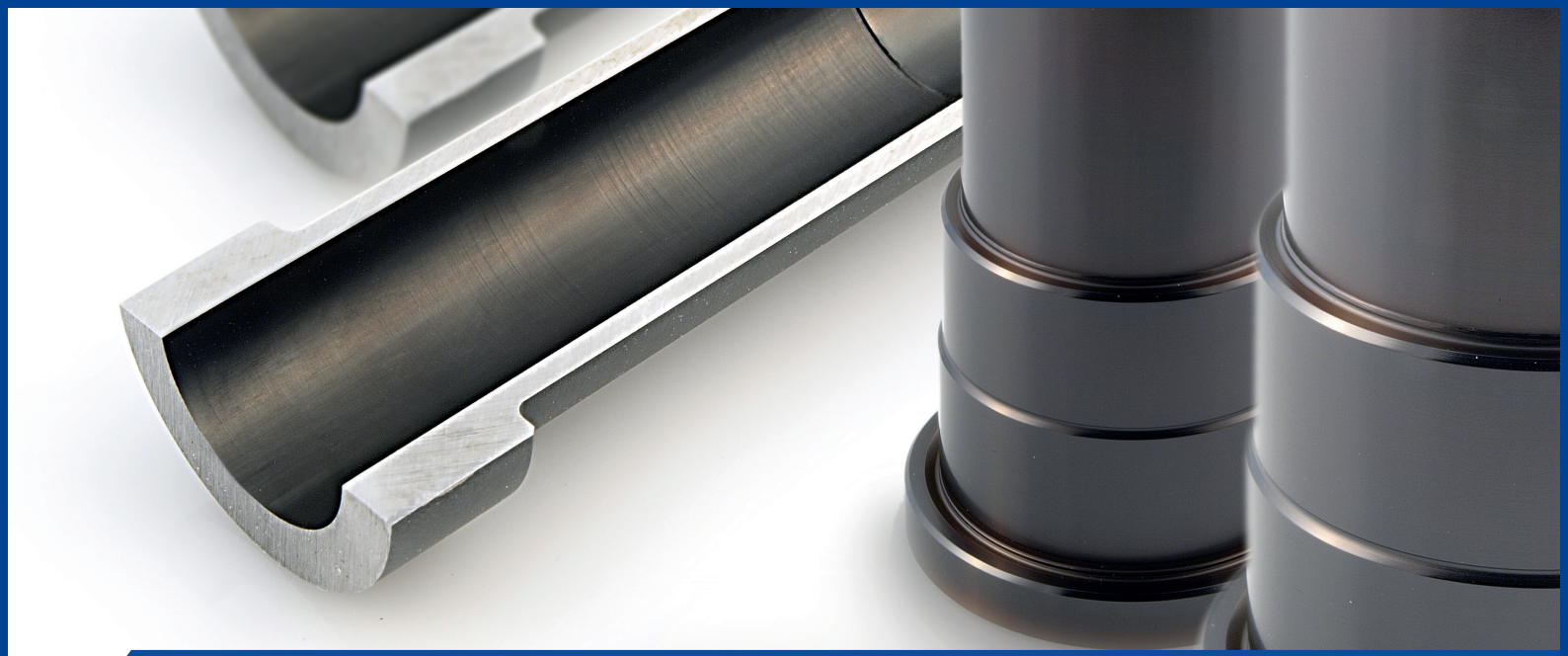


DLC Xtended®

TECHNICAL DATA SHEET

DLC Xtended®:
DLC stands for diamond like carbon and it is a carbon-based hard material layer with excellent sliding properties.

Coating of metallic materials for:
→ Plastics processing industry, mechanical engineering, chemical industry, precision components, safety technology, etc.

Application:
→ wear protection
→ corrosion protection
→ minimization of friction
→ decorative purposes

Coatable materials:
Engineering steels, nitriding steels, stainless steels
Concrete coordination about the material is done through our customer service.

