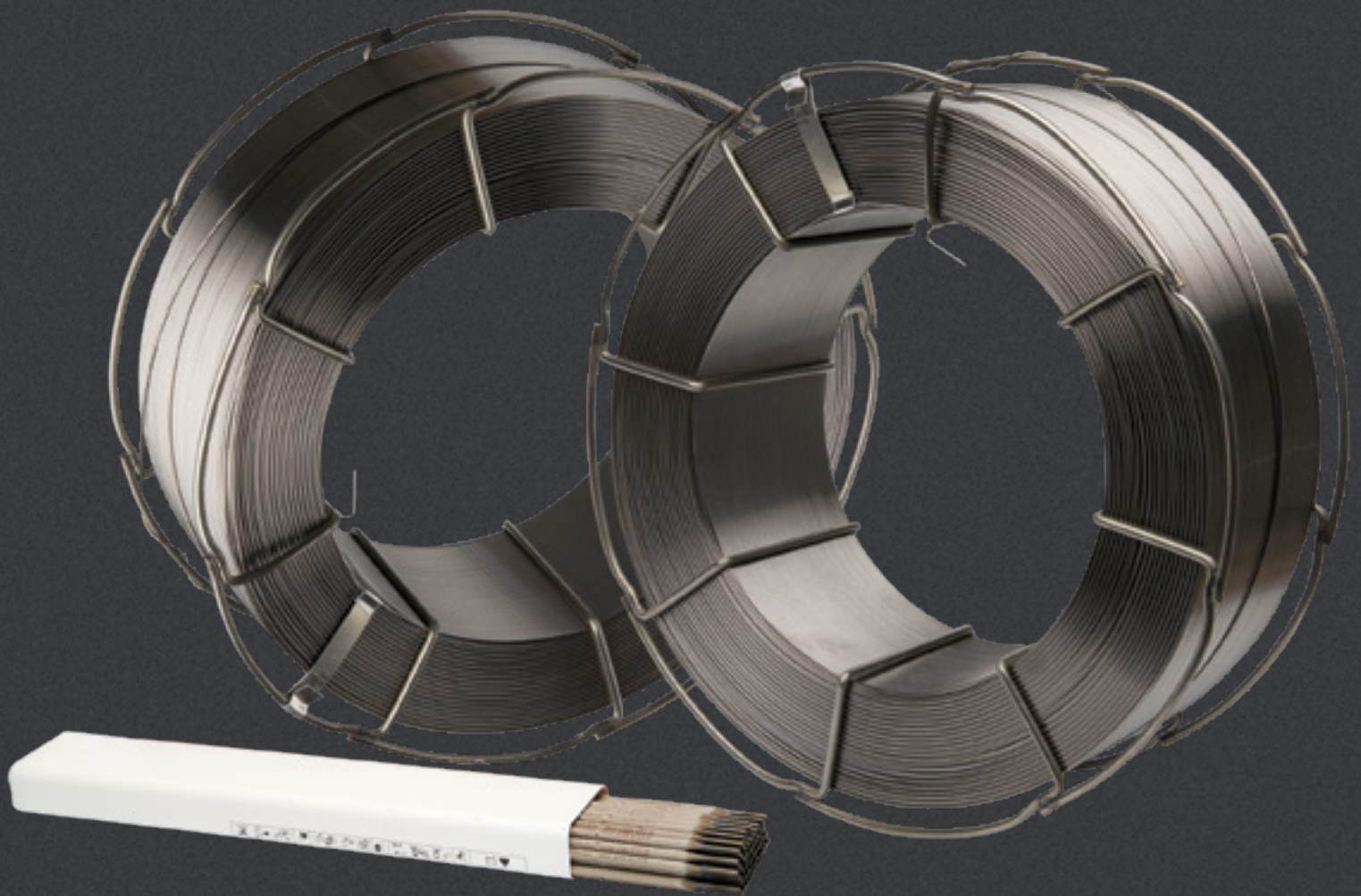


**DUROXITE®**

**OVERLAY  
WIRES AND  
ELECTRODES**



# HARDFACING FOR INSTALLATION AND MAINTENANCE

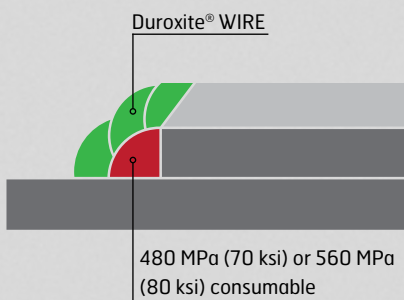
Hardfacing with Duroxite® wire and electrodes is a versatile means of increasing the wear resistance of wear parts and other equipment operating under harsh abrasive conditions.

