



Product Specification Sheet
TOPCOAT□+
300µm 2-layer
UHCR / Al₂O₃ Ceramic coating

Coating construction and composition (2-layer coating system)

Bond/intermediate coating	HP-HVOF	Inconel/Hastelloy mix	>= 100µm (max. 3000µm)
Topcoat	Plasma	Al ₂ O ₃ TiO ₂	>= 200µm (max. 600µm)

Key coating information

Description	International standard	Minimum value	Griekspoor Standard
Tensile Adhesive Strength	EN 582 or ISO 41916	>= 35 N/mm ²	>= 50 N/mm ²
Corrosion test	DNV-C2	No corrosion visible after 500h	>1000h
	Endurance test acc. NBD10300	No permeability after 1000h (ECP-test >-350mV)	>1000h (ECP-test >-150mV)
Corrosion resistance	DIN 50021-ESS ASTM G85	No corrosion (10) after 1000h	>2000h
Porosity		<4%	<3%
Chem. Resistance 1. NaCl (acid) 2. H ₂ SO ₄ (acid) 3. HCl (acid) 4. NaOH (base)		1. Very good 2. Very good 3. Very good 4. Fair/good	
Impact toughness test	DNV-M1 (0.3kpm)	No cracking outside the impact area, min. energy 0,3kpm (3J)	
Rockwell indication test	DNV-M2	No or negligible break-out or cracking	No break-out, negligible cracking
Dynamic bending test 500 x / σ 300 N/mm ²	DNV-M3	No cracks after bending of minimum of 500 cycles	
Micro hardness	HV0,3	850HV (DNV>500)	850-1000HV
Macro hardness	HR15N	>75	>85
Max. operating temp.	---	-40°C ≤ T ≤ 120 °C	-40°C ≤ T ≤ 540°C
Wear testing	ASTM G065B		
Surface finish	NEN-EN ISO4287	Ra <0,5µm Rz < 5,0µm Rpk < 0,2µm	Ra < 0,35µm Rz < 4,0µm Rpk < 0,1µm
Seal advice		1. Good sealing properties 2. Advised choice of <u>sealing construction</u>	
Possibility of integrated Linear Positioning Measuring (LPM-system)		Yes, over full capacity Length 23 meters, Diameter approx. 1 meter, Weight 20 tons.	
Elasticity			Good

General information

The bond/intermediate coating is a Griekspoor development based on a superior stainless steel, especially developed to withstand the most severe environments.

The TOPCOAT□+ is our economic, wear resistant and dense coating with a very good corrosion and chemical resistance. TOPCOAT□+ can be ground to excellent finishes .

Finishing can be very smooth (Ra <0,10µm) however Griekspoor advises to choose an Ra-roughness of approx. 0,2-0,3µm. Griekspoor's seal advice is to use a Stepseal seal construction. This seal construction, together with the advised roughness, will guarantee maximum lifetime with optimum seal properties (no leakage, no stick- slip, low friction etc.).

This coating is specially designed to withstand maritime environments in combination with a very good wear resistance. In very severe environments is better to choose an intermediate coating of approx. 200µm.

Typical uses and applications are hydraulic rods/parts plungers, automotive parts, components for the chemical industry (testing is needed for your specific environment/situation), electrical insulation and dielectric applications.