

Duroxite® 200

General Product Description

Duroxite® 200 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® 200 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® 200 is widely used 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.

Available Dimensions

Standard overlay thicknesses	
Single pass	Multiple Passes
Metric unit	Metric unit
3 mm on 6 mm	6 mm on 6 mm
—	6 mm on 10 mm
—	10 mm on 10 mm

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

Standard plate sizes

Metric unit	Imperial unit
1.2 m x 2.4 m	4' x 8'
1.4 m x 3.0 m	4.6' x 10'
1.5 m x 3.0 m	5' x 10'
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

Wear properties			ASTM G65 – Procedure A weight loss ²⁾	
Number of overlay passes	Typical surface hardness ¹⁾ (HRC)	Typical surface hardness ¹⁾ (HV)	Surface (g max)	75 % depth of overlay ³⁾ (g max)
Single pass	57 - 60	630 - 700	0.19	0.19
Double passes	60 - 65	700 - 850	0.12	0.12

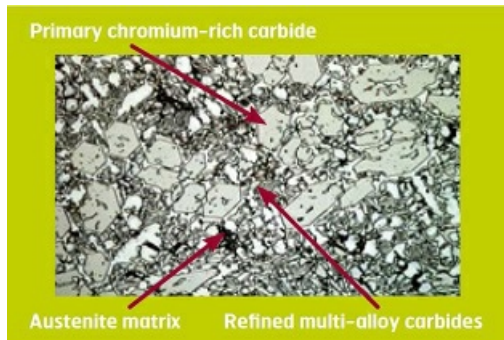
¹⁾ Surface hardness is measured on machined flat surface just below overlay surface.

²⁾ ASTM G65 - Procedure A weight loss, 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 - Procedure A weight loss, 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.

Microstructure

The microstructure of Duroxite® 200 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.

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 over 1.5 m plate length, Metric unit	
Metric unit	1.8 m x 3.0 m	2.4 m x 3.0 m
5 mm on 8 mm	25	41
6 mm on 6 mm	25	—
10 mm on 10 mm	12	25

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

Delivery Conditions

Duroxite® 200 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® Products brochure, or consult your local technical support representative.

Safety precautions

When welding or cutting Duroxite® products, smoke is produced containing harmful fumes and gases that are chemically highly complex and difficult to easily classify. The major toxic component in the fumes and gases produced in the process is hexavalent chromium. The proper exhaust ventilation equipment and fume-extraction torches are recommended, as well as suitable protective clothing and respiratory protection for operators.