One important application is to ensure the installation points of Duroxite® plates have the same wear resistance as the plates, as described below. Duroxite® welding consumables are also applied for maintenance and repairs that will increase service life and extend maintenance intervals.

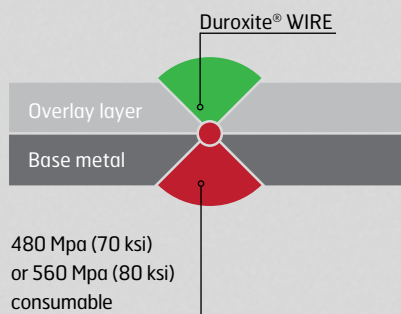
When using Duroxite® welding consumables, preheating, inter-pass temperature, and post-weld heat treatment should be applied according to the base metal recommendations.

## WELDING AND BOLTING DUROXITE® TO THE BASE METAL

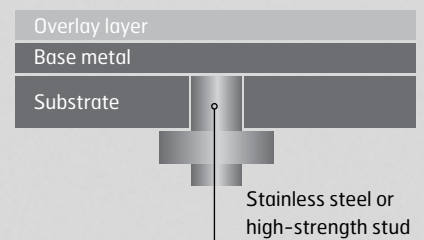
### JOINING DUROXITE® PLATE TO MILD STEEL



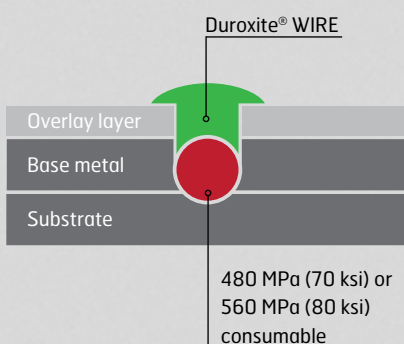
### JOINING DUROXITE® PLATES END TO END



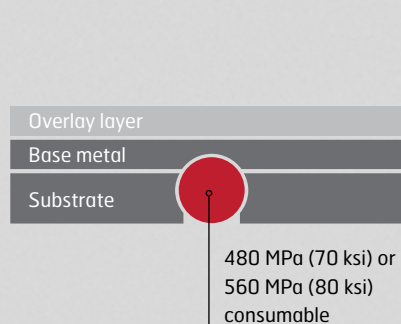
### STUD WELDING OF DUROXITE® PLATE FROM BASE METAL SIDE



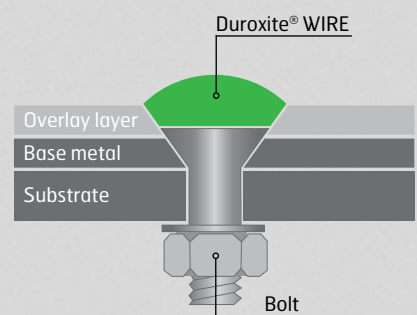
### PLUG WELDING OF DUROXITE® PLATE FROM OVERLAY SIDE



### PLUG WELDING OF DUROXITE® PLATE FROM BASE METAL SIDE



### BOLTING DUROXITE® PLATE THROUGH COUNTERSUNK HOLE



# DUROXITE® WIRE

## APPLICATIONS



Ground engaging tool (GET) hardfaced with Duroxite® 200 WIRE.



The insides of screen holes protected with Duroxite® 100 WIRE.



Recycling hammer hardfaced with Duroxite® 300 WIRE.



Shredder rotor hardfaced with Duroxite® AP WIRE.



Opening in a Duroxite® plate hardfaced with Duroxite® AP WIRE to protect the part without needing to move the assembly.

