



RayFlex 2024 Technical Bulletin
Acrylic Elastomeric Polymer

RayFlex 2024 is a 100% acrylic elastomeric emulsion polymer designed for wall mastic and roof coatings. Coatings formulated with RayFlex 2024 have outstanding exterior durability and UV resistance. The chemistry of RayFlex 2024 offers high elongation and tensile strength properties.

Suggested Uses

- Wall mastic
- Roof coatings

Key Features

- High elongation and tensile strength
- Low temperature flexibility
- Excellent exterior durability and UV resistance
- Excellent dirt pick up resistance

RayFlex 2024 Typical Physical Properties

Polymer type	Acrylic emulsion polymer
Weight solids	59 - 61%
Viscosity (Brookfield Model RVT)	100 - 1000 cps, #3/100 rpm
pH	7.5 – 8.5
Tg (MDSC)	-17°C
MFFT (ASTM D-235)	<0°C
Particle Size (Mean)	0.50 microns
Surfactant Charge	Nonionic/Anionic
Weight per Gallon	8.90 lbs/gal
Bulking Value	0.1124 gal/lb
Freeze Thaw Stability	Do Not Freeze

For 40 years, Specialty Polymers has been developing state of the art resins for the paint and coatings industry. With more than 250 products to choose from, Specialty Polymers has the right polymer to meet your needs.

Suggested Formulations

RayFlex 2024 – ASTM D6083 Roof Mastic Formula

Raw Materials	Weight (lbs)	Volume (gal)	Supplier
Water	124.95	15.00	
Tamol 850	6.00	0.61	Rohm and Haas
KTPP	1.50	0.19	FMC Corporation
Foamaster NXZ	2.50	0.33	Cognis
Kadox 915	25.00	0.54	Zinc Corp of America
R960 TiO2	75.00	2.32	DuPont
Minex 4	125.00	5.76	Unimin
Duramite	280.00	12.44	Imerys
Water	61.25	7.35	
RayFlex 2024	450.00	50.56	Specialty Polymers, Inc.
Foamastex NXZ	2.50	0.33	Cognis
Mergal K12N	2.00	0.23	Troy Chemical
Polyphase 663	5.00	0.57	Troy Chemical
Texanol	5.13	0.65	Eastman
Propylene glycol	21.52	2.50	Eastman
Bermacoll EBS 451	4.50	0.42	Akzo Nobel
Ammonium hydroxide (28%)	1.50	0.20	
Total	1,193.35	100.00	

Typical Properties of the Roof Mastic RayFlex 2024 – ASTM 6083 Formula

Formulation Parameters		Physical Properties	
Density, lbs/gal	11.9	Viscosity, KU	113
Weight solids, %	65.9	pH	8.7
Volume solids, %	51.0	ICI, P	1.4
PVC, %	42.1	Coating VOC, g/L	65

Suggested Coalescing Solvent

0 - 5% Texanol

RayFlex 2024 Performance Data versus ASTM D6083 Requirements

Liquid Physical Property

Physical Property	ASTM	Requirements	RayFlex 2024 – Roof Mastic
Density, lbs/gal	D1475	NA	11.90
Viscosity, KU	D562	85 – 141 KU	113
ICI Viscosity, P	D4287	NA	1.4
pH	E70	NA	8.7
Volume solids, %	D2697	>50%	51.0
Weight solids, %	D1644	>60%	65.9

Film Physical Property

Physical Property	ASTM	Requirements	RayFlex 2024 – Roof Mastic
Initial Percent Elongation, %	D2370	Minimum 100% @ 73°F	250 - 470
Initial Tensile Strength, psi	D2370	Minimum 200 psi @ 73°F	210 - 230
Final Percent Elongation after 1000 hours accelerated weathering, %	D2370	Minimum 100% @ 73°F	130 - 230
Tear Resistance, lbf/in	D624	> 60 lbf/inch	90 - 100
Water Swelling, %	D471	Maximum 20% (mass)	9 - 10
Adhesion, wet, pli	D903	Minimum 2.0 pli, wet	2.0 – 3.0 (galvanized steel) 2.0 – 3.0 (concrete)
Permeance, US Perms	D1653B, wet cup	Maximum 50 perms	30 - 40
Low Temperature Flexibility after 1000 hours accelerated weathering, ½ inch Mandrel	D522	Minimum pass (1/2 inch) mandrel @ -15°F	Pass

IMPORTANT: The information contained in this Technical Bulletin is intended to be a guideline. Specialty Polymers recommends users of the product perform their own testing to determine the suitability of the product in their application.