



DUROXITE 210



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General Product Description

Duroxite 210 consists of specially formulated abrasive materials deposited on mild steel backing plate that is suitable for extremely severe abrasive wear and high to moderate impact applications. The overlay material is composed of primary chromium-rich carbides and refined multiple-alloy complex carbides dispersed evenly in a ductile eutectic austenite matrix. Duroxite 210 is available in single and double layers.

Key Benefits

- Multiple-alloy complex carbides are harder and finer than chromium carbides and interlock between the primary chromium carbides to provide better wear resistance
- Longer service life and better wear resistance compared to traditional chromium carbide overlay plate
- Double-layer overlay maintains full wear resistance up to 600° C (1100° F)

Typical Applications

Duroxite 210 is widely used in many industries including mining, cement and steel. Some specific applications include:

Mining	Chutes, liner plates, conveyors sides, underground mine skips
Cement	Cement furnace components, sinter plant parts, fan blades, mixer blades, crews, gyratory mantles, coal and cement pulverizer rolls, raw material crushing components, molding panels
Steel	Ore sintering, crushing, riddling, blast furnace hoppers, throats, and ovens

For more information on applications see the Duroxite Product brochure.

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Standard Dimensions

Standard overlay thicknesses				Standard plate sizes	
Single pass		Multiple passes			
Metric unit	Imperial unit	Metric unit	Imperial unit	Metric unit	Imperial unit
3 mm on 6 mm	1/8" on 1/4"	6 mm on 6 mm	1/4" on 1/4"	1.2 m x 2.4 m	4' x 8'
		6 mm on 10 mm	1/4" on 3/8"	1.5 m x 3.0 m	5' x 10'
		10 mm on 10 mm	3/8" on 3/8"	1.8 m x 3.0 m	6' x 10'
				2.4 m x 3.0 m	8' x 10'

Other plate sizes and custom thicknesses can be produced upon request.

Mechanical Properties

Surface Hardness

Number of overlay passes	Typical surface hardness ¹⁾
Single pass	57 to 60 HRC (630 to 700 HV)
Double passes	60 to 65 HRC (700 to 850 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 of overlay ³⁾
Single pass	0.19 g maximum	0.19 g maximum
Double passes	0.12 g maximum	0.12 g maximum

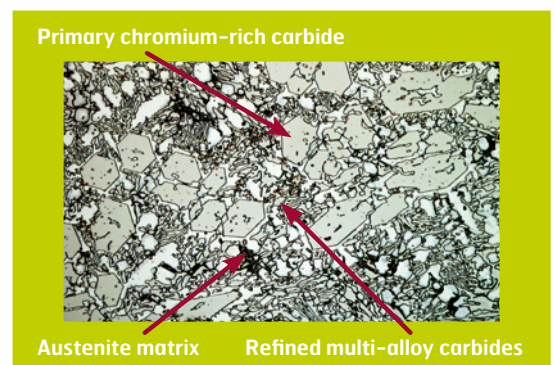
²⁾ ASTM G65 is a standard test measuring sliding abrasion resistance using a dry sand/rubber wheel apparatus. ASTM G65–Procedure A is the most severe test method.

³⁾ ASTM G65 wear test is conducted at 75 % depth of the overlay materials to ensure consistently good wear resistance from top surface through to the depth of 75 % of the overlay.

Microstructure

The microstructure of Duroxite 210 contains primary chromium-rich carbides and refined multiple-alloy complex carbides with a typical hardness of 2500 to 3000 HK⁴⁾ dispersed evenly in a ductile eutectic austenite matrix. The typical volume fraction of primary chromium-rich carbides is maintained between 30 to 40% with 7 to 10% of multi-alloy complex carbides.

⁴⁾ HK is the Knoop microhardness used primarily for very brittle materials or thin sheets.



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Tolerances

Thickness

Overall and overlay thickness tolerances can be guaranteed within $\pm 10\%$ of specified thickness.

Flatness

Plate flatness tolerance can be guaranteed within ± 3 mm ($\pm 1/8$ ") over 1.5 m (5') plate length for plate dimensions equal to or less than 1.5 m (5') x 3.0 m (10'). For plates greater than 1.5 m (5') wide by 3.0 m (10') long, the following flatness guarantees apply.

Standard overlay thicknesses		Flatness tolerance			
		1.8 m x 3.0 m (6' x 10')		2.4 m x 3.0 m (8' x 10')	
Metric unit	Imperial unit	Metric unit	Imperial unit	Metric unit	Imperial unit
5 mm on 7 mm	3/16" on 5/16"	25 mm	1"	41 mm	1-5/8"
6 mm on 6 mm	1/4" on 1/4"	25 mm	1"	Not available	
10 mm on 10 mm	3/8" on 3/8"	12 mm	1/2"	25 mm	1"
12 mm on 12 mm	1/2" on 1/2"	6 mm	1/4"	16 mm	5/8"

For custom sizes, please consult your local sales representative or local Hardox Wearparts center for flatness guarantees.

Delivery Conditions

Duroxite 210 is normally supplied in an as-welded condition, but can also be supplied in a ground condition upon request.

Fabrication and Other Recommendations

Welding, cutting, forming and machining

Recommendations can be found in the Duroxite Product brochure, or consult your local technical support representative.

