

ENCOR® FLEX 3186

MODIFIED-ACRYLIC LATEX FOR ELASTOMERIC COATINGS


**Product
Description**

ENCOR® Flex 3186 is a modified acrylic latex designed for cost-effective elastomeric roof and wall coatings, offering a good balance of properties such as weatherability, elongation, water resistance and caustic resistance. ENCOR® Flex 3186 is also designed with excellent dirt pickup resistance and is intended to be used in roof systems that meet the "Cool Roof Rating Council's (CRRC)" product rating program requirements for reflectance and emittance at VOC levels less than 50 g/L.

**Polymer
Design**

- Modified Acrylic Latex
- Low VOC Capable (<50 g/L)

**Performance
Benefits**

- Balance of tensile and elongation properties
- UV initiated crosslinking for excellent dirt pick-up resistance
- Outstanding caustic swelling resistance
- Excellent flexibility at temperature as low as 0°F
- Good water resistance
- Cement compatible

**Typical
Properties¹**

Total Solids, % by weight	50
Density, pounds per gallon	8.8
pH Value	8.0
Particle Size, μm	0.20
Viscosity, Brookfield, cP	300
Glass Transition Temp. (Tg), midpoint °C	-7
Clear Film Properties	
Ultimate Tensile Strength, psi	195
Ultimate Elongation, %	1115

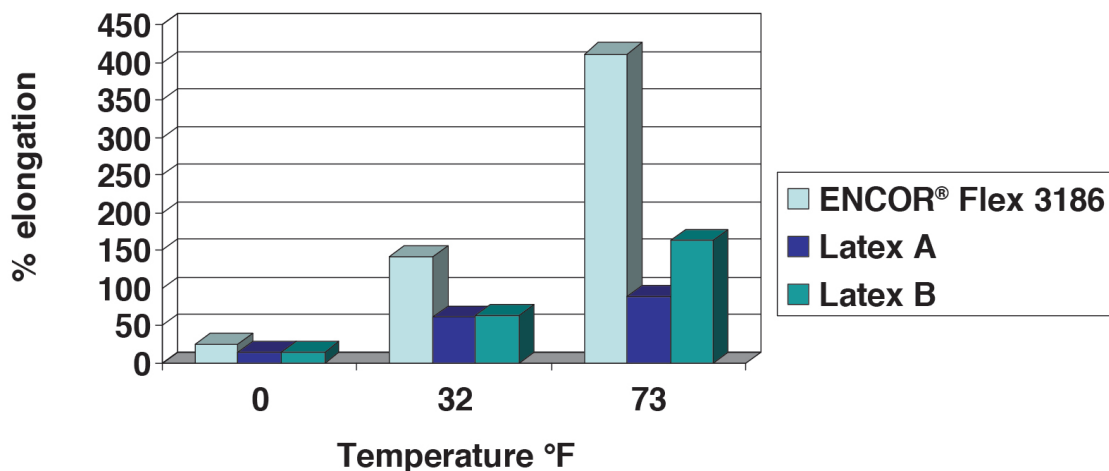
¹Typical values not to be construed as sales specifications.



Performance Evaluations

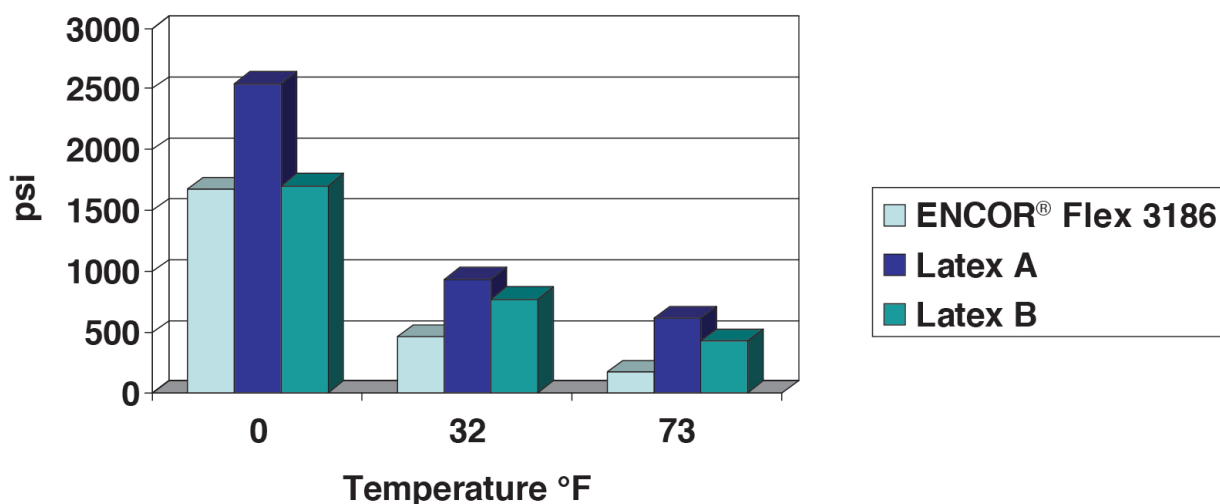
ENCOR® Flex 3186 was evaluated in a elastomeric roof coating formulation across standard Pigment Volume Concentration (PVC) ratios of 30, 40, and 50 PVC. The formulation based on ENCOR® Flex 3186 was compared to formulations based on commercially available acrylic and styrene acrylic latexes.

