

# Excellence in Waterproofing, Roofing and Surfacing Technology



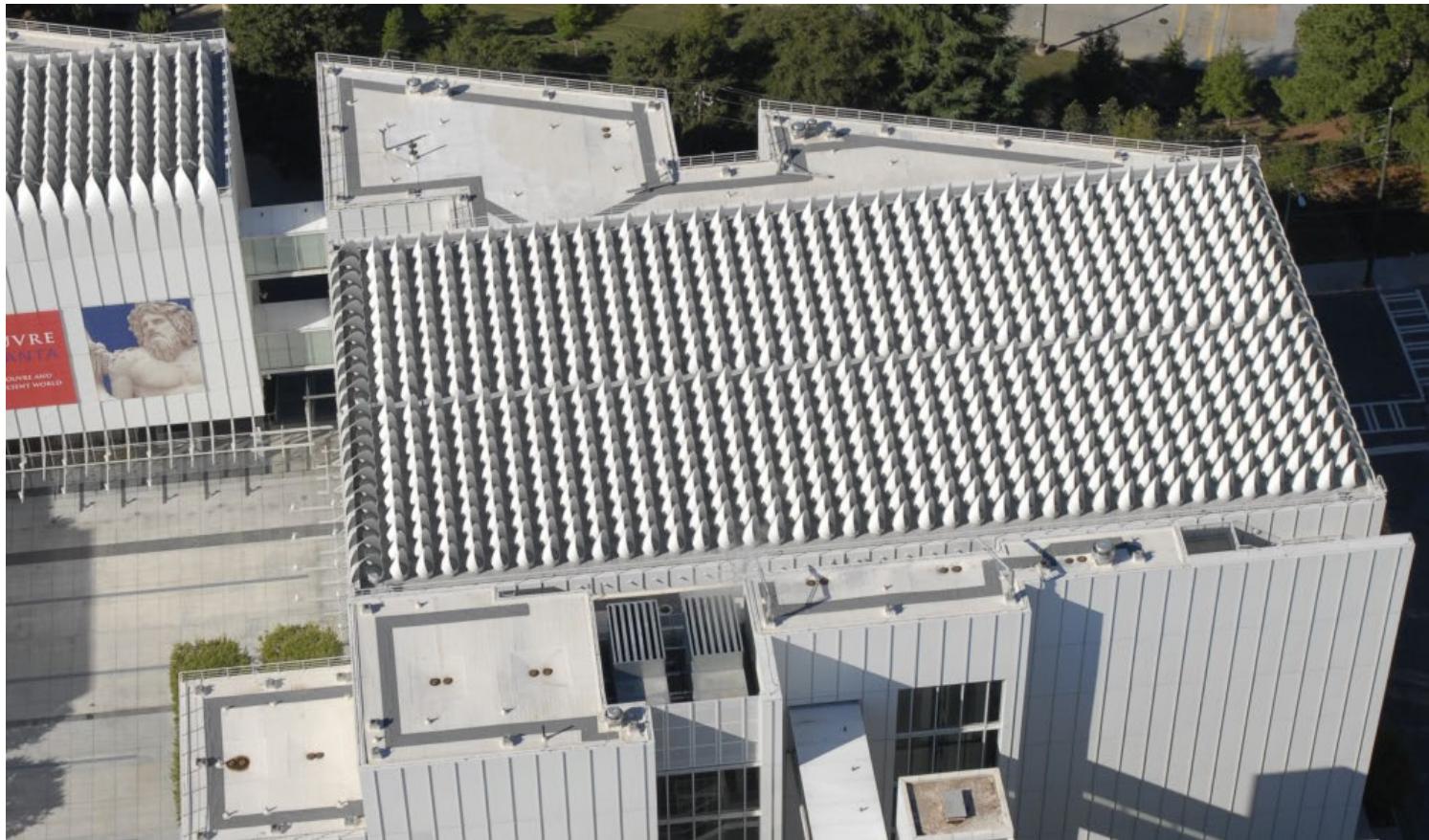
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# Fully Reinforced Cold-Fluid Applied Liquid Resin Waterproofing Systems





# History of Fully Reinforced Cold-Fluid-Applied Liquid Resin Membranes



- 1957** Dr. Heinz Kemper develops revolutionary waterproofing membrane.
- 1960** First commercial application takes place in Germany.
- 1967** Volkswagen factory roof, 3 million square feet

## Traditional Built-up and Modified Roof Systems

- Involve flame
- Involve fumes
- Involve mess





# Fully Reinforced Liquid Resin System



# Premium Products

These products belong to a family of **high-performance** waterproofing and roofing systems that are engineered, from the

substrate to the topcoat, to provide **built-to-last** solutions for most building conditions.

