



**DURIT**

» THERMAL SPRAY COATINGS  
More effective against wear.

» Our coatings effectively protect against wear and offer best performance.

**REDUCTION**

of » **abrasion** » **erosion** » **friction**

**INCREASE**

of » **resistance** (wear and corrosion)

**IMPROVEMENT**

of » **conductivity** (electric, thermal)

» **insulation** (electric, thermal)

**CREATION**

of » **biocompatibility**

## » OPTIMIZED WEAR RESISTANCE AS A GOAL, PRODUCTIVITY AS A RESULT.

When it comes to minimizing wear, DURIT is one of the **GLOBALLY** trend-setting companies. We also take a leading role in the expanding coating market. Our processes represent technological innovation and they increase the **PERFORMANCE AND SERVICE LIFE** of components and tools. The range of optimization by our flame spray procedures is almost unlimited.

### coatings by durit

- » **MINIMIZE WEAR**
- » **INCREASE CORROSION RESISTANCE**
- » **CAUSE LONGER SERVICE LIVES**
- » **REDUCE COSTS**
- » **ENHANCE PRODUCTIVITY**



VALVE SEGMENT  
TiO<sub>2</sub>

# » THERMAL SPRAY COATINGS

By effective flame spray processes, DURIT realizes **CUSTOMIZED SOLUTIONS**, which makes components more durable. Our experts develop and implement all improvements of the surface properties individually and specific to the respective requirement. This also applies to established production processes.

On that point, **WEAR PATTERNS** and potential **CAUSES OF MALFUNCTION** including all **PARAMETERS** decisive for the respective application, e.g. temperature, pressure, adjacent components, or the processed medium, are analyzed at first. Flame spray coatings by DURIT are the most effective and in many cases even the only possibility to considerably improve the operational performance.

## » FLAME SPRAY PROCEDURES

### HVOF

High Velocity Oxi-Fuel



### APS

Atmospheric Plasma Spraying



### EAWS

Electric Arc Wire Spraying



## LASER CLADDING



## » COATING MATERIALS\*

### CARBIDES

WC/Co

WC/Co-Cr

WC/Ni

WC/NiCr

WC/NiCrBSiFe

Cr<sub>2</sub>C<sub>3</sub>/NiCr

### CERAMICS

Al<sub>2</sub>O<sub>3</sub>

TiO<sub>2</sub>

Al<sub>2</sub>O<sub>3</sub>/TiO<sub>2</sub>

Cr<sub>2</sub>O<sub>3</sub>

Cr<sub>2</sub>O<sub>3</sub>/TiO<sub>2</sub>

Cr<sub>2</sub>O<sub>3</sub>/SiO

ZrO<sub>2</sub>/CaO

ZrO<sub>2</sub>/MgO

ZrO/YO/CeO

ZrO<sub>2</sub>/Y<sub>2</sub>O<sub>3</sub>

### METALS

Cu

Co

Al

Zn

Mo

NiAl

NiCr

NiCrMo

NiCrAlY

### METALS

Weldable powders (carbide mixtures, alloys, metals) – comparable with Stellite, Tribaloy, Colmoly, Hastaloy, Inconel or the like