Elongation



ENCOR® Flex 3186 demonstrates excellent elongation properties across the temperature range.

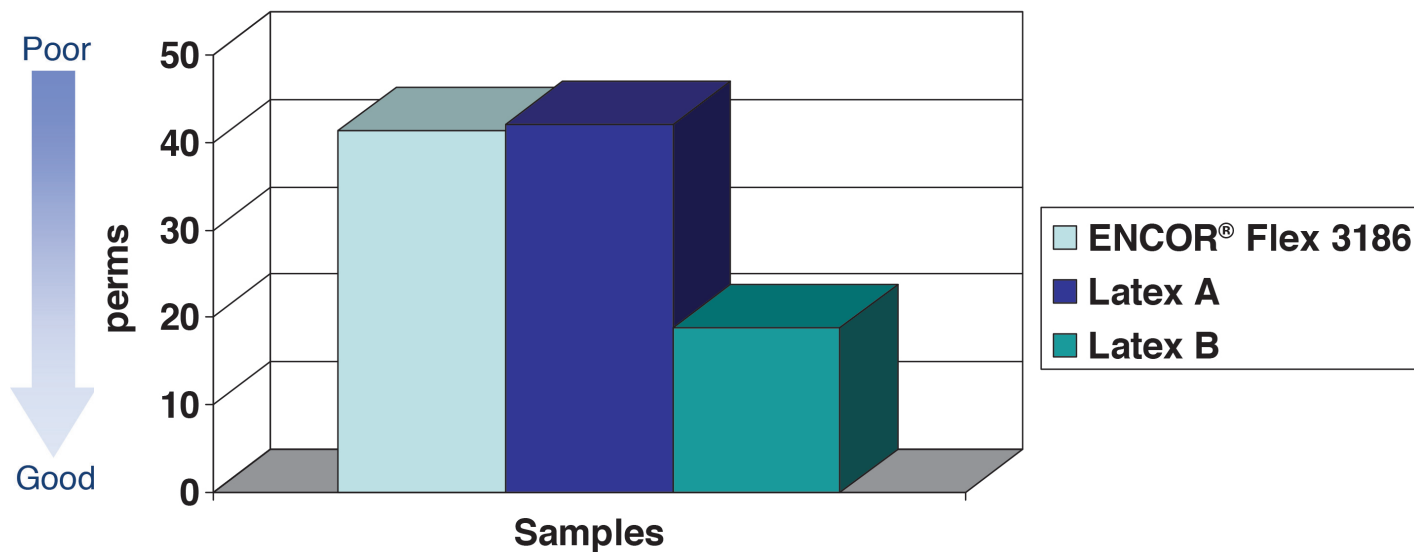
Tensile Strength



ENCOR® Flex 3186 has tensile strength properties across the temperature range comparable to competitive technologies.