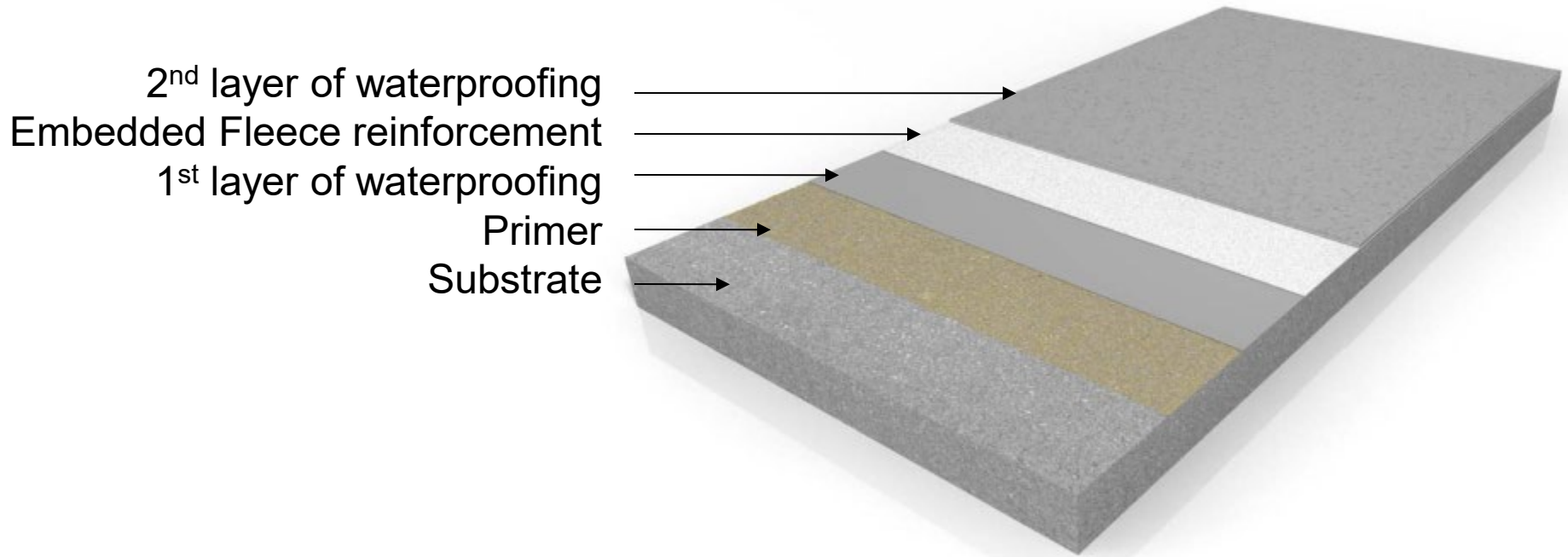




# APPLICATION PROCESS



# The Waterproofing System is Applied in **four** steps



1. Preparation and cleaning of the substrate
2. Application of primer suitable for substrate
3. Application of membrane
4. Application of surfacing (**optional**)



# SUBSTRATE PREPARATION

A nighttime photograph of a city skyline, featuring a prominent clock tower with a large clock face showing the time 10:10. The tower is illuminated, and other buildings are visible in the background.

## Acceptable Substrates

- Concrete
- Metal
- Wood
- Glass
- Rigid PVC/ABS
- Brick and Block
- Terra Cotta
- Stone
- Fiberglass
- Asphaltic Cap Sheets
- Cement Board
- Asphaltic Board
- Isocyanurate Insulation
- Treated Gypsum Board
- APP/SBS
- PVC/EPDM/TPO

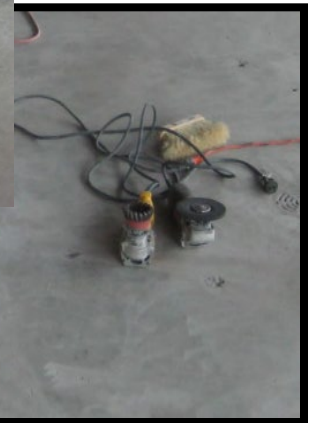


# Concrete Preparation

- Eliminate bond-breaking elements such as bonding agents and bituminous residue
- Eliminate weak laitance concrete surface layer
- Open up pores of concrete to allow primer penetration to occur

