DUROXITE™

DUROXITE 100 PIPE

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General Product Description

Duroxite 100 Pipe is manufactured by depositing chromium-rich, abrasion-resistant materials on a mild steel base using a traditional arc welding process. The hardfacing overlay pipe is designed with extreme wear capabilities for working in the most severe environments. Duroxite 100 Pipe is available with double or multiple overlay passes. Schedule 40 and Schedule 80 steel pipe as well as tubing can be hardfaced. Overlay Pipe can be fabricated as square-to-round transitions, elbows, T or Y-shaped, or as long sweeps.

Key Benefits

- Same wear resistance guaranteed from surface down to 75% of the overlay
- Optimal carbide composition to provide good combination of wear resistance and homogenous bonding

Typical Applications

Duroxite 100 Pipe is widely used in the mining, cement, oil sands, dredging, recycling and steel production industries.
Some specific applications include:

Mining, Cement, Oil Sands	Slurry pumps, chutes
Dredging	Dredging pipes
Recycling	Cullet glass
Steel	Air ducts, carbon injection pipes, suction lines, troughs

For more information on applications see the Duroxite Product brochure.

DUROXITE 100 PIPE

Standard Dimensions

Outer Diameter		Length		Other Custom Specifications
Metric unit	**Imperial unit**	**Metric unit**	**Imperial unit**	• All available gauges > Schedule 40 steel pipe • Lengths cut or fabricated as needed • Stainless steel and other pipe grades available • Custom diameter lengths and gauge sizes are available upon request • Diameters larger than 36" can be fabricated from formed Duroxite 100 plate
150 mm	6''	0.9 m	3'	
200–350 mm	8–14''	0.9–3.0 m	3–10'	
350–600 mm	14–24''	0.9–6.0 m	3–20'	
600–900 mm	24–36''	1.8–6.0 m	6–20'	

Mechanical Properties

Surface Hardness

Number of overlay passes	Typical surface hardness [1]
Double or multiple	59 to 62 HRC (675 to 750 HV)

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

Wear Properties

Number of overlay passes	ASTM G65 – Procedure A weight loss [2]	
	Surface	75% depth [3]
Double or multiple	0.18 g maximum	0.18 g maximum

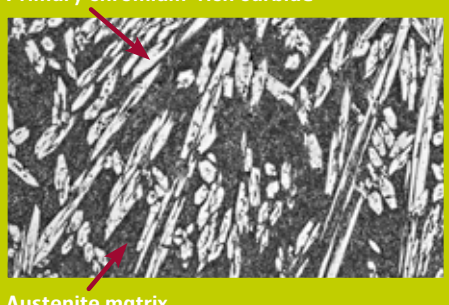
[2] ASTM G65 is a standard test measuring sliding abrasion resistance using a dry sand/rubber wheel apparatus. ASTM G65-Procedure A is the most severe test method.

[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 75% of the depth of the overlay.

Microstructure

The microstructure of Duroxite 100 Pipe is composed of a high proportion of extremely hard primary M_7C_3 chromium-rich carbides with a typical hardness of 1700 HK[4] dispersed evenly in a ductile eutectic austenite matrix. The volume fraction of primary carbides is maintained between 30 to 50% to provide a good combination of wear resistance and homogenous bonding.

[4] HK is the Knoop microhardness used primarily for very brittle materials.



Fabrication and Other Recommendations

Welding, cutting, forming and machining

Workshop recommendations can be found in the Duroxite™ overlay brochure or you can consult your local technical support representative for more information.