## » HVOF

### HIGH VELOCITY OXI-FUEL

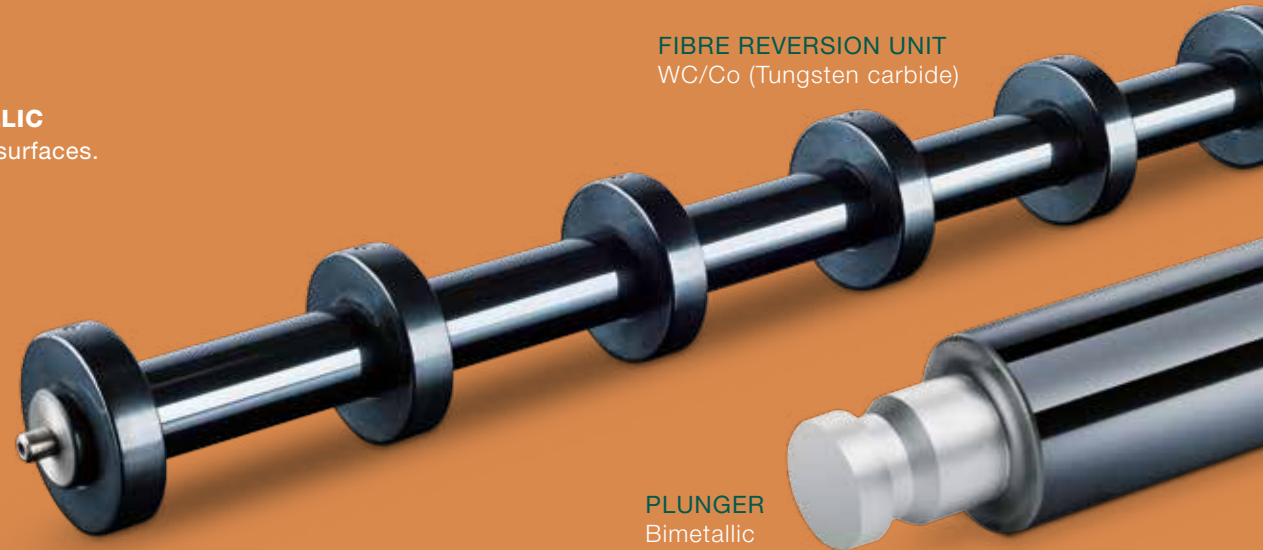
HVOF is a highly kinetic procedure, by which usually **CARBIDE OR METALLIC COATINGS** are applied. Our experts are thus able to realize **VERY DENSE** surfaces.

#### properties

- Ø Adhesive strength: > 80 MPa
- Ø Porosity: 0.5 % to 1 %
- Ø Thickness of coating: 100 to 500 µm

#### advantages

- » Low thermal load of basic material
- » High endurance at linear loads
- » Material-independent and partial coating possible
- » High density of coating layer
- » Thin layers with high dimensional accuracy



FIBRE REVERSION UNIT  
WC/Co (Tungsten carbide)

PLUNGER  
Bimetallic

## » APS

### ATMOSPHERIC PLASMA SPRAYING

The most flexible method of all thermal spray processes generates sufficient energy for melting every material and it provides – most commonly by means of **CERAMICS** – excellent possibilities to create **OPTIMIZED LAYER THICKNESSES** and surface properties.

#### properties

- Ø Adhesive strength: 20 to 50 MPa
- Ø Porosity: 4 % to 8 %
- Ø Thickness of coating: 200 to 1,000 µm

#### advantages

- » Broad range of materials on diverse matters
- » Low heat input into the component
- » Good control of layer thickness and surface properties
- » Coating of small inner bores possible
- » Improvement of thermal or electric insulation



PLUNGER  
CRC Max®



## » LASER CLADDING

Coating treatments based on laser technology take a key role in today's production and maintenance processes. Due to high **PRECISION**, alloys most commonly based on nickel-cobalt may be specifically applied.

### properties

- Ø Adhesive strength: > 300 MPa
- Ø Porosity: 0 %
- Ø Thickness of coating: 0.2 to 5 mm and more

### advantages

- » Very good layer adhesion due to metallurgic fusion
- » Partial coating and complex geometries possible
- » High contour precision – even for elaborate shapes of workpieces
- » Development of very fine microstructures
- » Limited heat input

## » EAWS

### ELECTRIC ARC WIRE SPRAYING

Mainly using **METALLIC COATING MATERIALS**, this procedure realizes massive protection against wear, improved corrosion resistance, heat insulation, **ELECTRIC INSULATION** as well as upgraded visual quality.

### properties

- Ø Adhesive strength: 15 to 40 MPa
- Ø Porosity: 3 %
- Ø Thickness of coating: 200 to 5,000 µm

### advantages

- » Thick application of more than 5 mm possible
- » Enhanced service lives and reduced maintenance costs
- » Ideal for repair of machine parts
- » Wear protection containing molybdenum is possible as well
- » Enormously high profitability



**SPRAY SLEEVE**  
WC/Co (Tungsten carbide)

**SHAFT SLEEVE**  
WC/Co (Tungsten carbide)



VALVE BALL  
TiO<sub>2</sub>

# DURIT

COATINGS

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