## Preparation Methods

- Scarification
- Sand/Shot Blasting
- Diamond Cup Grinding



## Preparation of Metal

- Eliminate bond-breaking elements such as rust, machine oil, paint, adhesive residue and bituminous residue
- Roughen up surface of metal to allow mechanical bonding of primer to occur

### Preparation Steps

1. Mechanically scrape
2. MEK/Acetone solvent wipe
3. Hand grinder



Wire brushing is **not** acceptable

## Wood Preparation



- Eliminate bond-breaking elements such as paint, adhesive residue and bituminous residue
- Apply Urethane sealant
- Place resin/fabric over joints





# PRIMERS



## Types of Primers

There are a variety of primers on the market

- Two-Component
- Single Component
- PMMA

# Priming



Primer is applied to prepared surfaces which also serves as a temporary waterproofing.



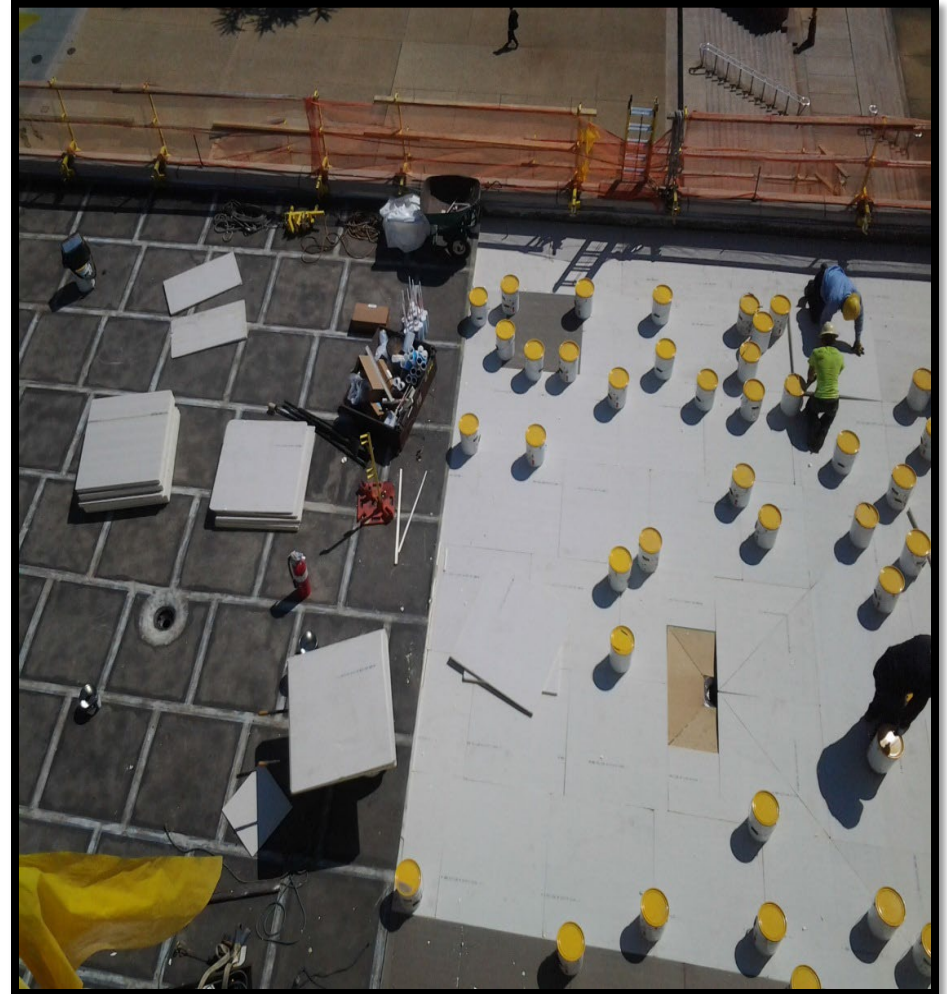
## Patching Procedure

Sand and resin are mixed together to create a patching slurry. Fast cure and NO additional manufacturers' warranties. Fast cure patching slurry.



## Primer Stripping-In Procedure

Primer and Reinforcement Strips are applied over all substrate cracks, joints in plywood decking, and joints in cover boards and insulation boards to create a monolithic substrate.



