



LUNCH & LEARN

Introduction to Roof Coatings





Presentation Outline

- Industry Terms
- Calculating Dry Film Thickness
- Adhesion Test Instructions
- Product Chemistry Overview





Industry Terms





Industry Terms

Viscosity

- Spray-Grade
- Brush-Grade
- Butter-Grade
- Flashing-Grade

Data Sheet Terminology

- Solids by Volume
- Elongation
- Tensile Strength
- Cure Time
- Dry Time
- Emissivity
- Flash Point
- Permeance
- Reflectivity
- Solids by Weight
- VOCs
- Water Absorption

Other Critical Terms

- Mil
- Wet Mil Thickness
- Wet Mil Gauge
- Dry Film Thickness (DFT)
- Field Adhesion Test
- Batch Retain
- Detail Drawing
- Fluid-Applied SYstem
- Stretch Factor
- Waste Factor





Calculating Dry Film





Calculating Dry Film Thickness (DFT)

1 gallon per 100 sq ft of any coating or primer = 16 wet mils

What's left over after the liquid evaporates are the solids that make up the DFT.

$$\begin{array}{ccccc} \text{W} & \times & \text{V} & = & \text{D} \\ \text{Wet Mil Thickness} & & \text{Volume by Solids} & & \text{Dry Film Thickness} \end{array}$$





Adhesion Test Patch





Adhesion Test Patch



[Instructions](#)





Product Chemistry Overview





Product Chemistry Overview

Benefits, Limitations, and Suitable Substrates

- Asphalt Emulsion
- Aluminum
- Acrylic
- Butyl
- Silicone (Standard & High Solids)
- Single Component Urethane (Aliphatic & Aromatic)
- Primers & Accessories





Chemistry Overview – Asphalt Emulsions

Non-Fibered Emulsions

Fibered Emulsions

Benefits

- Inexpensive
- Water-Based, easy clean up
- Fills in “alligatoring” and small cracks
- Can be used with fabric to seal large areas

Limitations

- Water-based, can freeze
- Cold temperature applications

Suitable Surfaces

- Modified Bitumen
- Smooth BUR
- Gravel BUR



Asphalt Emulsions





Chemistry Overview – Aluminum

Non-Fibered Aluminum

Fibered Aluminum

Benefits

- Inexpensive
- Gives contractor another option
- Self-priming over light rust

Limitations

- Not for waterproofing
- Not as reflective as white
- Less energy efficient than white
- Limited life span

Suitable Surfaces

- Modified Bitumen
- Smooth BUR
- Metal



Aluminum





Chemistry Overview – Acrylic

Acrylic 211

High Tensile Acrylic 211

High-Build Acrylic 212

High-Gloss Acrylic 215

Acrylic Brush-Grade 220

Acrylic Butter-Grade 221

Acrylic Flashing-Grade 222

Acrylic Skylight Sealer 230

Benefits

- Easy to Spray
- Easy to Clean
- Economical

Limitations

- Ponding Water
- Cold Temperature Applications

Suitable Surfaces

- Metal
- Modified Bitumen
- Single-Ply
- Smooth BUR
- SPF



Acrylic 211





High Tensile Acrylic 211



High-Build Acrylic 212



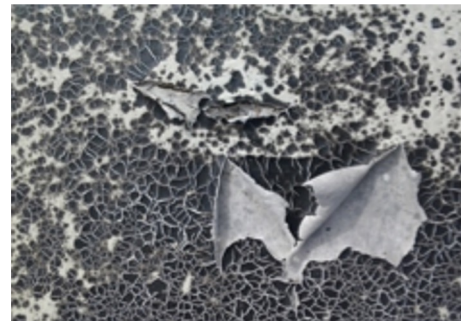
High-Gloss Acrylic 215





Potential Acrylic Issues

Problems: This is what acrylic coatings will look like if applied in ponding water situations.





Chemistry Overview – Butyls

Butyl 310

Butyl Brush-Grade 320

Butyl Flashing-Grade 321

Benefits

- Extremely high elongation
- Fast drying
- Great for repairs
- Can be used as a vapor retardant over SPF
- Very low perm rating

Limitations

- Low solids content
- Can be challenging to spray
- Need acrylic top coat to stay bright white

Suitable Surfaces

- Metal
- Modified Bitumen
- Single-Ply
- Smooth BUR
- SPF



Butyl 310





Chemistry Overview – Silicone

Silicone 410

High Solids Silicone 412

Silicone Walk Path 415

Silicone Brush-Grade 422

Benefits

- The best UV stability
- Wears much slower
- Moisture cured
- Fast drying
- Cannot be washed off by rain
- Able to withstand ponding water

Limitations

- Easily attracts dirt
- Can be challenging to spray
- Very slippery when wet

Suitable Surfaces

- Metal
- Modified Bitumen
- Single-Ply
- Smooth BUR
- SPF



Silicone 410



Silicone Walk Path 415





Chemistry Overview – Urethane

Aliphatic Urethane 510

Aromatic Urethane 520

Urethane Brush-Grade 522

Benefits

- Extremely durable
- Better adhesion qualities
- Moisture cured
- Fast drying
- Cannot be washed off by rain
- Able to withstand ponding water

Limitations

- Can be challenging to spray
- Xylene based – harsh on equipment
- Always curing - even in the pail

Suitable Surfaces

- Metal
- Modified Bitumen
- Single-Ply
- Smooth BUR
- SPF



Aromatic Urethane 520





Chemistry Overview – Terminator 622

Terminator 622

Benefits

- Applies & cures underwater
- Better adhesion qualities
- Adheres to silicone
- Moisture cured
- Fast drying
- Cannot be wash away by rain
- Able to withstand ponding water

