



Fe-based
welding/cladding powders
for maintenance & repair



Pioneering Industrial Sustainability

www.castolin.com www.eutectic.com



Castolin Eutectic solutions

Castolin Eutectic engineers and technicians are all highly qualified to understand industrial application problems in order to recommend optimised tailored solutions.

The Research and Development centre is well equipped to resolve most complex wear phenomena affecting industrial productivity, using appropriate coating technology. Customers can be confident that dedicated, in-house development staff will work to fulfill their needs and expectations under a Total coating solutions concept.

Using state-of-the-art equipment, every batch of coating alloys produced according to strict procedures, is rigorously tested by professionals to ensure complete compliance with demanding Castolin Eutectic standards and exhaustive Quality Assurance criteria.

Character of the new Fe-based powder range:

- New Castolin items Eutroloy 16039, 16045, 16050 and 16056 are carbon steel powders alloyed with Cr and Mo, structure after welding is martensitic/ferritic.
- Deposits from this range of alloys have medium to high hardness in selected intervals of typically 40, 45, 50 and 55 HRC. They provide average to high resistance against abrasive wear and good toughness at temperatures up to 450 °C.
- Coatings from Eutroloy 16039, 16045, 16050 are easy to machine, for coatings from Eutroloy 16056 selected tools should be used (>60 HRC). Due to their high toughness, alloys from this range possess good crack resistance and a limit and a limit for number of passes does not exist. The recommendation for optimum coating properties is to use at minimum 3 layers which ensures base metal dilution is controlled.
- From a health perspective, the combination of these alloys having an iron base with absence of nickel content is of considerable benefit in comparison to other alloys used for the creation of surface coatings.

Target applications:

Our new Fe-based powders are designed for resistance against abrasive wear & pressure. Typical applications are:

- Repair of forming tools and press molds from cast iron
- Rebuilding and protection of machine parts
- Edge hardfacing of forms for injection molding made of steel

Powder	Typical hardness	Particle size ranges*
EuTroLoy 16039D	≈ 40 HRC	45-125 and 53-150 μm
EuTroLoy 16045D	≈ 45 HRC	45-125 and 53-150 μm
EuTroLoy 16050D	≈ 50 HRC	45-125 and 53-150 μm
EuTroLoy 16056D	≈ 55 HRC	45-125 and 53-150 μm

*other particle size ranges available on request

The processes

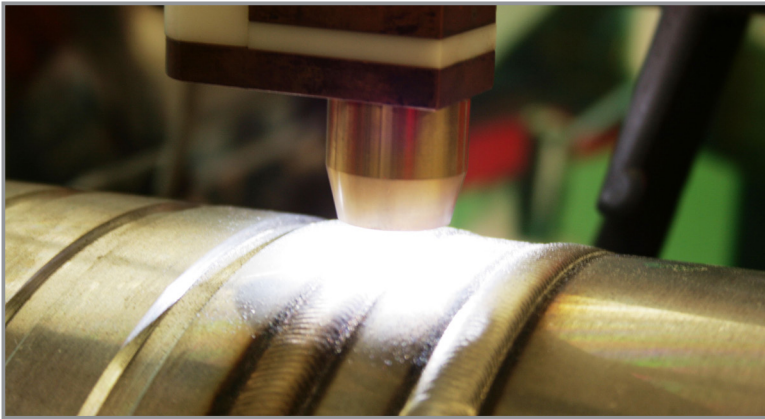
PTA process

The complete range of nickel-chromium and nickel-copper alloy powders specially formulated for the Plasma Transferred Arc process. Along with the eutronic gap system provided by Castolin Eutectic, our powders can be used with all other PTA systems currently available with maximum concentration of energy to provide top quality coatings without affecting the base metal. The ideal process for automation of coating applications particularly on moulds or rotating parts.

Laser cladding process

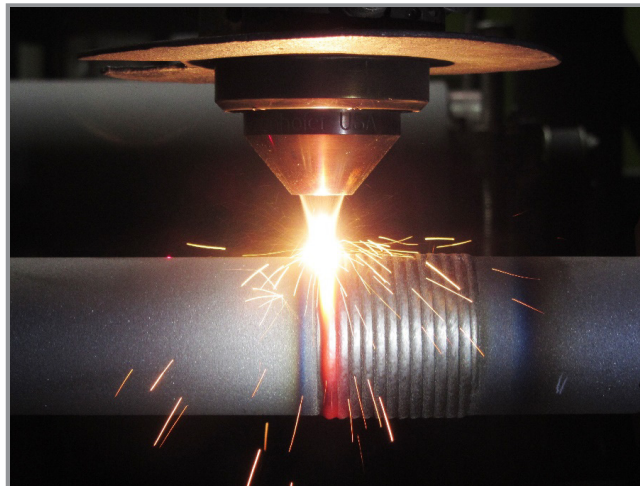
The laser coating process is one of the cladding processes which is used to fuse a desired alloy on a substrate material. The clad material may be similar to the substrate material in the case of repairs and rapid prototyping. The clad material may have a higher performance to offer enhanced corrosion resistance or wear resistance to protect a multitude of components.

The laser process is at the cutting edge of technology in many industrial fields where modern production lines require reliable, automated and flexible systems with little maintenance that achieve optimum profitability.



The laser coating process provides a remarkable benefit:

Lowest dilution of 2 to 5% for maximum purity of the coating.



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