



## Comparison of Typical Physical Properties: Concrete and Polymer Coatings

	PPC Coatings	Concrete**	Polyester**	Polyamide Epoxy**	Amine Epoxy**	Urethane**	Furan**
Min. Application Temp.*F	-40	40	40	60	60	60	45
Traffic Limitations - Light Return for Full Service	10 min. to a few hours****	28 days	16 hrs.	24 hrs.	24 hrs.	24 hrs.	24 hrs.
Tensile Strength PSI (MPA)	10,000 (70)	300 (2.1)	2,000 (14)	4,000 (28)	2,000 (14)	1,000 (7)	3,000 (21)
Compressive Strength PSI (MPA)	20,000 (140)	3,500 (24.5)	10,000 (70)	4,000 (28)	6,000 (42)	5,000 (35)	14,000 (98)
Flexural Strength PSI (MPA)	17,000 (120)	-	1,500 (10.5)	1,000 (7)	1,500 (10.5)	1,500 (10.5)	6,000 (42)
Coeff. Of Expansion In/In/F*	6.4x10 <sup>-6</sup>	6.5x10 <sup>-6</sup>	36x10 <sup>-6</sup>	40x10 <sup>-6</sup>	40x10 <sup>-6</sup>	-	-
Coeff. Of Expansion Cm/Cm/C*	11.5x10 <sup>-8</sup>	11.7x10 <sup>-8</sup>	36x10 <sup>-8</sup>	72x10 <sup>-8</sup>	72x10 <sup>-8</sup>	-	-
Shrinkage %	Zero, Linear	-	3	0.5	0.5	2	0.21
Adhesion Characteristics	Excellent	-	Poor	Good	Good	Good	Good
Abrasion Resistance	Excellent	-	Good	Good	Good	Good	Good
Resistance to Impact	Excellent	-	Poor	Poor	Poor	Poor	Poor
Resistance to Thermal Shock	Excellent	-	Poor	Poor	Poor	Poor	Poor

## Comparison of Chemical Resistance: Polymer Coatings

	PPC Coatings	Coal-tar Epoxy**	Amine Epoxy**	Epoxy Esther**	Polyester**	Polyvinyl**	Urethane**	Chlorinated Rubber**
<b>ACIDS:</b>								
Sulphuric 10%	R*	LR	R	LR	R	R	LR	R
Sulphuric 70%	R	NR	NR	NR	R	NR	NR	R
Hydrochloric 10%	R*	LR	R	LR	R	LR	LR	R
Hydrochloric 35%	R	NR	NR	NR	R	LR	LR	R
Nitric 10%	R*	NR	LR	NR	R	R	LR	R
Nitric 50%	R	NR	NR	NR	NR	NR	NR	NR
Acetic 50%	R*	NR	NR	NR	NR	NR	NR	NR
<b>WATER:</b>								
Distilled	R*	R	R	R	R	R	LR	R
Salt Water	R*	R	R	R	R	R	LR	R
<b>ALKALIES:</b>								
Sodium Hydroxide 5%	R	R	R	R	R	R	LR	R
Ammonium Hydroxide 10%	R	R	R	R	R	R	LR	R
<b>GASES:</b>								
Chlorine	R*	LR	LR	LR	R	LR	LR	R
Ammonia	R							
Hydrogen Sulphide	R*	R	R	R	R	LR	R	R
<b>ORGANICS:</b>								
Alcohols	R	LR	R	LR	R	NR	NR	LR
Aliphatic Hydrocarbons	R	LR	R	R	R	R	R	LR
Aromatic Hydrocarbons	R	LR	LR	LR	R	NR	R	NR
Ketones	LR	LR	LR	NR	NR	NR	NR	NR
Esters	R*	NR	LR	NR	LR	NR	NR	NR

\* Testing to at 150°F (65°C)

\*\* The above charts are reprinted from "Corrison Engineer Reference Book" with permission of the National Association of Chemical Engineers, Houston TX, U.S.A. 1983

\*\*\* See PPC Coatings "Chemical Corrosion Reference Guide" for specific recommendations.

\*\*\*\* Maximum achieved

R - Recommended

LR - Limited Recommendation

NR - Not Recommended