



**Technology Innovation**

## **BusaDUR®** – the latest Busatis wear protection technology

**The world's first highly wear-resistant coating of the entire crop flow channel for self-propelled forage harvesters**

**Advantages of BusaDUR® wear protection coatings:**

- ▶ highest service life – depending on the coating thickness, a higher service life of up to 800 % compared with uncoated parts can be obtained
- ▶ exceptionally smooth surface for smooth crop flow – plugging and rubbing are reduced – high throughput rate – less fuel consumption
- ▶ saving of costs and time – less downtime – less maintenance effort
- ▶ forming – parts can be formed after the coating process
- ▶ the long-time field use throughout the world ensures that the technology is process safe and the wear protection coating is ready to go into mass production.

# BusaDUR® – the latest Busatis wear protection technology



Thanks to the continuous development of high-performance machinery used in different industrial fields, the long service life of wear parts is a requirement that has become considerably important over the years. Being able to offer solutions on customer request, Busatis continuously develops new technologies for highly wear-resistant coatings against abrasion, erosion, and impact stress.

### Challenge

When developing new technologies, Busatis always focuses on enhancing the service life of wear parts, which are subject to increasing unfavorable conditions, in order to optimize the cost-benefit ratio and to reduce the costs per ton of crop.

The BusaDUR® wear protection coatings must meet the following criteria:

- ▶ cost-efficient process for completely coating large wear surfaces
- ▶ particularly smooth surface reduces friction loss
- ▶ parts can be formed after the coating process

BusaDUR® wear protection coatings must reach the following goals:

- ▶ increasing the service life by 300 % compared with uncoated parts
- ▶ improving the cost-benefit ratio
- ▶ less downtime – reducing the maintenance effort
- ▶ less energy consumption during machine operation

### BusaDUR® technology details

The first step of making the BusaDUR® wear protection coating with an exceptionally smooth surface is applying the coating compound robot-controlled on the parts and drying it. Afterwards, the parts are sintered in a special oven. Making use of this heat treatment, the coating becomes wear-resistant and hard and joins with the basic material of the part without changing the structure of the basic material. According to the part geometry, the parts can be formed after the coating process.

The long-time field use throughout the world ensures that the BusaDUR® technology is process safe and the BusaDUR® wear protection coatings are ready to go into mass production.

### BusaDUR® specifications

Specifications and characteristics of the BusaDUR® wear protection coating:

- ▶ hardness: 775 - 900 HV (63 - 67 HRC)
- ▶ roughness height: roughness average without finishing treatment  $R_a$  2 - 4  $\mu$ m (as if ground)
- ▶ coating thickness: 0.5 - 2.5 mm
- ▶ sheet thickness: steel substrate min. 3 mm
- ▶ dimensions: max. L 1000 x W 420 x H 160 mm



### Advantages

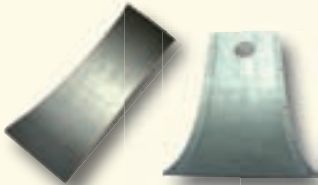
BusaDUR® wear protection coatings achieve the following results:

- ▶ highest service life – depending on the coating thickness, a higher service life of up to 800 % compared with uncoated parts can be obtained
- ▶ exceptionally smooth surface for smooth crop flow – plugging and rubbing are reduced – high throughput rate – less fuel consumption
- ▶ saving of costs and time – less downtime – less maintenance effort
- ▶ no impact sensitivity
- ▶ forming of the coated parts according to the part geometry

### Possibilities for processing the coated parts:

#### Forming

rolling (cold)



edging (cold)



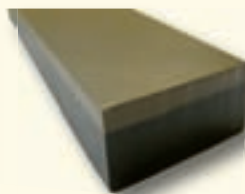
bending (hot)



Laser cutting



Water jet cutting



Countersinks



Milling

Grinding

Welding

### Fields of application

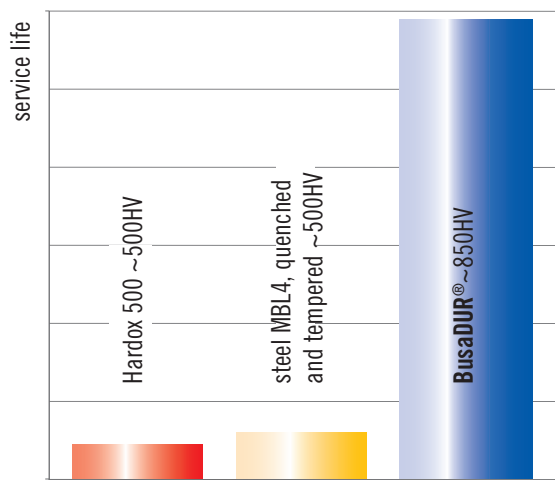
Currently, BusaDUR® wear protection coatings are used for wear parts in erosive/abrasive conditions in the following fields of the heavy industry:

- ▶ agriculture
- ▶ forestry
- ▶ building industry
- ▶ mining industry
- ▶ recycling

Comprehensive field tests were successfully carried out in various conditions of use.

## Service life of BusaDUR® wear protection coating

compared with uncoated materials



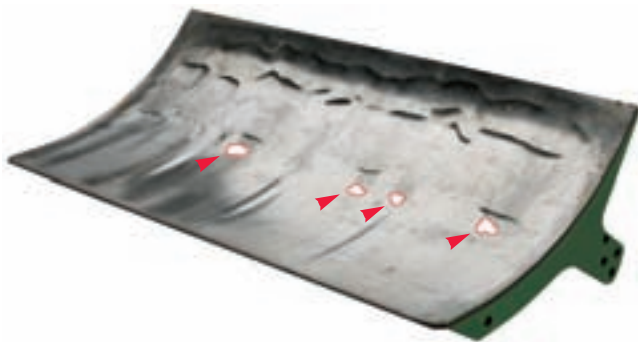
The diagram shows the service life increase using the Busatis BusaDUR® wear protection coating compared with the use of uncoated materials on the basis of the standard test ASTM G65 carried out by AC<sup>2</sup>T (Austrian Center of Competence for Tribology).

## Comparison in quality: BusaDUR® wear protection coating

Spiral bands in field use

**100 %**

service life without coating



field use was stopped after 200 cutter head hours, spiral band is worn completely, 4 holes already developed

**min. 600 %**

service life with 2 mm BusaDUR® coating



after 200 cutter head hours, 85 % of the coating still remain

If adjustment is inadequate and harvest conditions are unfavorable, a reduction of the service life is to be expected.