

BRIEF INFORMATION

DURNI-COAT®

Functional Finishing of Metals via Electroless Nickel



Electroless nickel plated extruder mixing head for the dosage of colour

- **High wear resistance**
- **Good dimensional accuracy**
- **Improved hardness**
- **Improved corrosion resistance**
- **Uniform layer formation**
- **Electrical conductivity**
- **Good chemical resistance**
- **Optimum anti-friction properties**

Innovative and highly functional surface designs

Why are we so enthusiastic about a snow-covered landscape?

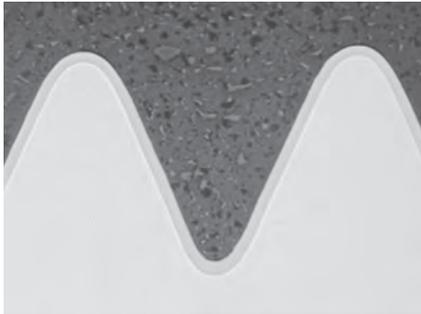
Because the white layers are draped over the countryside like a veil. This is the same way we evenly coat materials with dimensionally complex curvatures with our versatile electroless nickel DURNI-COAT® process.

DURNI-COAT®

DURNI-COAT® nickel layers are deposited on active substrate surfaces from aqueous nickel salt solutions and hypophosphite as the reducing agent. The surfaces of complex shaped components are treated true to their original contours; sharp edges and impressions, accessible cavities and bores are uniformly coated. Through variation of electrolyte and process parameters, DURNI-COAT®

layers can be tuned to suit special requirements. The composition of the electrolyte and the processing conditions are used to control the phosphorous content of the DURNI-COAT® layers. This content can be varied between 3 and 14 %. Phosphorous concentration is an important factor for many functional properties. DURNI-COAT® layers with higher

phosphorous content are as-plated X-ray amorphous. Heat treatment brings about recrystallisation with the formation of nickel phosphides. Electrical and magnetic characteristics, and other mechanical and chemical properties, can be altered in this way. **The electroless nickel-plating (DURNI-COAT®) is carried out at our facilities according to DIN EN ISO 4527.**



This cross-section illustrates the uniform DURNI-COAT®-deposit on an M4 thread



Electroless nickel plating by the DURNI-COAT® process gave wear and corrosion resistance to turbo charger compressor wheels made of aluminium

DURNI-COAT®	DNC 450	DNC 520	DNC 771	DNC-AL	PTFE-DURNI-DISP	SIC-DURNI-DISP	SIC-9-DURNI-DISP
Characteristics of the variants	especially ductile and corrosion resistant, lead-free variant: DNC 471	especially corrosion and wear resistant, lead-free variant: DNC 571	especially wear resistant, lead-free	for aluminium and aluminium alloys	dispersion layer with embedded PTFE	dispersion layer with embedded SiC	friction-increasing coating
Applications	components with high corrosion and chemical loads	pump components for use with natural gas and crude oil, food handling and processing equipment, nozzles, compressors, screws, threads	mining equipment and components, metal fittings and hydraulic flaps, vehicle components	structural parts for textile machines, printing presses, packaging machines, control system technology, electronics, electrical engineering, vehicle components	structural pneumatic and hydraulic components, mould construction, control levers, door lock fittings, shafts, bearing seats, textile machine parts	brake discs, cylinder running surfaces, pistons, valve plates, structural pneumatic and hydraulic parts, feeding funnels, rollers, track rollers	friction-locked connection, transmission systems
Suitable materials	<ul style="list-style-type: none"> all types of low-alloy ferritic steel cast iron-based materials stainless steel non-ferrous metals such as copper, brass and bronze aluminium alloys sintered metal materials other metal and ceramic-based materials (depending on previously-supplied sample coatings) 						
	For the most demanding specifications also double layers (DUPLEX-DNC) can be applied, e.g. the hard, wear-resistant DNC 771 layer in combination with a DNC layer with a higher phosphorous content.						