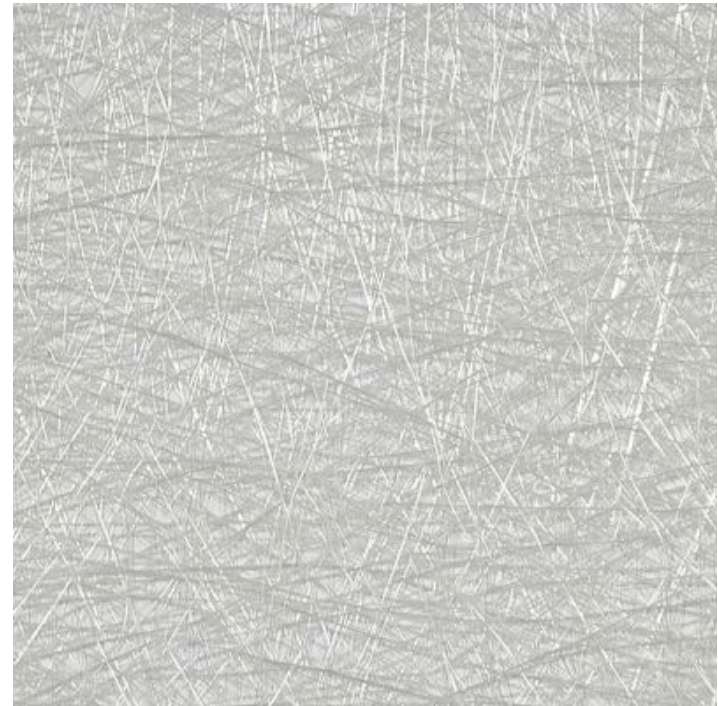
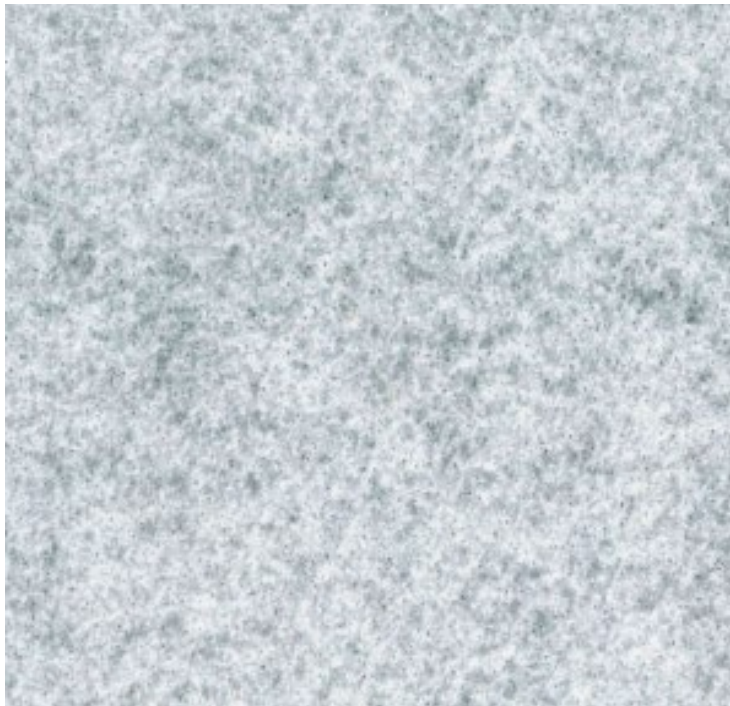


# MEMBRANES



# Types of Reinforcement

Fully reinforced needle punch fleece  
versus Random reinforcement



## Cutting the Fleece

All fleece cuts are made in the field to conform to any horizontal or vertical configuration.





## Cutting the Fleece



## Resin Mixing

Resin components come pre-measured and are always mixed in the field. Additives are available for hot and cold weather conditions. Various unit sizes are available.





# Resin Mixing

Odorless systems for indoor and outdoor applications are available.



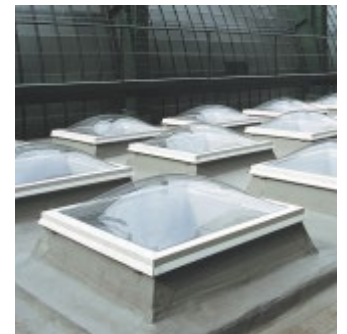
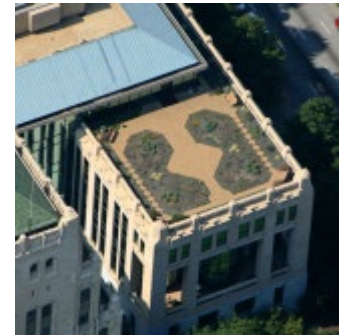
# Application of Liquid Resin and Fleece

