

Information Sheet

Veova™ 10 Vinyl Ester

Blending Resins for Improved Elastomeric Roof Coatings



Elastomeric Roof Coatings

Protecting and saving energy

Elastomeric roof coatings are the top layer of a composite roof system. Elastomeric roof coatings are applied in liquid form and when dry exhibit elastic properties. Thus, they can undergo dimensional changes with temperature and substrate movement and return to their original shape.

Roof coatings can also work as reflective systems, extending the life of the roof, by keeping a roof surface cool and providing a level of protection from the sun and weather. This brings savings in two ways: in roofing materials and in energy costs.

The elastomeric roof coating becomes the outermost layer of the roof, and is exposed to sunlight (infrared and UV radiation), rain, and physical damage. These systems must then be formulated with binders which exhibit good outdoor durability, elastic properties, and water resistance.

Key Requirements

Key requirements for elastomeric roof coatings

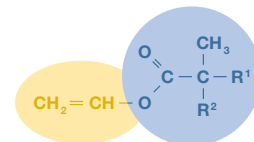
- In North America, the standard is the ASTM D-6083
- Reduced water absorption
- Adhesion to roofing substrates
- UV resistance
- Good balance between elongation and tensile strength

Veova Vinyl Ester

Veova vinyl ester quick facts

Veova 10 vinyl ester is a monomer with a unique hydrophobic bulky structure and is used in the production of a broad range of high-quality emulsion polymers. Key characteristics of Veova 10 vinyl ester are:

- Easily polymerizable with vinyl acetate, ethylene and acrylates
- Hydrophobic
- Low surface tension
- UV Resistant
- Hydrolytically stable



Emulsions for Elastomeric Roof Coatings

Unmet needs in the market

The majority of waterborne systems used in North America for elastomeric roof coatings are based on all-acrylic emulsions. The market, however, is looking for improved performance, mostly in the following areas:

- Reduced water absorption
- Adhesion to roofing substrates
- Elongation



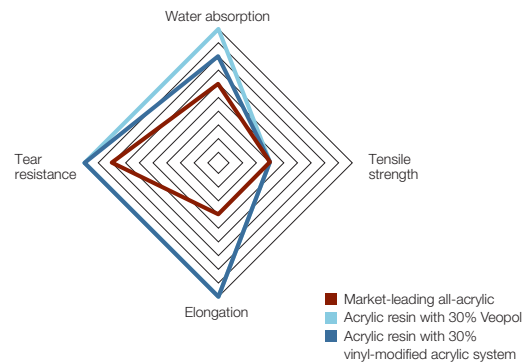
Hexion developed two systems to be used as modifiers of all-acrylic resins:

- a vinyl-modified acrylic resin based on vinyl acetate, VeoVa 10 vinyl ester, and butyl acrylate **and**
- a vinyl system rich in VeoVa 10 vinyl ester.

These resins were blended at 30 % on polymer solids with a market-leading all-acrylic resin and tested in formulated elastomeric roof coatings against the base all-acrylic emulsion.

Description	Solids (%wt.)	Particle size (nm)	T _g (°C)
Market-leading all-acrylic system	55	360	-32
Blending Resins			
VA/VV/BA vinyl-modified acrylic system	54	160	-13
VeoVa 10-rich vinyl system (VeoPol)	50	187	3

The performance of these blended systems against the reference is summarized in the graph:



Summary

Improved elastomeric roof coatings based on blending resins with VeoVa 10 vinyl ester

- Blending resins allow easy upgrade of a wide variety of different elastomeric roof coating formulations
- Reduced water absorption of the roofing membrane
- Substantially increased elongation

Hexion's Versatics Business Unit has global commercial presence and has a strong commitment to the development of customer solutions. We achieve this by operating regional technical laboratories, which support customers with starting-point formulations and application guidance.



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