

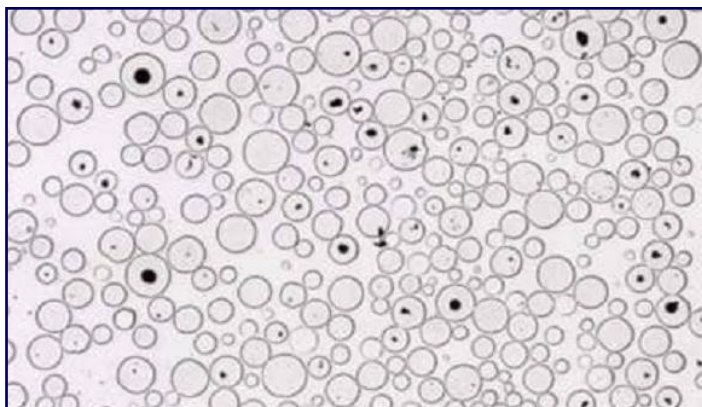
IntegriCladd[®] Laser Coatings Technical Information Sheet

IntegriCladd[®] 8000 Tungsten Carbide Composites



- Consists of 60% fine spherical tungsten carbide grains (hardness = \approx 3000 HV) homogeneously dispersed in a 45 HRC self-fluxing nickel matrix
- Withstands extreme sliding abrasion and can be ground for bearing applications

- Proven to outlast nickel-base, cobalt-base, and chromium carbide weld overlays by a factor of 10
- Nickel matrix can be substituted with H13 tool steel (for abrasion and impact resistance), Stellite[®] 6 (for anti-galling) and Ultimet[®] (for extreme corrosion)

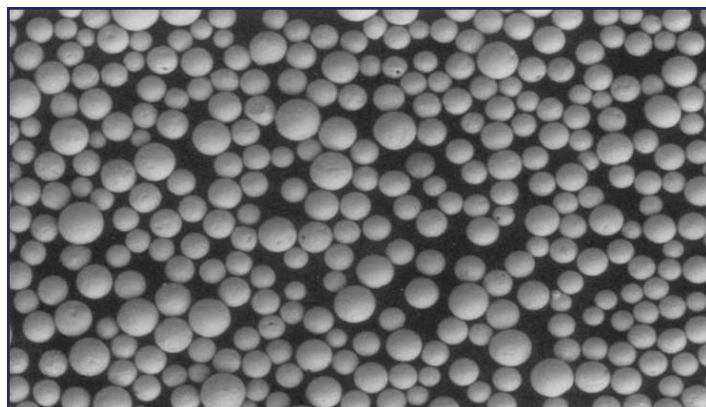


Micrograph of Laser Cladding Spherical Tungsten Carbide particles in NiCr binder matrix.

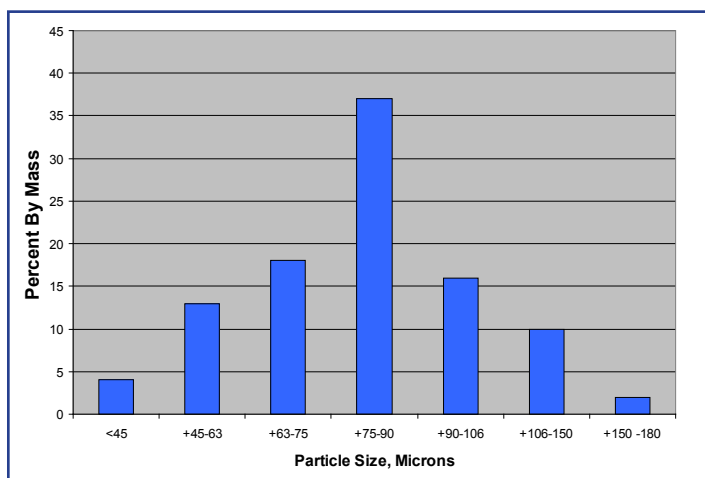
Grain Size Range:
45 to 180 microns for abrasion resistant coatings.

Wear Characteristics:
ASTM G65 - Mass loss = .06 to .08 grams for G65-00 Procedure A.
Modified pin on disk mass loss = .070 to .085 grams for 30 minute test.