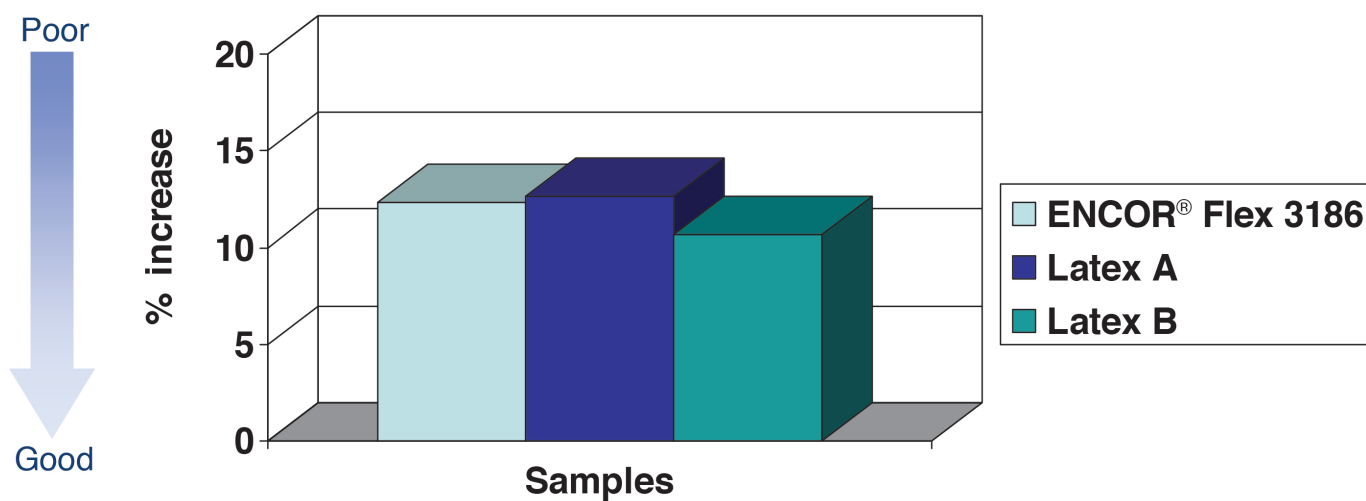
Water Resistance at 40% PVC

Permeance



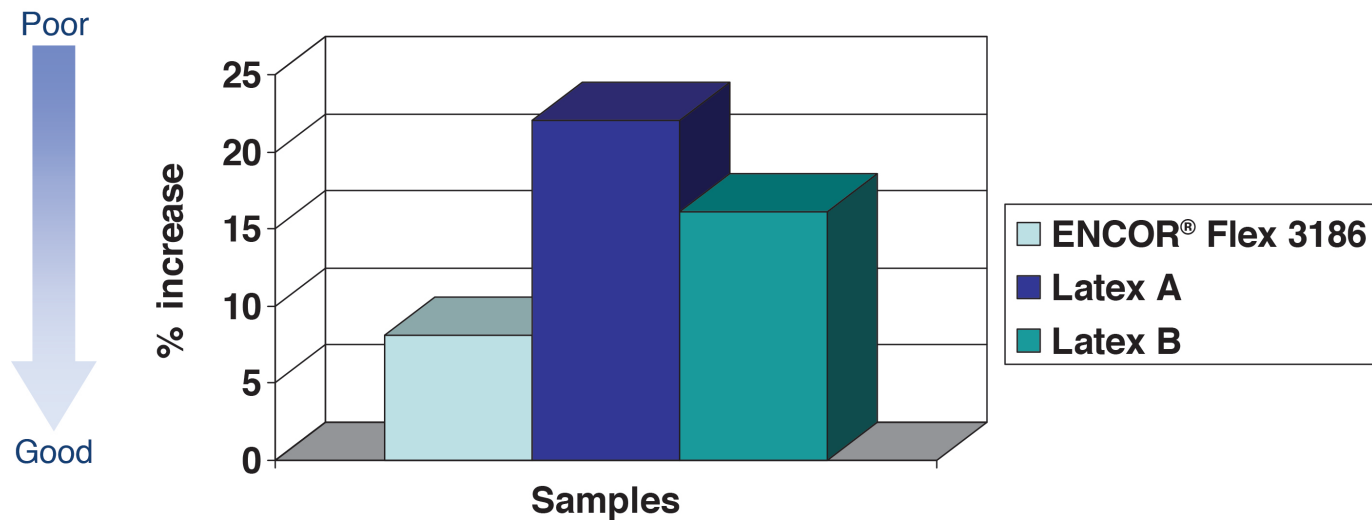
ASTM D-6083 target <50 perms. All technologies meet the performance requirement.

