imperial	Metric	Imperial
Spool	1.6 mm	1/16″	15 kg	33 lbs
Spool	2.8 mm	7/64″	25 kg	55 lbs

Fabrication and Other Recommendations

The welded overlay components can be processed by welding, cutting, forming and machining. Specific recommendations can be found in the Duroxite® Product brochure or by consulting your local technical support representative.