The liquid resin and fleece are combined to make the membrane in the field



# Types of Resins

- **Polyester** – Original formulation. Has a lingering odor.
- **2K-Urethane** – Eco-friendly, odor-free, derived from plant-based oils, suitable for exterior and interior applications.
- **PMMA** – Very fast cure. Has a pronounced short-term odor.
- **2K-Urethane/Epoxy** – Solvent free interior waterproofing in tile and stone applications, requires no primer on most substrates.
- **1K-SMP** – Solvent free resin for interior and exterior applications. Can be used on damp surfaces / requires no primer on most substrates.
- **1K-Urethane** – No mixing. Requires multiple layer application. Has an odor.





# **SURFACING OPTIONS**



A photograph of a city skyline at night, featuring illuminated skyscrapers and a bridge. The image is positioned at the top of the slide, above the title.

# Surfacing Options

- **ROOF COATINGS**

- Reflective
- Aggregated
- Architectural

- **TRAFFIC SURFACINGS**

- Aggregated
- Smooth

- **“GREEN” ASSEMBLIES**

- Extensive
- Intensive

- **PAVEMENT**

- Cementitious concrete
- Asphalt concrete

- **TILE AND PAVERS**

- Thin-set
- Mortar bed
- Sand bed
- Sand/asphalt bed
- Pedestal supports
- Protected membrane

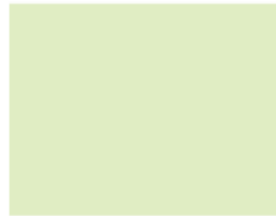
- **DECKING**

- Rubberized athletic surfacing
- Rubber play tiles
- Synthetic grass
- Wood planking on sleepers
- Wood panels on pedestals

# CRRC Cool Roof Colors / Compliance with Title 24

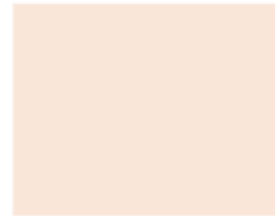
Smooth coatings  
are available for  
architectural  
appearance or  
Energy Star  
reflectivity

COOL MINT



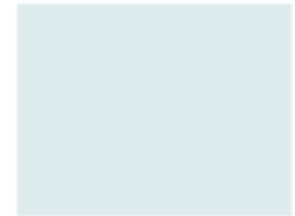
Reflectivity: 72.15%  
Emittance: .91  
SRI: 89

COOL ADOBE



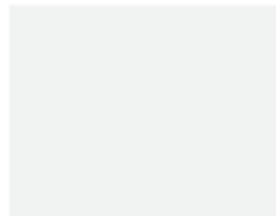
Reflectivity: 75.83%  
Emittance: .89  
SRI: 94

COOL FROST



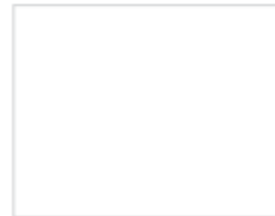
Reflectivity: 71.03%  
Emittance: .88  
SRI: 87

COOL STEEL



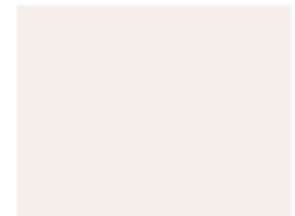
Reflectivity: 68.13%  
Emittance: .89  
SRI: 83

COOL WHITE



Reflectivity: 74.74%  
Emittance: .84  
SRI: 91

COOL EARTH



Reflectivity: 70.63%  
Emittance: .90  
SRI: 87

# Surfacing Application

Aggregated surfacings are available for pedestrian and vehicular traffic.

