

ZEFFLE S-7510 and S-7520 (DEVELOPMENTAL)

Waterborne Resins

Waterborne Fluoropolymer, Weather, Chemical/ Solvent, corrosion resistant as well as dirt removability

Characteristics

Waterborne amorphous type polymer consisting of a VdF-copolymer and an acrylic-polymer

Excellent weather resistance with decades of performance

Anti-corrosion, chemical resistance, and staining reduction / elimination

Various gloss and colors can be obtained

Coating formulation could be dried at room temperature or annealed at elevated temperatures.

Applications can be performed by various methods, including spraying, brushing, dipping, coil coating, roller painting and in roll to roll processes



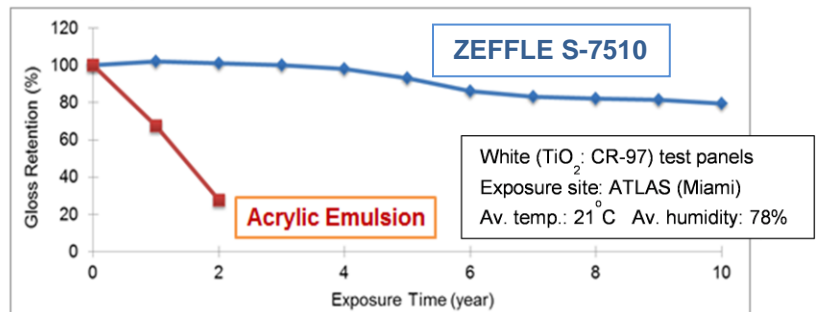
* Small portion of the roof was coated with polyurethane



Polyurethane
Dirt collected AND
chalking after 5 years

ZEFFLE S-7510
Dirt collected, no
chalking after 5 years

Field Exposure in Florida



Properties*	As Approximate Value	
	ZEFFLE S-7510	ZEFFLE S-7520
pH	7-8	7-8
MFT (in °C)	40-46	6-14
Ionic character	Anion/non-ion	Anion/non-ion
Viscosity (mPa-S) 25 °C via BM type viscometer	< 200	10-100
Molecular Weight	Moderate	Moderate
Particle Size (nm) via Dynamic Light Scattering	160-180	180-200
Tg (°C)	40 (DSC)	6-14 (DSC)
Storage stability (4 weeks @50 °C)	Pass	Pass
Mechanical stability	Pass (5,000 rpm, 1 min in a homogenizer)	Pass (10,000 rpm, 1 min in a homogenizer)
Freezing stability	Pass	Pass

*Typical properties are not suitable for specification purposes.

Properties*		ZEFFLE S-7510	Acrylic Emulsion
Gloss/60		70-65	80
Pencil Hardness		HB	B
Water resistance	1 month at 20°C	A	A
Warm water resistance	7 days at 50°C	A	C
Chemical Resistance	10% sulfuric acid, 7 days immersion	A	C
	Saturated Ca(OH) ₂ aq	A	A
Dirt Pick Up Resistance	Carbon 1 hr at 40°C	A	C
	Xylene marker	B	C
Notes: A(excellent), B(Fair), C(Poor)			

*Typical properties are not suitable for specification purposes.

ZEFFLE S7510 Starting Point Formulation:

Mill Base:

Ingredient	Function	Amount (%)
Water		22.20
Disperbyk-190	Dispersant	3.50
Tipaque CR-97	TiO ₂ -Pigment	70.00
Ethylene-glycol		4.00
Surfynol DF-110D	Defoamer	0.30
Total		100.00

Let Down:

Ingredient	Function	Amount (%)
ZEFFLE S-7510	Dispersion	69.40
Ammonia-water 28%	Solvent	0.35
Mill base		24.49
DBE-IB (DuPont)	Coalescent	5.20
Polyether type	Thickener (17.5% solid)	0.56
Total		100.00