Construction

Technical Data Sheet

Styrofan® 1186

We create chemistry

Chemical Nature	**Aqueous styrene-butadiene copolymer dispersion for use in concrete modification.**

Properties

Typical Properties	Solids content	%	ca. 48
	pH		ca. 10
	Viscosity at 23 °C (Brookfield RVT, Spindle #1, at 20 rpm)	mPa s	ca. 38
Other properties of the dispersion	Surface Tension	dynes/cm	ca. 32
	Specific Gravity	lbs/gal	ca. 8.5
		g/cm³	ca. 1.01
	Bound Styrene	%	ca. 66
	Average Particle Size	µm	ca. 0.2
	Dispersion type		anionic
	Coagulum (100 mesh)	Wt. %	< 0.1
	Sensitivity to frost	cycles	ca. 2
Properties of the film	Glass transition temperature Tg (DSC)	°C	ca. 6
	Mechanical strength*		
	Tensile strength	psi	ca. 600
		N/mm²	ca. 4
	Elongation at break	%	ca. 200
	Appearance		slight yellow, transparent
	Surface		tack-free

*This figure should be taken for comparison purposes only. All that can be obtained from it is an idea of the magnitude concerned

Applications

Fields of application

Styrofan® 1186 is used mainly for modifying concrete mixtures. The most notable applications are concrete for bridge deck and parking garage overlays. The addition of Styrofan® 1186 to conventional unmodified concrete mixtures reduces the amount of water required for the placement of the mix. The lower water typically results in a cured concrete with higher compressive strength. The polymer forms an elastic membrane throughout the matrix of the cured concrete, reducing the formation of voids and hairline cracks therein. Moreover, the resulting concrete mixture shows improved resistance to the penetration of oil, salts and aids in the adhesion of the new concrete to old. Flexural strength and abrasion resistance are also increased.

Styrofan® 1186 has been pre-qualified by the FWHA under FHWA RD-78-35.

Safety

General The usual safety precautions when handling chemicals must be observed. These include the measures described in Federal, State and Local health and safety regulations, thorough ventilation of the workplace, good skin care and wearing of protective goggles.

Material Safety Data Sheet All safety information is provided in the Material Safety Data Sheet for Styrofan® 1186.

Storage

Storage requirements for Styrofan® 1186 vary according to the method of shipment. Since indoor storage at a construction site usually is not feasible, a temporary covering must be provided for the storage container. Use of a white polyethylene film, a minimum of 4 mil thickness, is suggested for protection of the storage container from the elements. In hot weather, at temperatures over 85ºF, the storage container should be covered with wet burlap, which will help to maintain the ideal temperature of the latex.

The ideal storage temperature range for Styrofan® 1186 is between 50ºF – 85ºF. However, slightly higher or lower temperatures will not affect the quality of the latex. At higher temperatures, surface skin formation may occur. This phenomenon is usually caused by the evaporation of water at the latex surface. To minimize this effect the latex temperature should not be allowed to exceed 105ºF. While Styrofan® 1186 has been tested by the FHWA and shown to be freeze-thaw stable, it is recommended that the latex not be subjected to freezing conditions.

Important

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