ESSENTIAL R5191

SELF CROSS-LINKING ACRYLIC EMULSION

R5191 is a self-crosslinking polymer that can be formulated into <50 g/l concrete sealers. When formulated properly the sealers exhibit excellent wet adhesion properties, are non-blushing, non-yellowing, and show excellent chemical and stain resistance properties. Also, it will stop efflorescence from occurring.

KEY BENEFITS

- Non-blushing
- Stops efflorescence
- <50 g/l sealers
- Wet adhesion

TYPICAL PROPERTIES*

Appearance	Translucent White
pH	7.5
Solids, % by Weight	41.0
Viscosity, cps @ 25°C	<200
Density, lbs/gal	8.7
% VOC	0.1
Tg °C	6
Acid Number	42
Freeze/Thaw Stability	Fails
Konig Hardness (secs)	47

*These values should not be interpreted as specifications.

Essential® Polymers

The Spark of Innovation

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Self cross-linking Acrylic Emulsion

Starting Point Formulation – ALW063

Materials	Pounds
Essential R5191	608.00
Dynol 800	2.90
Pre-blend water and solvent, then add.	
Water	380.70
Dipropylene Glycol Butyl Ether	7.90
Tego Foamex 825	0.50
Total:	**1000.00**

Formulation Attributes

Solids, % by weight	25
pH	7.95
Viscosity (CPS)	<50
VOC (g/L)	46.1
Wt/gal	8.49

Performance Information

Tests performed on CRS panels (1-mil dry).

Konig Hardness (seconds):	**1 day** - 31	**7 day** - 47
Cross Hatch Adhesion (7 Day):	**Dry** - 5B	**Wet** - 4B

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Stain & Chemical Resistance Properties

Tested after 7 days, 1 Hour Test, 1 Hour Recovery

Stain Testing

Coffee	No Effect
Red Wine	No Effect
Ketch-up	No Effect
Mustard	Slight Yellowing/Recovers
Iodine 7.5%	No Effect

Chemical Testing

Water	No Effect
Motor Oil	No Effect
NaOH 10%	Slight Softening/Recovers
NaCl 10%	No Effect
$CaCl_2$ 10%	No Effect
TSP 3%	Moderate Softening/Recovers
Ammonia 10%	Slight Softening/Recovers
HCl 5%	No Effect
Brake fluid	No Effect
EtOH 50%	Moderate Softening/Recovers
Gas	Slight Softening/Recovers
Skydrol	Moderate Darkening & Softening/Does Not Recover

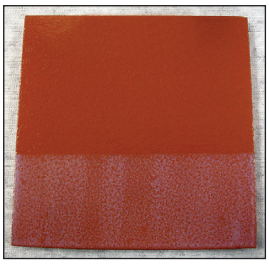
Water Resistance Testing – Comparative Study

Procedure – 2 coats of sealer are applied to a red quarry tile. The coats are allowed to dry for 2 hours. After the second coat is dried the tile is partially submersed into water for 16 hours.

The pictures below show the results. As you can see R5191/ALW063 compares very favorably to the typical solvent-based wet look sealer and out performs an existing commercially available water-based sealer.

Solvent-based wet look sealer

R5191/ALW063



Water-based sealer

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Efflorescence Testing Procedure:

Substrate:

- Porous fireplace bricks

Testing Procedure:

- Cover bottom inch of all sides of brick with masking tape.
- Use sponge applicator to coat brick completely on top and 4 sides above masking tape.
- After 1 hour of dry/cure time, apply a 2nd coat.
- Allow 1 day cure, at room temperature.
- Remove masking tape.
- Prepare a ~26% salt water solution.
- Place coated bricks in a stainless steel or plastic pan and fill to the coating line with the saturated salt solution.
- Monitor solution level daily and keep level at the coating line.
- Compare efflorescence each day. End test at 7 days.

R5191 Acrylic/Styrene Acrylic Polymer