KEY INDUSTRIES

- Oil & Gas and Petrochem
- PowerGen, Hydro PowerGen and Waste Management
- Food & Packaging
- Process Industry
- Mining & Drilling
- Pulp & Paper
- Plastics

HARDFACING & COATING

- HVOF
- APS or PNTA
- Welded Coatings (PTA, TIG, MIG, etc.)

MACHINING CAPABILITIES:

- Turning
- Milling
- Drilling
- Grinding
- Lapping
- EDM

QUALITY & LABORATORY

- Dye Penetrant Test
- Hardness Test
- Bend Test
- Micrograph & Porosity Inspection
- Outsourcing specific analysis to external laboratories

CERTIFICATION

- ISO 9001-2008

For more information or inquiries, please contact:

Deloro Coatings S.r.l.
Via Ornago 26 | 20882 Bellusco (MB) | Italy
Tel.: +39 039 620 44 11 | Fax: +39 039 602 26 01
Email: info.coatings@deloro.com

Your source for reliable Wear Solutions that ensure productivity

Deloro Group is dedicated to providing superior and reliable solutions for Wear and Corrosion Protection. When you partner with Deloro, you can expect cost-optimized solutions that will enhance and extend the life of your machinery/parts.

Deloro Wear Solutions
Offering Bespoke Components, Coating Services, Consumables and Equipment

Deloro Coatings
Offering high-quality coating services utilizing a wide range of cobalt, nickel, and iron-based alloys as well as tungsten carbide

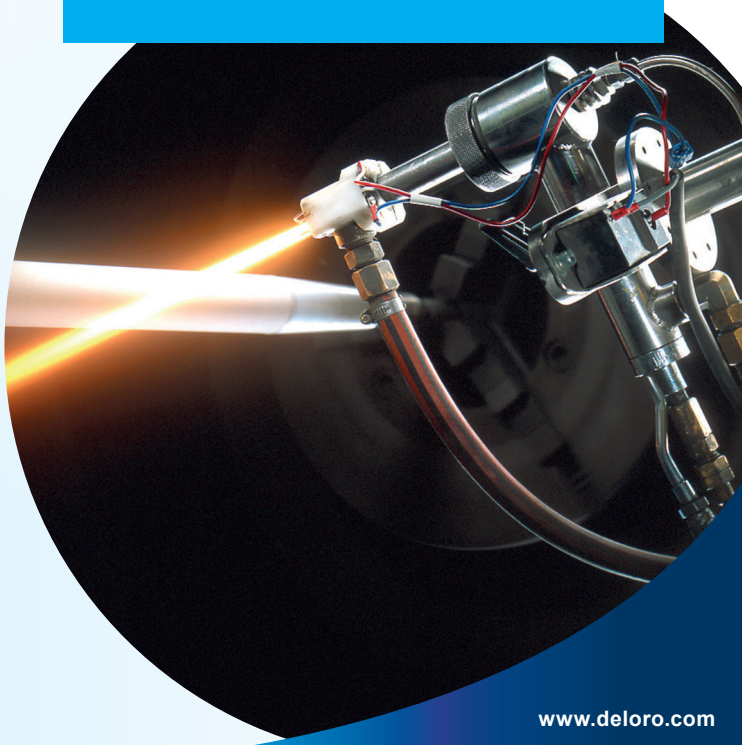
Deloro HTM
Offering HIP Process for densification, near net shape and bi-metallic components

Deloro Microfusione
Leading manufacturing services provider for highly-demanding air- and vacuum-cast super alloy investment castings

Delo-16104-B_08/2016

Deloro Coatings

HARDFACING & COATINGS



www.deloro.com

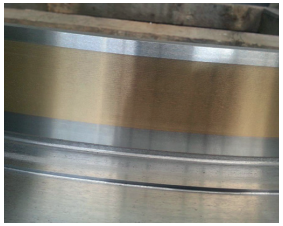
COATING TECHNOLOGIES

Thermal Spray

HVOF: High Velocity Oxy Fuel

The powder particles are heated and transferred with high kinetic energy to the surface of the workpiece providing a dense coating with excellent bonding proprieties.

APS: Air Plasma Spray



At high temperature a plasma gas stream softens or melts the coating particles which are transferred to the workpiece. Suitable for spraying of high-melting point metals as well as their oxides. APS is also suitable for Cermets and Copper-Aluminum coatings.

Spray & Fuse

The coating powder is softened or melted in an oxyacetylene flame and transferred to the workpiece. In a second stage, the sprayed coating is fused to the workpiece. Mainly used for coating of thermocouples.