DARK GRANITE



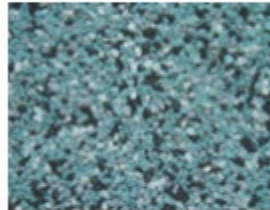
DARK SANDSTONE



HICKORY



LIGHT GRANITE



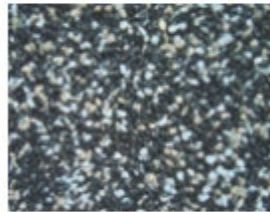
LIGHT SANDSTONE



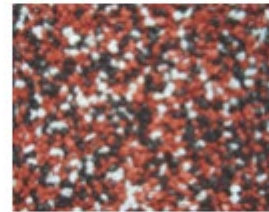
LIMESTONE



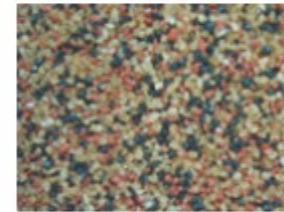
NIGHT SHADE



RED BRICK



TERRA COTTA



WALNUT



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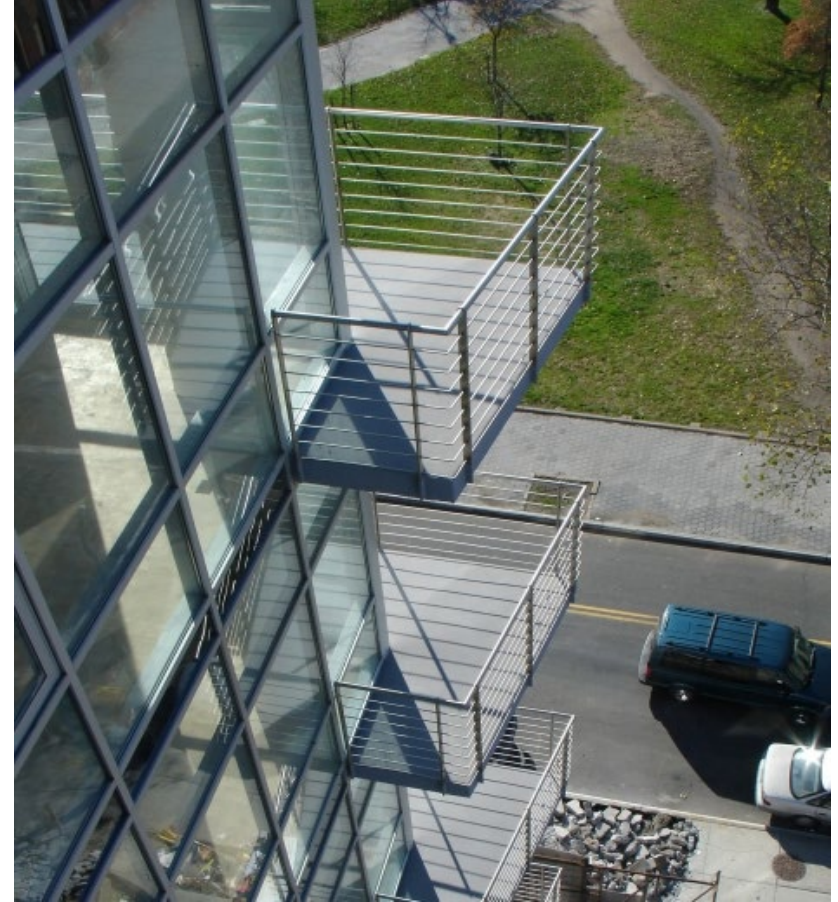
A nighttime photograph of a city skyline, featuring a prominent clock tower on the left and various illuminated buildings. The image is partially obscured by a dark blue horizontal bar at the top.

## Surfacing Systems

- **Traffic Coating** – Mineral-filled odor-free urethane high-build aggregate-finish surfacing for vehicular and pedestrian traffic.
- **Floor coating** – Mineral-filled odor-free urethane high-build smooth-finish surfacing for vehicular and pedestrian traffic.
- **Quick Cure** - Mineral-filled PMMA high-build aggregate-finish surfacing for vehicular and pedestrian traffic.



## Surfacing Application on balconies



## Surfacing Application

A variety of adhered overburden materials can be applied to the membrane.





## Surfacing Application

A variety of non-adhered overburden materials can be placed over the membrane.





# PERFORMANCE BENEFITS



## Seamless Technology

**Reinforced liquid resin membrane** systems are fabricated in the field to fit all conditions. Seamless bonding of the membrane during application eliminates any possibility of fatigue at the bond line.



## Full Adhesion

**Reinforced liquid resin membrane** systems fully adhere to practically any structural surface,



## UV Resistant

Liquid Resin membranes are engineered to resist degradation due to **UV exposure** and **heat magnification**.





## Superior Flashing System

Due to its **exceptional bond strength**, Kemperol membranes form full closure to field surfaces, irregular flashings and penetrations of every shape or material.





## Adaptability

Liquid resin membranes are **reinforced** to easily accommodate future renovations, repairs, retrofits and maintenance, offering **easy bonding** from old to new applications and phasing of installations.



## Ponding Water and Ice

Reinforced Liquid Resin Membrane are **unaffected by standing water and ice conditions**. We offer a long-term warranty for its monolithic, seamless protection.