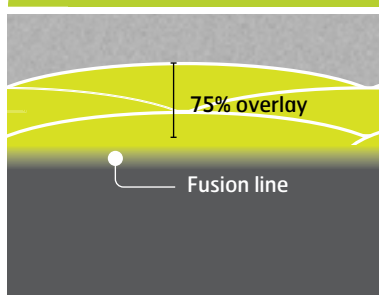


Plug welds with Duroxite® WIRE to protect the soft joining wire that is used to secure the Duroxite® plates.

# WIRES AND ELECTRODES OVERVIEW

	SLIDING WEAR	SEVERE SLIDING WEAR	EXTREME SLIDING WEAR
	<b>DUROXITE® 100 WIRE</b>	<b>DUROXITE® 200 WIRE</b>	<b>DUROXITE® 300 WIRE</b>
<b>DESCRIPTION</b>	A flux cored open-arc wire for hardfacing components subject to sliding wear applications.	A flux cored open-arc wire for hardfacing components subject to severe sliding wear applications.	A flux-cored open-arc or gas shielded arc welding wire for hardfacing components subject to extremely severe sliding wear applications.
<b>PROPERTIES</b>	<p><b>Chromium carbide overlay (CCO)</b></p> <p><b>Bulk hardness:</b> 60-65 HRC with three-layer deposit on mild steel.</p> <p><b>Maximum layers:</b> Three.</p> <p><b>ASTM G65-Procedure A weight loss:</b> 0.18 g max.</p>	<p><b>Complex carbide overlay</b></p> <p><b>Bulk hardness:</b> 60-65 HRC with two-layer deposit on mild steel.</p> <p><b>Maximum layers:</b> Two.</p> <p><b>ASTM G65-Procedure A weight loss:</b> 0.12 g max.</p>	<p><b>Ultra-fine complex borocarbide overlay</b></p> <p><b>Bulk hardness:</b> 67-70 HRC.</p> <p><b>Maximum layers:</b> Two.</p> <p><b>ASTM G65-Procedure A weight loss:</b> 0.10 g max.</p>
<b>TYPICAL APPLICATIONS</b>	Crusher hammers, gyratory crusher cones and mantles, dredging pumps, slurry pipes, dragline bucket liners, coal pulverizer rolls, coke hammers, sand dredging parts, mining and earthmoving components and sorting screens.	Sand and earthmoving equipment, ground engaged teeth, slurry pipes, railway ballast tampers, dredge buckets and lips, sand dredging parts, dragline bucket liners, crushing equipment, brick industry components, coke hammers, rippers, sizing screens, Muller tyres, catalyst lift pipes, pump impellers, fan blades, rockwool rolls, wear plates or wear parts operating at high temperature in the steelmaking industry.	Crusher rolls, skip liners, slurry pipes, slurry pumps, conveyor chains, excavator bucket liners, fan blades, deflector blades, cranker crushers, surge bins, feed chutes, ore chutes, screw augers, wear liner plates, ash handling equipment liners, grain shredding hammers, sugar mill knives, row crop sweeps, fracking blender pumps, snowplow shoes, demolition tools.

## GUARANTEED OVERLAY PROPERTIES



The wear properties of Duroxite® are guaranteed throughout the overlay down to 75% of the overlay thickness. The remaining 25% is necessary to maintain good bonding to the base material.



**DOWNLOAD**  
**DUROXITE® DATASHEETS ARE**  
**AVAILABLE BY SCANNING**  
**THE QR CODE, OR VISITING**  
[www.duroxite.com](http://www.duroxite.com)

