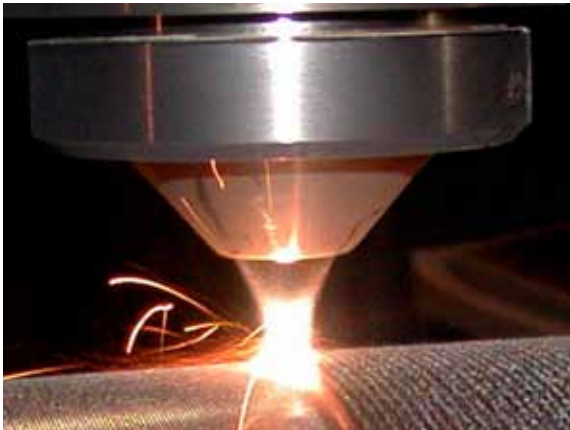


High performance, field repairable, and fully DNV certified coating for the most demanding applications and harshest operating environments.



Features

- Hardness throughout depth and length without cracking; 40 - 45 Rc
- Optimized corrosion, wear, scratch and impact resistance
- Optimized for ductility & toughness
- Extra thick coating and uniformity
- Low metallurgical dilution and Fe content (<2%), porosity <1%, and flaw content <0.005"
- Tight process control
- Custom and optimized seal configuration for maximum system durability and life

Designed for exposure to seawater in the splash zone, Eaton Scientists have developed Eatonite™ ABC-L1, a superior corrosion, wear and impact resistant laser clad coating and process, with high through depth hardness and optimized ductility and toughness. Eatonite™ ABC-L1 is a metallurgically bonded, impervious overlay, with minimal dilution and iron pick-up.

- Suitable for offshore deepwater exploration & production, marine and other heavy duty applications
- 1st and only cylinder manufacturer to offer DNV certification of complete laser cladding process
- New or refurbished hydraulic cylinders
- Made in the USA and Europe
- Product delivered on-time
- Extensive experience with offshore cylinders

Benefits

- Extends service life and reduces probability of failure & modes
- Field repairable with procedure
- Premier saltwater corrosion resistance
- Highest hardness of laser clad coating available
- An Eatonite ABC-L1 processed rod prevents the initiation and propagation of cracks!
- Quality assurance with multiple Non-Destructive Tests
- Eaton is the only cylinder supplier with DNV Certification (full process per JIP participants, Report No. 2009-3295)
- Extended warranty

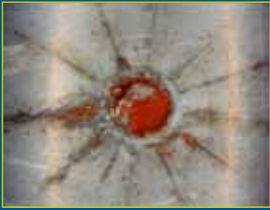


Powering Business Worldwide

Eatonite™ Laser Cladding Boosts Cylinder Performance and Wins Coveted "Golden Mousetrap" Award.



Eatonite™ offers superior corrosion resistance compared to thermal spray, plasma spray, and electroplating, providing lower total cost of ownership.



Thermal Spray

- Brittle behavior
- Cracks; corrosion
- <5 ft-lbs impact



Eatonite™

- Ductile behavior
- No cracks; No corrosion
- >24 ft-lbs impact

Can your application afford anything less?

Laser Cladding of Hydraulic Piston Rods

Best in class performance, process and inspection

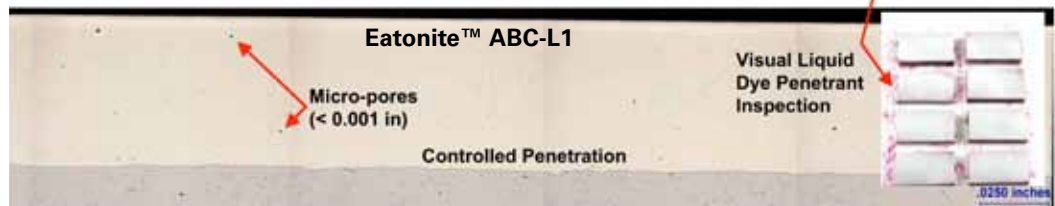
How it Works

Energy from the laser beam spot impinging on the work piece produces a shallow, molten cladding puddle. Filler material powder is injected into the beam and the weld puddle. The powder used in laser cladding is normally metallic, and is injected into the system by either coaxial or off-axis nozzles. The interaction time allows the filler material to build up. As the beam spot passes a location, the cladding puddle solidifies rapidly,

leaving the desired build up of cladding material.

Because industrial lasers are a controllable heat source, the laser cladding process is characterized by good control of the heat input to the work piece. This results in low dilution of the coating layer (mixing of the coating with the substrate) and low distortion of the work piece. Other welding methods, such as submerged, shielded gas metal, and plasma transfer arc

welding, require significantly higher heat input to the part, greater dilution, the potential of greater distortion of the part, multiple layer processing. Non-welding methods, flame spraying and plasma spraying, produce coatings that are mechanically rather than metallurgically bonded to the surface. Generally speaking, coatings produced by these methods are thinner than coatings produced by laser or arc welding processes.



Coating Integrity Matters

Eaton's robust design, tight process control, combined with multiple non-destructive tests, yields and insures the highest performance laser clad coating available.



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Printed in USA
Document No. E-CYCM-MS007-E1
Supersedes E-CYCM-MS007-E
December 2011