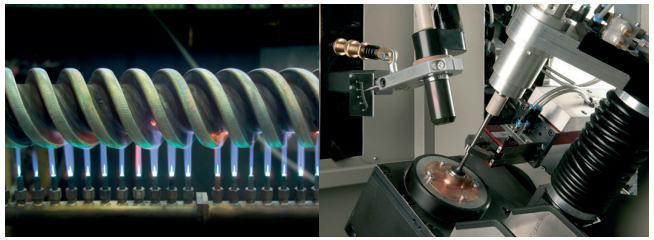
Main Coating Alloys and Typical Proprieties

	Process	Composition Weight %	Hardness HV	Thickness mm	Main features
Carbides	HVOF	88WC + 12Co	1250	0.25	Excellent wear and erosion resistance
	HVOF	86WC+10Co+4Cr	1200	0.25	Excellent wear resistance
	HVOF	$75Cr_3C_2$+25NiCr	800	0.25	Excellent wear resistance at high temperature or in corrosive media
Ceramic Oxides	APS	$87Al_2O_3 + 13TiO_2$	800	0.30	Good wear resistance up to 550 °C
	APS	$99Cr_2O_3$	1300	0.30	Excellent resistance to wear in acid/basic solutions
	APS	$95ZrO_2$ +CaO	450	3	Excellent thermal insulation
Special Alloys	PTA	Stellite™	28-60 HRC	> 1.5	Cobalt based alloys with very good resistance to corrosion, erosion and abrasion at high temperature.
	PTA	Deloro™	20-58 HRC	>1.5	Nickel based alloys with excellent corrosion, abrasion and wear
	PTA	Tribaloy™	47-60 HRC	>1.5	Excellent gas oxidation and corrosion resistance. High abrasive wear resistance

WELDED COATINGS

PTA: Plasma Transferred Arc

Automatic welding process with high powder utilization and very low dilution. Suitable for all cobalt alloys like Stellite™ and Tribaloy™ and nickel powders like Deloro™.



TIG – Tungsten Inert Gas

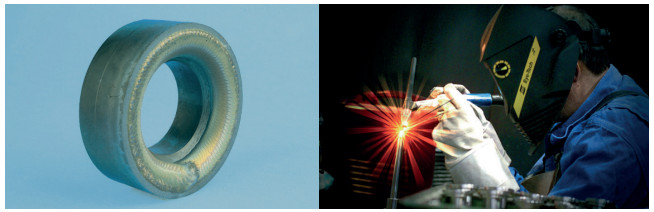
An arc is drawn between a non-consumable tungsten electrode and the workpiece and the pool of the hardfacing material is shielded by an inert gas. TIG is a simple, manual, flexible process.

MIG: Metal Inert Gas

Welding Wire is fed through the torch into the arc, where it is melted and transferred to the workpiece with a stream of shielding gas.

MMA: Manual Metal Arc

In this process an arc is drawn between a coated consumable electrode and the workpiece. The electrode coating melts to form a gas shield around the arc and the welding pool.

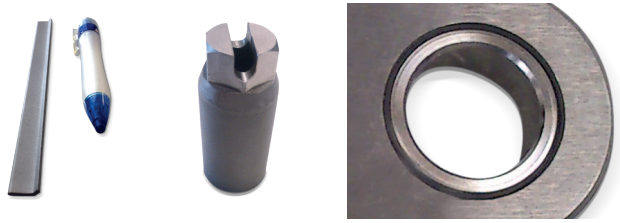


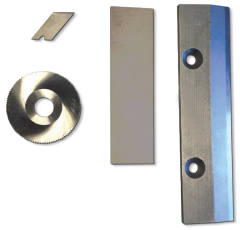
Dimension and Weight

Hardfacing Processes	Min and Max Workpiece Dimensions [mm]			
	ID (min.)	OD (max.)	Length (max.)	Weight [kg] (max.)
Automatic Gas Tungsten Arc Welding	40	450	300	200
Manual Gas Tungsten Arc	40	200	150	100
Air Plasma Spray (APS)		800	1800	1.000
Plasma Transferred Arc (PTA)	140	1600	5000	2.500
High Velocity Oxy-Fuel (HVOF)		800	2700	1.000

Massive Products: Stellite™ and Stellite™6B

Machining capabilities to produce massive Stellite™ parts like bushings, rings, spacers, washers, etc. starting from cast bars. Stellite™6B (AMS 5894) is a forged and/or rolled material. Bars and sheets present extraordinary resistance to wear due to the homogeneous structure and are normally used in demanding environment in Aerospace, PowerGen and Petrochem applications.



Stellite™6K Industrial Knives

Industrial Knives and scrapers supplied finished to drawing in Stellite™6K to increase the lifetime up to 10X in corrosive and abrasive enviroment.
Typical thickness 0.8 – 9.5 mm.