



HYDRAULIC **CYLINDERS**

**Product Specification Sheet**  
**TOPCOAT®-107**  
**1-layer TOPCOAT®-107**

**Coating construction and composition (1-layer coating system)**

Topcoat	HP-HVOF	TOPCOAT®177/ Carbide-Ni/Cr	≥ 100µm (typically 125µm, max. 600µm)
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**Key coating information**

Description	International standard	Minimum value	Griekspoor Standard
Tensile Adhesive Strength	ISO 14916	≥ 50 N/mm <sup>2</sup>	≥ 70 N/mm <sup>2</sup>
Corrosion test	NOV/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	ISO 9227 AASS ASTM G85	No corrosion after 1000h	>1000h
Porosity		<1%	<0,5%
Chemical resistance 1. NaCl (acid) 2. H2SO4 (acid) 3. HCL (acid) 4. NaOH (base)		1. Excellent 2. Excellent 3. Very good 4. Excellent	
Impact toughness test	NOV/DNV-M1 (0.8kpm)	No cracking outside the impact area, min. energy 0.8kpm (8J)	No cracking outside the impact area, min. energy 0.8kpm (8J)
Rockwell indentation test	NOV/DNV-M2	No or negligible break-out or cracking	No break-out or cracking
Dynamic bending test 500 x / σ 300 N/mm <sup>2</sup>	NOV/DNV-M3	No cracks after a minimum of 500 bending cycles	No cracks after a minimum of 500 bending cycles
Micro hardness	HV0.3	950HV (NOV/DNV>600)	>1000HV
Macro hardness	HR15N	>75	>90
Operating temp.	---	-40°C ≤ T ≤ 120°C	-40°C ≤ T ≤ 500°C
Wear testing	ASTM G065B		TBA
Surface finish	NEN-EN ISO4287	Ra <0.2µm Rz < 4.0µm Rpk < 0.1µm	Ra < 0.2µm Rz < 2.5µm Rpk < 0.1µm
Seal advice		1. Excellent sealing properties. 2. Surface roughness and structure/texture can be adjusted for optimum seal life time. 3. Free choice of sealing constructions.	
Possibility of integrated Linear Positioning Measuring (LPM-system)		Yes, over full capacity <b>Length 23 meters, Diameter approx. 1 meter, Weight 20 tons.</b>	
Elasticity			Excellent

**General information**

This coating is a Griekspoor in house development of a nickel based superalloy blended with carbides. TOPCOAT®-107 is especially developed as a better and very economical 1:1 nickel/chromium replacement. Recommended coating thickness is 125µm. Maximum coating thickness approx. 600µm.

TOPCOAT®107 has a very good to excellent corrosion resistance. It combines hardness of the carbides with flexibility and tenaciousness/toughness of the superalloy. This combination results in excellent wear resistance against fretting, abrasion, and cavitation.

Typical applications:

Nickel/chromium replacement for hydraulic piston rods (marine environment). Especially long thin rods with a lot of flex can be coated reliably with only very little risk of cracking during use. Mandrels, very accurate rollers in the film and paper industry. Coating and/or repair of bearing and sliding surfaces.