



HYDRAULIC **CYLINDERS**

Product Specification Sheet

TOPCOAT® 177

1-layer TOPCOAT®-177

Coating construction and composition (1-layer coating system)

Topcoat	HP-HVOF	Nickel based superalloy (similar to Inconel 625)	≥ 100µm (max. 3000µm)
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Key coating information

Description	International standard	Minimum value	Griekspoor Standard
Tensile Adhesive Strength	ISO 14916	≥ 50 N/mm ²	≥ 70 N/mm ²
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	>2000h
Porosity		<1%	<0,7%
Chemical resistance 1. NaCl (acid) 2. H2SO4 (acid) 3. HCL (acid) 4. NaOH (base)		1. Excellent (also in 75°C environment) 2. Excellent (also in 75°C environment) 3. Excellent (also at boiling temperatures) 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 ²	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	---	>52
Operating temp.	---	-40°C ≤ T ≤ 120°C	-40°C ≤ T ≤ 870°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 lifetime. 3. Free choice of sealing constructions	
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

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

TOPCOAT®177 has outstanding corrosion resistance in a range of severe environments. It is excellent in reducing atmospheres, oxidizing conditions, and also has excellent resistance against crevice- and pitting corrosion. Furthermore, TOPCOAT® 177 offers exceptional resistance to sulfuric and hydrochloric acids, to mixtures of the two, and to crevice and pitting in hot concentrated acid chloride solutions.

Typical applications:

Oil and gas extraction (because of excellent resistance to chloride- and sulphur stress cracking), (petro)chemical processing, pulp & paper manufacturing, waste management, pollution control, oil refining, marine environment, (submerged) seawater, power plants, and boilers.