

TIPC 90



TECHNICAL DATA

PIPECLAD® TIPC 90 INTERNAL PIPE COATING SYSTEM

PIPECLAD® TIPC 90 is a thermosetting epoxy powder coating engineered for use inside pipelines. It is typically applied over phenolic primers such as Pipeclad® Phenolic Primer HXR0015 or HXR0016.

SPECIFICATIONS-TEST STANDARD

Color	Dark Green	Visual Color-Pass
Gel Time at 177° C (350° F)	60-90 seconds	
Thermal Properties	T _{g1} 50 - 60° C T _{g2} 165 - 185° C	CSA Z245.20-10 (12-7)
Moisture Content (%)	0 - 0.5%	
Particle Size	D ₁₀ 7-14 µm D ₉₀ 125-145 µm	
Plate Flow at 300° F (149° C)	45-75 mm	

ADDITIONAL INFORMATION

Recommended Service:	Characteristics:
High temperature drill pipe	Primer: Phenolic Primer
Oil/water/gas wells	TIPC 90 Dry Film Thickness: 250–500 µm (10–20 mil) Other thicknesses may be used depending of application conditions & requirements.
Rod Pump wells	Use Temperature to 204° C (400° F)
Gas Lift	

POWDER PROPERTIES

Specific Gravity	1.39-1.49
Shelf Life at 25° C & 50% Relative Humidity	12 months
Coverage	~0.695 m ² /kg per mm (133.7 ft ² /lb per mil)

APPLIED FILM PROPERTIES	SPECIFICATION	TEST METHOD
Abrasion-Taber	Average weight loss: <10 mg	ASTM D4060 (CS-17 wheels & 1000g load at 1000 cycles)
Coefficient of Friction	0.24 / 0.25 (Kinetic / Static)	ASTM D1894
Flexibility (23° C / 74° F)	1.0° / PD	
Elongation	6.7%	D638 -Type V; 10 mm/min crosshead rate
Gouge Resistance (SL-1 blank bit) Mass/Depth of Penetration	30 Kg / 28 µm 40 Kg / 63 µm 50 Kg / 115 µm	NACE TM0215-2015

AUTOCLAVE PERFORMANCE TESTS*

TEMPERATURE
149° C (300° F)

PRESSURE
5,000 psi

MEDIUM
10% CO₂ / 90% CH₄
Hydrocarbons
Tap water

DURATION
16 hours

RESULTS
Pass

TEMPERATURE
149° C (300° F)

PRESSURE
6,500 psi

MEDIUM
27% CO₂ / 73% CH₄
Hydrocarbons
5% brine

DURATION
16 hours

RESULTS
Pass

TEMPERATURE
107° C (225° F)

PRESSURE
4,000 psi

MEDIUM
Alternating 3X (WAG)
5% brine
(H₂S-saturated)
100% CO₂

DURATION
6 days

RESULTS
Pass

TEMPERATURE
66° C (150° F)

PRESSURE
2,000 psi

MEDIUM
3% CO₂ / 97% CH₄
5% brine
(H₂S-saturated)
Rocker arm test

DURATION
28 days

RESULTS
Pass

TEMPERATURE
204° C (400° F)

PRESSURE
5,000 psi

MEDIUM
Gas phase: 25% CO₂, 1%
H₂S, and 74% CH₄,
Hydrocarbon phase:
Kerosene
Liquid phase: 5% Brine

DURATION
16 hours

RESULTS
No loss of adhesion,
blister, softening or
swelling

TEMPERATURE
95° C (203° F)
09-SAMSS-091
APPENDIX 3.5

PRESSURE
3,000 psi

MEDIUM
Gas phase: 3% CO₂, 3%
H₂S, 94% CH₄
Liquid phase:
Formation water brine

DURATION
24 hours

RESULTS
No loss of adhesion, no
swelling, softening and
blistering

TEMPERATURE
95° C (203° F)
09-SAMSS-091
APPENDIX 3.5

PRESSURE
3,000 psi

MEDIUM
Gas phase: CO₂
Liquid phase:
Wasia water

DURATION
24 hours

RESULTS
No loss of adhesion, no
swelling, softening and
blistering

TEMPERATURE
50° C (122° F)
09-SAMSS-091
APPENDIX 3.5

PRESSURE
Covered Vented
Container

MEDIUM
10% Vol. HCl

DURATION
24 hours

RESULTS
No loss of adhesion, no
swelling, softening and
blistering