Water Swelling



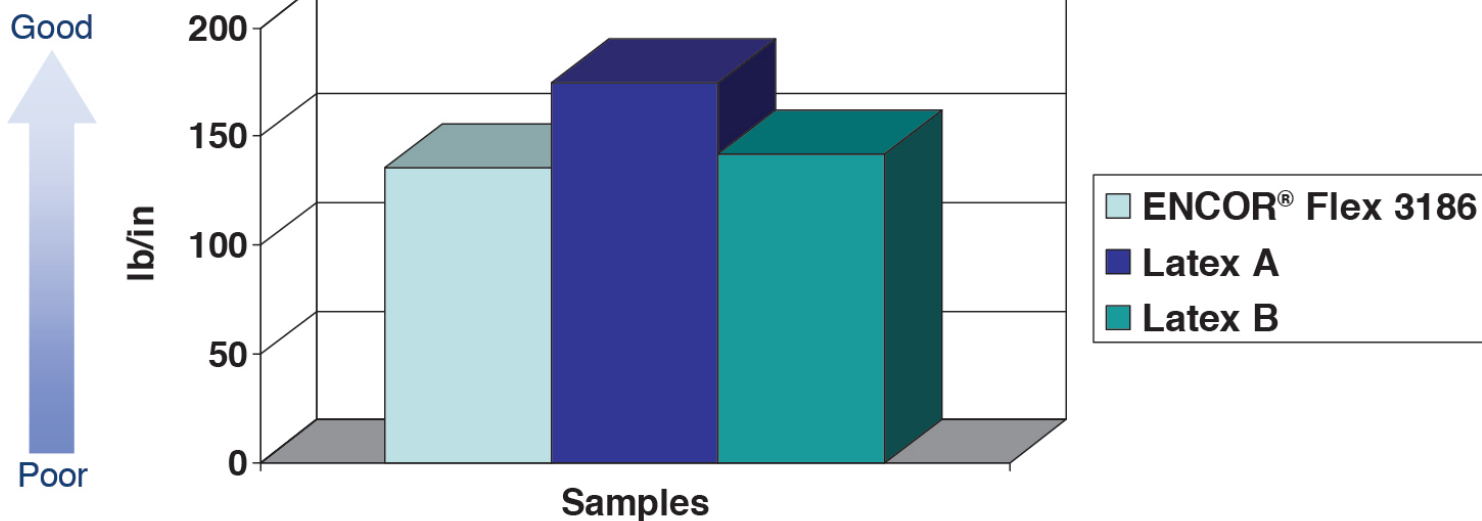
ASTM D-6083 target is <20%. All technologies meet the performance requirement.

Caustic Swelling at 40% PVC



ENCOR® Flex 3186 shows the least impact from caustic solution.

Tear Strength

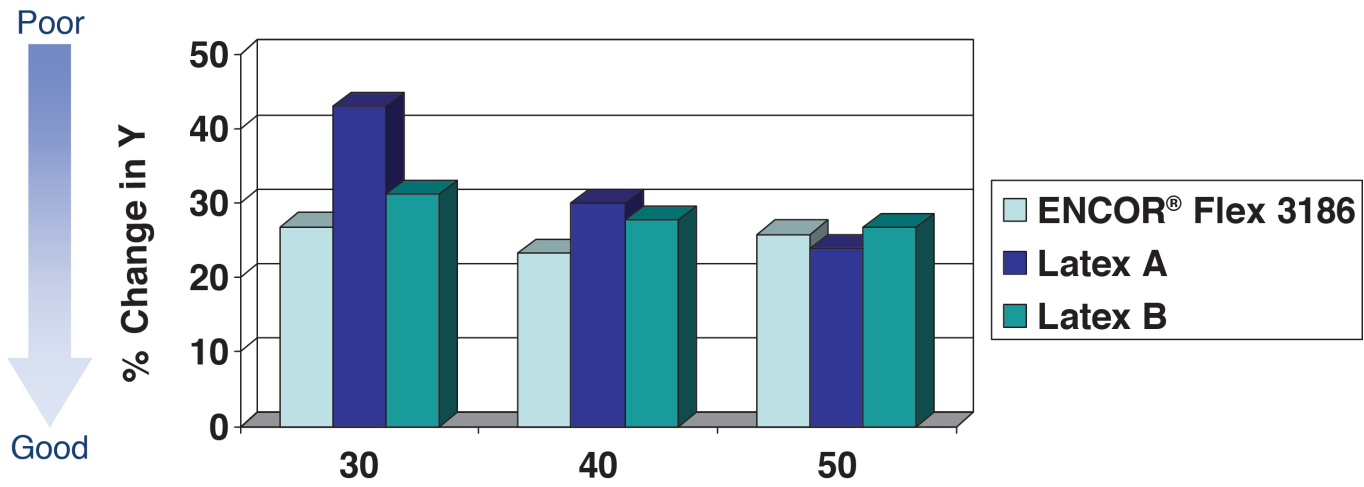


ASTM D-6083 requires >60 lb/in. All technologies perform similarly.

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Accelerated Dirt Pick-Up Resistance*



*Coating tested after 100 hours PVC OUV

ENCOR® Flex 3186 demonstrating the best pick-up resistance across PVC range.

