

ZCor300

The Core Solution for Corrosion

ZCor300 (Purple Band) is a high-performance fusion-bond Novalac epoxy powder coating. Engineered for the internal coating of tubing and casing, it provides a protection barrier against saltwater, CO₂, H₂S, and harsh production chemicals.



Features

Technical specifications and physical properties.

- Uniform Coating: Applied at a consistent thickness of 10 - 12 mils.
- Full API Drift: No internal diameter (ID) restrictions; no special running tools required.
- High-Temp Rating: Maximum operating temperature rating up to 150°C.
- Advanced Adhesion: Excellent bond strength with high impact and abrasion resistance.
- Low Permeability: Superior resistance to fluid penetration compared to standard epoxies.
- Total Protection: Proprietary thread and coupling coating technology ensures the entire tubing string is covered.



Benefits

The value proposition and operational advantages.

- Flow Efficiency: High-gloss, ultra-smooth surface reduces friction and improves flow.
- Deposit Prevention: Actively prevents the buildup of paraffin, wax, and scale.
- Extended Asset Life: Resists corrosion and wear, significantly reducing the frequency of workovers.
- Durability: Withstands multiple wireline runs at slow speeds, lowering replacement costs.
- Reliability: Maintains integrity under high-temperature and high-pressure (HTHP) conditions.



Applications

Where and when to use ZCor300.

- Aggressive Environments: Brine injection, disposal wells, Gas Lift, WAG, H₂S/CO₂ production.
- High-Maintenance Wells: Operations struggling with persistent paraffin or scale deposition.
- Corrosive/Abrasive Mixes: Wells featuring acid gases combined with abrasive dissolved salts.
- High-Cost Intervention: Remote or deep wells where longevity is critical to reducing workover expenses.

ZCor300 is corrosion's core solution

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TECHNICAL SPECIFICATIONS

Physical Properties:	Value	Unit	Method
Colour	Brown-Green	-	-
Density	1.4 - 1.6	g/cm ³	ASTM D792
Maximum Operating Temperature - dry gas (temperature depends on total operating environment, i.e., H ₂ S, CO ₂ , pressure, flow rates)	≤150 (302)	°C (°F)	-
Coating Thickness (Full API Drift)	10 - 12 (250 - 300)	mils (µm)	-
Mechanical Properties:			
Abrasion Resistance, Taber (CS17 Wheel, 1000g, 1000rpm)	<18	mg	ASTM D4060
Adhesion, Pull-Off Strength (not lower than A Class)	>20 (2900)	MPa (psi)	ASTM D4541
Coefficient of Friction (COF)	0.10	-	-
Impact Resistance	≥11 (97.4)	Joules (in.*lbs)	ASTM G14
Salt Fog, Salt Spray Test (1000+ hours @ 5% concentration)	PASS	hours	ASTM B117
Tensile Strength	51.7 - 63.1 (7500 - 9150)	MPa (psi)	ASTM D638
Chemical Resistance:			
Autoclave Test Results: NO swelling, blistering, cracking or detachment from the substrate			
Test 1: 16-hour, 148°C (300°F), 70MPa (10150psi), Gas Phase (N ₂), Liquid Phase (NaOH), pH = 12.5, 30-min decompression	PASS	hours	NACE TM0185
Test 2: 16-hour, 107°C (225°F), 35MPa (5075psi), ½ Gas Phase (100% CO ₂), ½ Hydrocarbon Phase (Toluene:Kerosene 1:1), ½ Liquid Phase (tap water), 30-min decompression	PASS	hours	NACE TM0185
Test 3: 24-hour, 95°C (200°F), 20MPa (2900psi), Gas Phase (3% H ₂ S, 3% CO ₂ , 94% CH ₄), Liquid Phase (Brine), 30-min decompression	PASS	hours	NACE TM0185
Test 4: 30-day, 105°C (221°F), 35MPa (5075psi), ½ Gas Phase (6% H ₂ S, 6% CO ₂ , 88% CH ₄), ½ Hydrocarbon Phase (Toluene:Kerosene 1:1), ½ Water Phase (Brine 2% NaCl and 2% CaCl ₂), 30-min decompression	PASS	hours	NACE TM0185

Why ZCor300?

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Traditional epoxies often struggle with permeability and "brittleness" under high pressure. ZCor300 solves this through:

Molecular Density: The Novalac structure provides a tighter cross-link, preventing corrosive ions from reaching the steel substrate.

Mechanical Integrity: It is designed to flex with the tubing during thermal expansion without delaminating or cracking.

Thread Integration: Unlike many competitors, our coating extends to the first two threads and couplings, eliminating the "weak link" in the string.

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