

Laser Cladding for Aggregate Recycling Equipment

Laser Cladding offers a method of producing extremely abrasion resistant coatings which also offer toughness for the most demanding wear environments. LASE were asked to produce a coating which would protect the scroll segments within an aggregate cleaning machine. Typically the scroll segments are manufactured from Hard Steel. The laser clad coating significantly outlasted the standard design showing minimal wear even after the standard designed had to be replaced due to excessive wear.

Typical applications include:

- Wear plates
- Crusher hammers
- Bucket teeth
- Scroll segments

Coating Properties:

Specification:

- 60% Cast tungsten carbide particles within a Nickel Chromium Silicon Boron Matrix

Hardness:

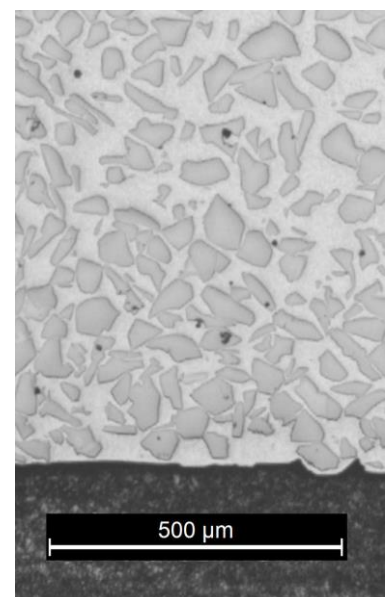
- Tungsten Carbide Metal matrix coating
2000 Hv (Carbide particle)
550 Hv (Nickel Based Matrix)

Process Considerations:

- This coating cannot be machined by conventional tooling. Diamond grinding is required if finish machining is desired
- If the application requires the coating to be crack free, the substrate must to be preheated prior to laser cladding.
- These Coatings can be applied onto most Steel, Stainless Steel and Inconel base materials.



A Laser Clad Scroll Segment prior to service



Laser Clad Tungsten Carbide
Microstructure