Accelerated Dirt Pick-Up Resistance



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Starting Point Formulation

ENCOR® Flex 3186 Formulation

Ingredients		Lbs	Gallons	Paint Properties:	
<i>Grind</i>				Weight Solids, %	64.5
Water	Solvent	86.0	10.3	Volume Solids, %	50.3
Tamol 165	Dispersant	25.5	2.9	PVC, %	40.4
Surfynol® 104E	Surfactant	2.5	0.3	VOC, g/L	64
Propylene Glycol	Solvent	19.2	2.1	Density, lb/gal	11.8
Foamaster® NXZ	Defoamer	1.5	0.2	Total Pigment, %	41.1
Ti-Pure® R-960	TiO ₂	98.0	2.9	Non-volatile Binder, %	23.5
Drikalite®	Extenders	385.0	17.1	Coalescent Level, %	1.5
Polyphase® 663	Mildewcide	7.0	0.3	Dispersant Level, %	1.1
<i>Letdown</i>					
ENCOR® Flex 3186	Binder - Latex	550.0	61.8		
Texanol®	Solvent	4.1	0.5		
Foamaster® NXZ	Defoamer	4.1	0.5		
Polyphobe 106 HE	HASE Thickener	8.0	0.9		
Ammonium Hydroxide, 28%	Base	1.6	0.2		
Totals		1192.5	100.1		
PVC = 40%					

Formulating Guidelines

- Avoid associative thickeners due to water sensitivity
- Extenders should be limited to low oil absorption and particle sizes above 10µm
- Keep pigment volume concentration less than 45%; higher PVCs can lower adhesion results
- Field testing is recommended to assure adhesion

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Starting Point Formulation

ENCOR® Flex 3186 Zinc Oxide Formulation

Ingredients		Lbs	Gallons	Paint Properties:	
<i>Grind</i>				Weight Solids, %	64.3
Water	Solvent	99.0	11.9	Volume Solids, %	49.9
Coadis™ 123K	Dispersant	25.5	2.9	PVC, %	39.8
Surfynol® 104E	Surfactant	2.5	0.3	VOC, g/L	45
Propylene Glycol	Solvent	10.0	1.1	Density, lb/gal	11.9
Foamaster® NXZ	Defoamer	1.5	0.2	Total Pigment, %	41.0
Ti-Pure® R-960	TiO ₂	98.0	2.9	Non-volatile Binder, %	23.5
Drikalite®	Extenders	360.0	16.0	Coalescent Level, %	1.5
Eagle Zinc	Zinc Oxide	25.0	0.5	Dispersant Level, %	1.3
Acticide® BW20	Preservation	1.1	0.1		
Polyphase® 663	Mildewcide	7.0	0.3		
<i>Letdown</i>					
ENCOR® Flex 3186	Binder - Latex	550.0	61.8		
Texanol®	Solvent	4.1	0.5		
Foamaster® NXZ	Defoamer	4.1	0.5		
Viscoatex™ 730	HASE Thickener	6.0	0.7		
Ammonium Hydroxide [28%aq]	Base	1.6	0.2		
Totals		1194.5	100.0		

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Product Safety

Before handling the materials listed in this bulletin, read and understand the product SDS (Safety Data Sheet) for additional information on personal protective equipment and for safety, health and environmental information. For environmental, safety and toxicological information, contact our Customer Service Department at 1-866-837-5532 to find a SDS, or visit our web site: www.arkemacoatingresins.com

No chemical should be used as or in a food, drug, medical device, or cosmetic, or in a product or process in which it may contact a food, drug, medical device, or cosmetic until the user has determined the suitability and legality of the use. Since government regulations and use conditions are subject to change, it is the user's responsibility to determine that this information is appropriate and suitable under current, applicable laws and regulations.

Arkema Coating Resins requests that the customer read, understand, and comply with the information contained in this publication and the current SDS(s). The customer should furnish the information in this publication to its employees, contractors, and customers, or any other users of the product(s), and request that they do the same.

Storage and Handling

Follow procedures typically recommended for polymer dispersions. Use corrosion-resistant storage tanks and piping. Air-operated diaphragm pumps are preferred.

Packaged material should be stored indoors in the original unopened and undamaged container, in a dry place. Exposure to direct sunlight should be avoided.

Avoid extreme temperatures. Do not freeze; store between 40-90°F (4-32°C).

For more details, refer to "Storage and Handling of Arkema Coating Resins Products – A Basic Guide".



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