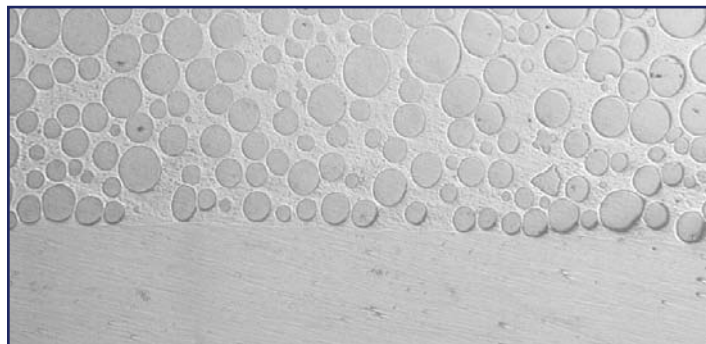
Material Properties:
Carbide particle hardness = 3000 ± 500 HV
NiCrBSI Hardness = 45-50 HRC



Micrograph of individual Tungsten Carbide particles:
Sphericity = .942
Aspect Ratio = 1.07
Density = 16.40 g. cm^3



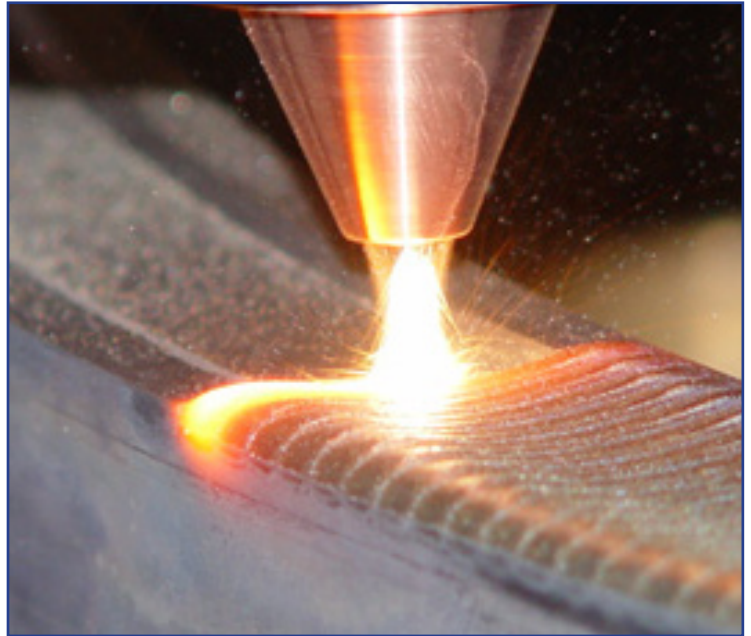
Carbide Particle Size Distribution



Superior metallurgical bonding between the Laser Cladding and substrate.

Laser Cladding Services' Process

<i>LASER CLADDING</i>
High Bonding Strength
Low Dilution
Metals & Ceramics Coating Materials
50µm to 2mm Coating Thickness
High Repeatability
Low Heat-Affected Zone (HAZ)



How We Work For You

We combine our expertise in coatings and metallurgy with a solid understanding of all manufacturing processes. This allows us to take your single part and do the following:

1. Work with you to learn the product working environment.
2. Evaluate the product's potential for wear.
3. Apply various processes to enhance it, using LCS's proprietary process technologies.
4. Complete the enhancement with our final finishing processes.

LCS's goal is to prepare the part for its worst environment before it is placed in service. We focus on an enhancement process and getting the part back to you to complete your final assembly.



Our Commitment

At LCS, we are committed to providing the best laser cladding solutions possible. Whether you need quick service for critical parts, creative applications to solve difficult wear issues, or ongoing programs to maintain essential components, we are here to keep you moving.



Our Mission

Continuing to develop and test new solutions to meet the challenges of the harshest wear conditions. After years of experience, we have developed more applications with a variety of metals that all have superior results to make parts last longer. As an ISO 9001: 2000 certified company, we take integrity seriously.

For a complete list of services, *IntegriCladd*[®] technical information and data sheets, visit our website at www.lasercladding.com, or call toll free at 800-856-8082.



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