CCO SPECIALISTS

QMAX™ 50

TUNGSTEN CARBIDE / Ni-Si-B OVERLAY · PTA DEPOSITED

QMAX™ 50 is the top of the QAME tungsten range — for the duties where chromium carbide and even tungsten CCO reach their limits. It is an overlay of 50% fused tungsten carbide granules locked in a tough nickel-silicon-boron (Ni-Si-B) matrix, deposited by plasma transferred arc (PTA) welding on a mild steel base.

PTA deposition produces a true metallurgical bond with minimal dilution, so the fused WC granules retain their full hardness right through the deposit. The result: outstanding wear life in severe sliding abrasion with medium impact — chutes, GET, fan blades, mixer paddles and ore handling systems.

MATERIAL & DEPOSIT

- 50% fused tungsten carbide granules — hard-phase volume fraction
- Tough Ni-Si-B matrix locks the carbides and resists spalling
- PTA welding — metallurgical bond with minimal penetration / dilution

MECHANICAL PROPERTIES

- Bulk hardness >700 HV30 (>58 HRC)
- Carbide micro-hardness >1900 HV0.1
- Handles severe sliding abrasion with medium impact

SUPPLY FORMS

- Full sheets and cut panels — maximum overall thickness 12 mm
- Applied directly to customer components and shaped parts
- Mild steel base standard — alternative base grades on request

Benefits

- Metallurgical bond with minimal penetration / dilution
- Can be applied to shaped items
- Outstanding fine-particle abrasion resistance from fused WC
- Tough Ni-Si-B matrix resists spalling under medium impact
- Proven performance against Q&T steel

Applications

Severe sliding abrasion with medium impact, such as:

- Transfer chutes & skirt liners
- Ground engaging tools (GET)
- Fan blades
- Mixer paddles
- Ore handling systems
- Drilling parts
- Liner plates
- Extruders

TYPICAL PROPERTIES

Property	QMAX™ 50
Duty	Severe sliding abrasion with medium impact
Bulk hardness	>700 HV30 (>58 HRC)
Carbide micro-hardness	>1900 HV0.1
Hard-phase volume fraction	50% fused tungsten carbide
Maximum overall thickness	12 mm
Matrix	Ni-Si-B
Deposition	PTA — metallurgical bond with minimal dilution
Abrasion resistance (ASTM G65)	on request
Service temperature	on request

Values are typical and for guidance; certified test values available on request.

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QAME supplies QMAX™ 50 as **full sheets and cut panels**, or applied directly to customer components and shaped parts:

QMAX™ 50 overlay sheets — PTA deposited on mild steel

Cut panel — profiled to suit the component

APPLIED DIRECT TO COMPONENTS

Because QMAX™ 50 is deposited by PTA welding, it is not limited to flat plate. The overlay can be applied to shaped items — GET, mixer paddles, fan blades, drilling parts and formed liners — following the contour of the component with a metallurgical bond and minimal penetration into the parent material. Cut panels can be profiled to suit and welded into position via the mild steel base, and alternative base grades are available on request.

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WHERE QMAX™ 50 FITS

QMAX™ 50 complements the MAXCLAD™ tungsten CCO range where an Fe-based overlay is not enough. The fused WC granules deliver outstanding fine-particle abrasion resistance, while the tough Ni-Si-B matrix resists spalling under medium impact — with proven performance against Q&T steel. Where chromium carbide overlay wears out too fast, QMAX™ 50 is the step up — contact our team to discuss your application.

QMAX™ 50 cut panel — ribbed PTA-deposited overlay surface

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