NO CHROMIUM SMOKE	FOR ROLLER MAINTENANCE	ALL POSITIONS WIRE	ALL POSITIONS ELECTRODE
<b>DUROXITE® CR-FREE WIRE</b>	<b>DUROXITE® ROLLER WIRE</b>	<b>DUROXITE® AP WIRE</b>	<b>DUROXITE® AP ELECTRODE</b>
A wire suitable for overlay welding situations where it is difficult to protect the welder from the emission of hexavalent chromium smoke.	A flux-cored open-arc welding wire for repairing crusher rolls in the cement and power industries.	A wire with properties that make it suitable for all-position (AP) welding, including flat, horizontal, vertical and overhead welding.	An electrode with properties that make it suitable for all-position (AP) welding, including flat, horizontal, vertical and overhead welding.
<p><b>Chrome-free borocarbide overlay</b></p> <p><b>Bulk hardness</b> 63-69 HRC with two-layer deposit on mild steel.</p> <p><b>Maximum layers:</b> Two.</p> <p><b>ASTM G65-Procedure A weight loss:</b> 0.18 g max.</p>	<p><b>Chromium carbide overlay (CCO)</b></p> <p><b>Bulk hardness</b> 58-63 HRC with three-layer deposit on mild steel.</p> <p><b>Maximum layers:</b> 75 mm (3").</p> <p><b>ASTM G65 Procedure A weight loss:</b> 0.18 g max.</p>	<p><b>Martensitic overlay for all-positions welding</b></p> <p><b>Bulk hardness</b> 56-60 HRC with three-layer deposit on mild steel.</p> <p><b>Maximum layers:</b> Three.</p>	<p><b>Martensitic overlay for all-positions welding</b></p> <p><b>Bulk hardness</b> 55-60 HRC with three-layer deposit on mild steel.</p> <p><b>Maximum layers:</b> Three.</p>
Mixer shafts, impellers, buckets, shovels, transport screws, and crushers for the concrete industry.	Vertical mill rollers (cement), coal pulverizers (power).	Bucket teeth, tillage tools, bucket lips, bucket sides, cutting edges, sand dredge equipment, dragline buckets, conveyor chutes, grizzly bars, screw flights, metal shredders, sliding metal parts, tire shredder knives, extruder screws, tamper feet, churn drills, muller tires. Especially applicable for all-position welding and re-instating of hardfacing sealing runs on clad wear plate fabrications.	Bucket teeth, tillage tools, bucket lips, bucket sides, cutting edges, sand dredge equipment, dragline buckets, conveyor chutes, grizzly bars, screw flights, metal shredders, sliding metal parts, tire shredder knives, extruder screws, tamper feet, churn drills, muller tires. Especially applicable for all-position welding and re-instating of hardfacing sealing runs on clad wear plate fabrications.

### SAFETY PRECAUTIONS

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

# DUROXITE® 300 WIRE FOR EXTREME SLIDING WEAR

**Hardfacing steel with Duroxite® 300 WIRE  
creates a layer that withstands sliding wear  
in all conditions.**

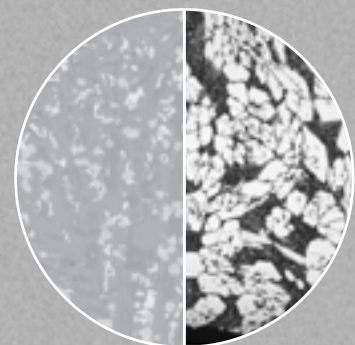
Duroxite® 300 WIRE is a cost-effective alternative to tungsten carbide, having the same service life and better impact resistance. It is designed to weld on carbon steel or low alloy steel substrates experiencing severe wear in both dry and wet abrasive environments at ambient or elevated temperatures up to 600 °C (1112 °F).

## EXTREME SLIDING WEAR



## UNIQUE HARDFACING MATERIAL IN THE OVERLAY

Duroxite® 300 WIRE consists of specially formulated abrasive materials. The overlay contains a uniquely high volume of an ultra-fine complex borocarbide phase with a grain size refined down to 500 nm. The borocarbidies are approximately 200 times finer than traditional chromium carbides.



Duroxite® 300 WIRE borocarbide phase (left)  
versus traditional chromium carbide phase

# DUROXITE® CR-FREE WIRE FOR WELDER PROTECTION

**Duroxite® Cr-Free WIRE provides great abrasion resistance for applications where hexavalent chromium in the welding fumes is a concern.**

The Duroxite® Cr-Free WIRE has wear resistance and hardness equivalent to conventional chromium carbide deposits, such as in Duroxite® 100 WIRE. Duroxite® Cr-Free WIRE maintains the same wear resistance guaranteed from the surface through a depth of 75% of the overlay in multi-layer deposits.



Lip shrouds welded with Duroxite® Cr-Free WIRE.

**LEARN MORE AT**  
**[www.duroxite.com](http://www.duroxite.com)**

810-en-Duroxite® overlay wires and electrodes - v1 - 2024 - AplusM

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**DUROXITE®**