Limitations

- No spray-grade version

Suitable Surfaces

- Metal
- Modified Bitumen
- Single-Ply
- Smooth BUR
- SPF
- Concrete



Terminator 622





Chemistry Overview – Primers & Cleaners

Acrylic Bonding Primer 905

Red Oxide Rust Prime 912

Color Prime 915

EcoCleaner 925

Fabric Bond 930

Acrylic Clear Prime 9000

Benefits

- Cures and prevents rust
- Promotes adhesion
- Used to install fabric

Limitations

- One product does not solve all priming issues

Suitable Surfaces

- Metal
- Modified Bitumen
- Single-Ply
- Smooth BUR
- SPF
- Concrete



Red Oxide Rust Prime 912





Chemistry Overview – Wall Coatings

Acrylic Wall Coat 2000

High-Performance Elastomeric Wall Coat 2100

Benefits

- Easy to spray
- Easy to clean

Limitations

- Cold temperature

Suitable Surfaces

- Concrete
- Cinder Block
- Brick



Acrylic Wall Coat 2000





Chemistry Overview – Accessories

Polyester Fabric

Seam Tape

3m Roofing Granules

Walk Path Granules 1100

Micro Fibers

Chip Brushes

Caulk Guns





Polyester Fabric





Chemistry Overview – Cleaning Solvents

Rule 66 Mineral Spirits

Xylene



Product Cross Reference Chart

Product Cross Ref Chart



Product Cross Reference Chart Updated 11/08/2021

PRODUCT:	DESCRIPTION:	SUITABLE SURFACES:	PENDING APPROVED:
ACRYLIC PRODUCTS			
ACRYLIC 211	100% acrylic elastomeric coating for all roof substrates. Contains rust inhibitors and algaecides, making it ideal in the extreme cold. Its elongation and tensile strength both increase at lower temperatures.	Metal, Mod Bit, Single-Ply, SPF, Smooth/ Granulated BUR	No
HIGH-TENSILE ACRYLIC 211	Technologically advanced, high-solids, acrylic elastomer uniquely formulated with high tensile strength and elongation properties. It is our best acrylic coating for color retention on custom tint projects.	Metal, Mod Bit, Single-Ply, SPF, BUR	No
HIGH-GLOSS ACRYLIC 215	High-Gloss Acrylic 215 is a high-gloss, single-component, water-based, flexible PVC coating for spray application. It is designed to be a low-build protective coating that provides unsurpassed weathering, abrasion resistance, colorfastness, and dirt pick-up resistance.	Metal	No
ACRYLIC BRUSH-GRADE 220	100% acrylic elastomeric caulk used to bridge gaps in flashing, seams, fasteners and penetrations.	Metal, Mod Bit, Single-Ply, SPF, BUR	No
ACRYLIC BUTTER-GRADE 221	100% acrylic elastomeric caulk used to bridge gaps in flashing, seams, fasteners and penetrations. Whipped and thicker than Brush Grade 220.	Metal, Mod Bit, Single-Ply, SPF, BUR	No
ACRYLIC FLASHING-GRADE 222	100% acrylic, high solids, elastomeric sealant. It is manufactured from a unique acrylic resin specifically designed to provide increased tensile strength and elongation.	Metal, Mod Bit, Single-Ply, SPF, BUR	No
ACRYLIC SKYLIGHT SEALER 230	An elastomeric coating is to be used as a skylight sealer to stop the degradation of the skylights.	Skylights	NA
BUTYL PRODUCTS			
BUTYL COATING 310	This spray-applied, vapor retardant polymer provides a durable, seamless waterproofing that resists cracking and allows for normal expansion.	Metal, Mod Bit, Single-Ply, BUR	Yes*
BUTYL BRUSH-GRADE 320	Single component, brush-able grade, seam sealer specially formulated to provide a waterproof, weather resistant membrane with excellent permeability and ultra-violet protection. Specifically formulated to be a less viscous than the Butyl Flashing Grade 321.	Metal, Mod Bit, Single-Ply, BUR	Yes*
BUTYL FLASHING-GRADE 321	A single component vapor barrier elastomer seam sealer specially formulated to provide a waterproof, weather resistant membrane with excellent permeability and ultra-violet protection. Specifically formulated to be thicker than the 320.	Metal, Mod Bit, Single-Ply, BUR	Yes*
SILICONE PRODUCTS			
SILICONE 410	A single component, elastomeric air-dry silicone rubber coating designed for top coating many types of roof substrates.	SPF, Single-Ply, AWS Fabric Systems	Yes*
HIGH-SOLIDS SILICONE 412	Single component, 95% solids, elastomeric, waterproofing, moisture-curing coating.	SPF, Single-Ply, Mod Bit, BUR, AWS Fabric Systems	Yes*
SILICONE WALK PATH 415	Single-component, moisture curing, silicone rubber coating system designed to enhance the impact resistance and also provide a non-skid walking surface when used with Walk Path Granules 1100.	SPF, Single-Ply, Mod Bit, BUR, AWS Fabric Systems	Yes*
SILICONE BRUSH-GRADE 422	Ready-to-use, high solids, single component moisture cured silicone mastic designed for waterproofing penetrations, curbs, seams, and other flashings areas.	SPF, Single-Ply, Mod Bit, BUR, AWS Fabric Systems	Yes*

*When applied at appropriate thickness





**For more information, visit our website:
www.americanweatherstar.com**