Main features:
→ water-repellent / oil-repellent
→ high degree of chemical resistance
→ electrically insulating
→ very low friction coefficient

Max. size of the parts for the coating:
→ max. Ø 1,000 mm / 1,800 mm in height

Possible preparation of the surfaces for an optimal coating result:

by customer:
→ metallic blank surface
→ no corrosion
→ clean cooling channels
→ no strain hardening through by e.g. mechanical processing

by RÜBIG (optional):
→ micro-blasting
→ bake-out

Required Information:
→ Material (optionally tempering temperature including heat treatment condition)
→ Definition of surfaces
- Coating area:
  the area to be coated
- Footprint:
  on which the component is placed on the charging frame and thus not coated
- Covering areas:
  surfaces that must not be coated

→ Are we allowed to perform micro blasting?

Optional information:
→ Area of application of the component or tool
→ Objective for the coating
→ Last processing steps

We advise you individually on your component.

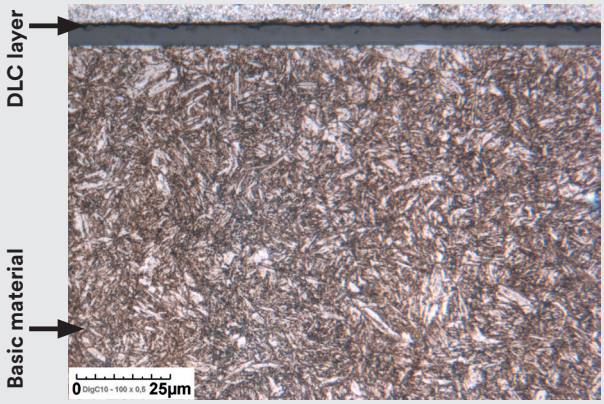
RÜBIG DRIVING SUCCESS

DLC Xtended®

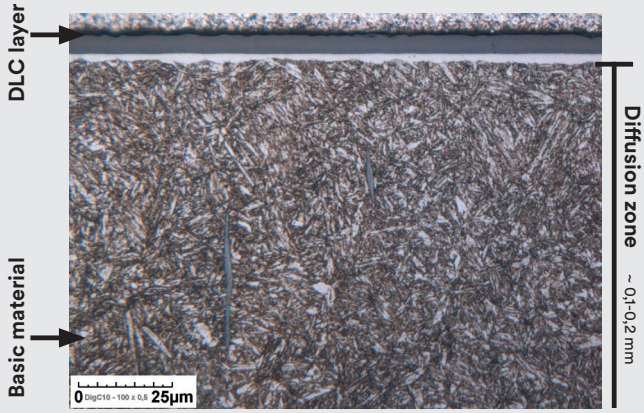
TECHNICAL DATA SHEET

Layer structure

DLC Xtended®



Duplex DLC Xtended®



Coating temperature

450 °C applicable for steels with
Tempering temperature > 480 °C

500 °C applicable for steels with
Tempering temperature > 520 °C

Can be adapted to the material if required.

Coating type

a-C:H:Si (amorphous carbon layer containing hydrogen and silicon); The deposition takes place by means of PACVD method (plasma-assisted chemical vapor deposition).

Typical application

→ wear protection
→ corrosion protection
→ minimization of friction
→ decorative purposes

Hardness [HV]

	min	max
DLC Xtended®	800	1,500

different hardness ranges on request

Characteristics

Friction *	µ = 0,04 - 0,1
Optics	black, anthracite shiny or dull

(depending on the component surface)

* dry, counter body 100Cr6, polished

Layer thickness [µm]

	min	max
DLC Xtended®	3	10

individual layer thickness on request

Features

wear resistance	+
run-in behavior	+
gliding	++
start-stop	+
corrosion resistance	+

Roughness [µm]

The roughness depends on the surface condition of the component to be coated.

Roughness / Sample	42CrMo4 polished before coating	42CrMo4 polished after DLC Xtended	42CrMo4 polished after Duplex DLC Xtended
Ra [µm]	0,01	0,04	0,10
Rz [µm]	0,03	0,05	0,13

RÜBIG DRIVING SUCCESS