SPECIFICATION FOR HARD-CHROME PLATING 50µm

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GENERAL INFORMATION HARD-CHROME

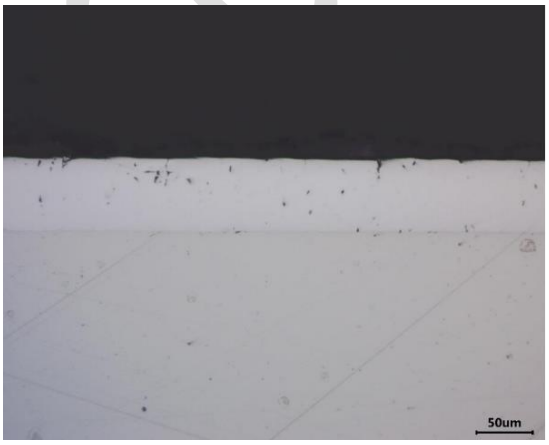
Hard Chrome plating provides exceptional hardness and wear resistance, making it ideal for components exposed to high levels of friction and mechanical stress. The hard chrome layer delivers a durable, wear-resistant surface that is suitable for demanding industrial environments.

This coating is known for its excellent hardness and reduced friction properties. While the corrosion resistance of hard chrome is limited, it can be combined with nickel to significantly improve its corrosion protection. The application process results in a precise and even coating, enhancing the lifespan of industrial components.

Hard Chrome is designed for applications where wear resistance, surface hardness, and durability are of utmost importance. Whether exposed to high loads, abrasive conditions, or extreme operational environments, it provides reliable performance at a cost-effective price.

- Ideal for high-wear and abrasive industrial environments
- Suitable for industries requiring enhanced surface hardness
- Offers excellent adhesion to various metal substrates
- Highly effective for component repairs and surface restoration
- Cost-effective solution for extending the lifespan of components

Hard Chrome is a proven surface treatment that provides superior protection and durability for components exposed to heavy friction and wear. Its strong adhesion and excellent resistance to mechanical stresses make it a versatile choice for both new and refurbished parts, ensuring optimal performance across a wide range of industrial applications.



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COATING SPECIFICATIONS

Measurement	Description	Standard	Specification
Hardness test - HV - HRC	**Determination of coating hardness** Hardness test expressed in Vickers Hardness test expressed in Rockwell	 ISO 6507-1 ISO 6508-1	 **900-1100 HV** **67 – 70+ HRC**
Rockwell indentation	Hardness test that measures resistance to indentation under a specified load	DNV-M2	**No cracking around indentation**
Bonding strength	Strength of the material bonding	-	**Good**
Elasticity	The elasticity of the material	-	**Good**
Ductility	The ductility of the material	-	**Good**
Wear score	Score of wear resistance compared other layers	NiCr	**+++++ (5 of 5)**
Operating temperature	Test to evaluate the temperature resistance of the coating	-40°C to 120°C	**< 325°C**
Saline droplet	Corrosion Resistance Test (Salt Spray Test)	DNV-C1	**On request**
Corrosion score	Score of corrosion resistance compared to other layers		**++ (2 of 5)**
Destructive porosity	Visual inspection for corrosion	DNV-C2	**No visible corrosion**
Porosity	Detection of porosity and cracks in the layer	<1%	**< 0%**
Layer cracks	Visual detection of cracks	-	**Small cracks visible improved oil lubrication**
Dye penetrant	Detection of cracks, holes and porosity	ISO 23277	**No detection of holes and porosity**

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ACCEPTANCE CRITERIA

Production process quality control (measurements performed on every production rod)

Measurement	Standard	Specification
Roughness		
- Ra	NEN-ISO 4287	**Conform drawing**
- Rvk	NEN-ISO 4287	**Conform drawing**
- Rpk	NEN-ISO 4287	**Conform drawing**
- Rmr*	NEN-ISO 4287	**Conform drawing**
Hardness test	ISO 6507-1	*On Request*
Dye Penetrant test	ASTM E165	*On Request*
Corrosion test (salt blanket)	-	*On Request*
Layer defects	-	Visual inspection
Cracks and porosity	-	Microscopic inspection
Surface imperfections (pinholes)	-	Conform table 1
Running marks/scratches	-	Max. dept ≤ 9 µm Max. width ≤ 19 µm

Table 1: Acceptance criterion for surface imperfections

Surface imperfections:	Within 1000 mm rod inspection	
	Ø ≤ 320 mm	Ø ≥ 320
Accepted but not reported: ≤ 0.3 mm	All	All
Accepted and reported: ≥ 0.3 ≤ 1,0 mm	5	5

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MEASUREMENT REPORT (Example)

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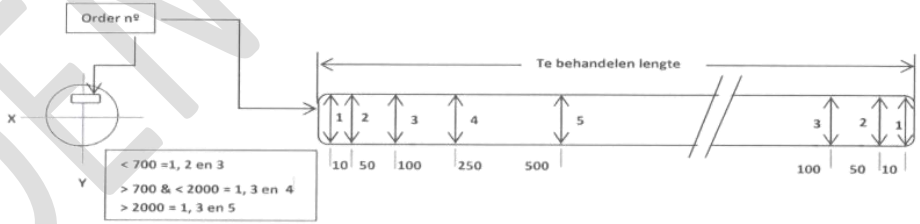
Measurement rapport

Ordernumber Technoplating	H302500001
Production No.	H602500001
Name Customer	**Customer X**
Ordernumber Customer:	**123456789**
Dimensions:	Ø150 x 3500 / 3500 mm
Date:	1-1-2025



		1	2	3	4	5	6	7	8	9	10
		On arrival									
	X-X	149,94	149,94	149,94	149,94	149,92	149,92	149,92	149,94	149,95	149,93
	Y-Y	149,94	149,93	149,93	149,94	149,93	149,92	149,93	149,94	149,95	149,93
		Pre polish									
	X-X	149,62	149,63	149,63	149,63	149,63	149,62	149,63	149,62	149,63	149,62
	Y-Y	149,63	149,63	149,63	149,62	149,63	149,63	149,63	149,62	149,63	149,62
Requested		Final dimensions									
150 f7	X-X	149,95	149,95	149,95	149,95	149,94	149,95	149,95	149,95	149,94	149,94
-0,043 / -0,083	Y-Y	149,94	149,94	149,94	149,95	149,94	149,94	149,95	149,94	149,94	149,94
	Layerthickness Cr	**55**	**52**	**58**	**59**	**56**	**52**	**50**	**50**	**53**	**54**

0,1 - 0,25	Roughness Ra (µm)
0,63 - 2,5	Roughness Rt (µm)
0,4 - 1,6	Roughness Rz (µm)
0,25 - 0,85	Roughness Rk (µm)
0 - 0,25	Roughness Rpk (µm)
0,25 - 0,85	Roughness Rvk (µm)
50 - 70	Roughness Mr (%)

Remark		Hardness test: **1100HV** | Dye penetrant test: **No porosity detected** | Corrosion test: **No corrosi**