## Durability

Liquid resin membranes provide excellent durability under all phases of construction and heavy mechanical traffic. Conventional industry systems specifically prohibit pedestrian and mechanical use.



## Motorway Bridge of the River Mulde in Germany



Application of fully reinforced membrane (one layer – with 2" overlap)  
System provides long-term protection to the structure including  
expansion joints, flashings and penetrations. Hot mastic asphalt (>200  
44°C) applied directly on top of the membrane.



## Chemical and Petroleum Resistant

Reinforced Liquid Resin Membranes are **resistant to chemical degradation and most corrosives**, while conventional industry products break down when exposed to chemical or petroleum products.



## Rot and Root Resistant

Soil, vegetation or other biomatter will not affect the long-term performance of reinforced liquid resin membranes.





## Odor-free, Low VOC

The next generation of reinforced liquid resin membranes are **odor-free** with **low VOCs** for sensitive interior and exterior applications.



## Sustainable and Renewable

2K Urethane resin products containing **70 to 80%** natural rapidly renewable resources are available.





## Color and Finish

Liquid resin membranes offer **various resin color options and topcoats.**





# Standing Seam Copper Roof Recovery can now be achieved using a Patina colored Resin

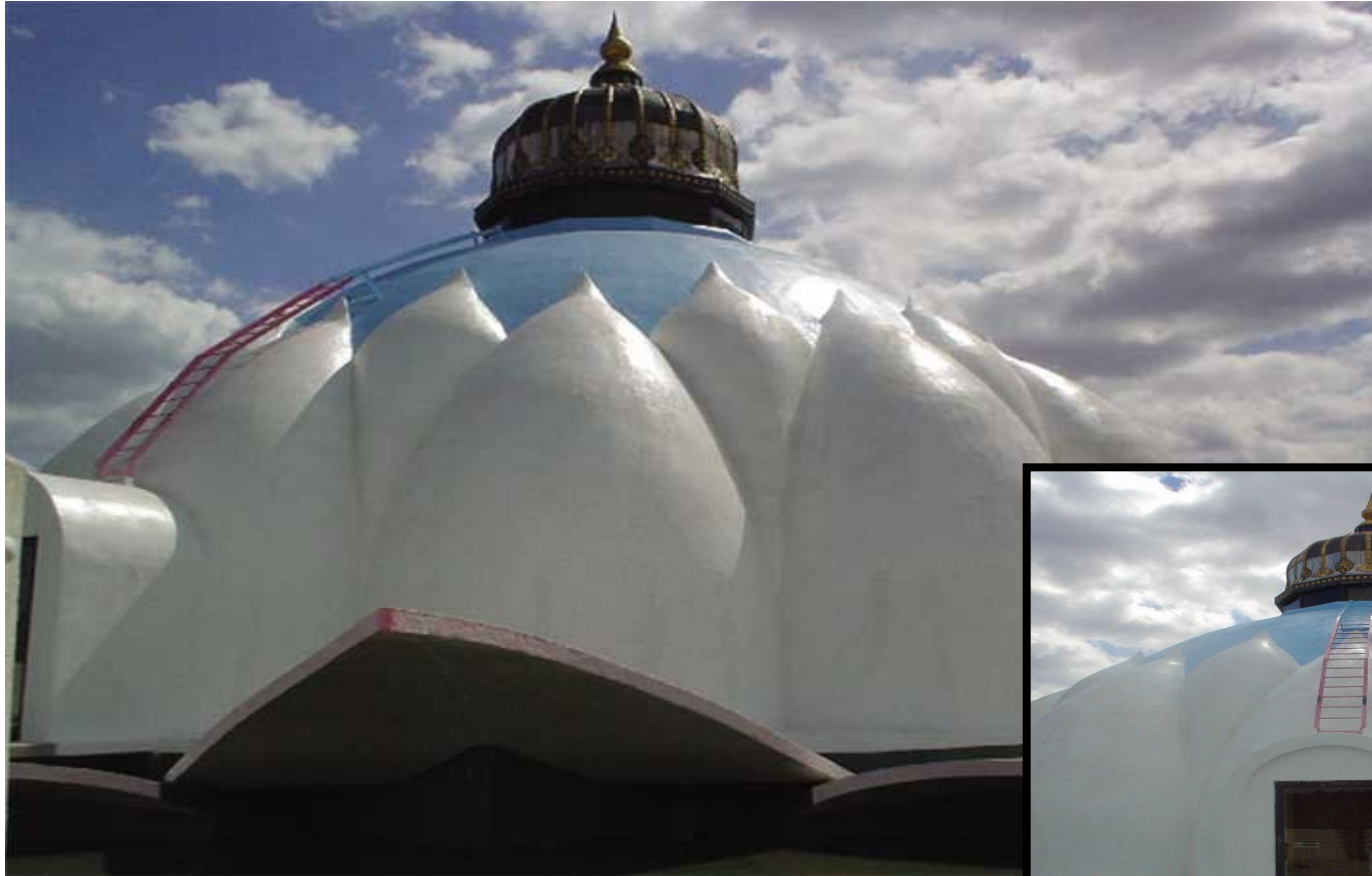




# Unlimited Design Options



# Unlimited Design Options





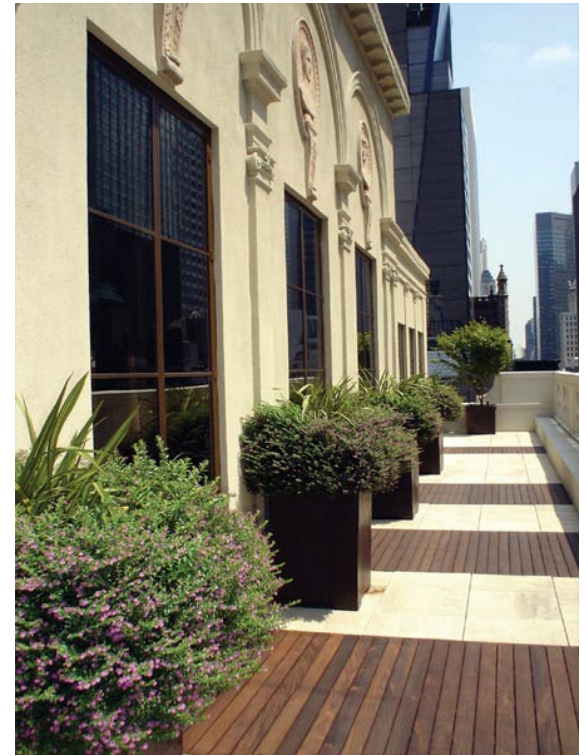


# **RANGE OF APPLICATIONS**

# Plaza Waterproofing



## Landscaped Roofing and Planters







## Roofing and Recovers



# Metal and Metal-seamed Roofs





## Roofing Over Insulation and Cover Board





## Historic Structures





## Gutter-ways and Valleys





## Balconies, Setbacks and Terraces





# Fountains



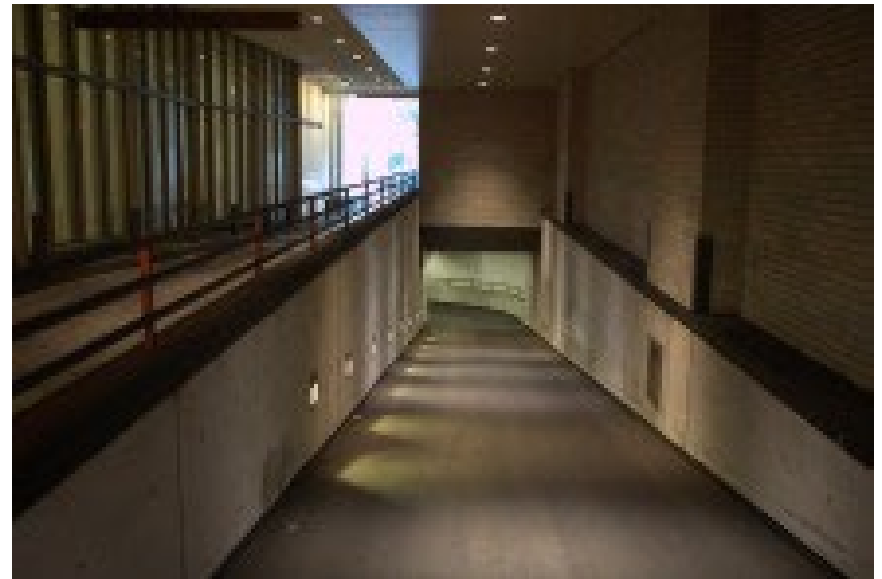


# Fountains



# Odorless Interior Surfacing Applications

Odorless waterproofing and surfacing systems for interior applications





# Odorless Industrial Interior Floor Coatings



# Same Day Waterproofing and Surfacing Applications



## Self-Flashing with no Pitch Pockets





## Self-Terminating on the I-Beam Posts

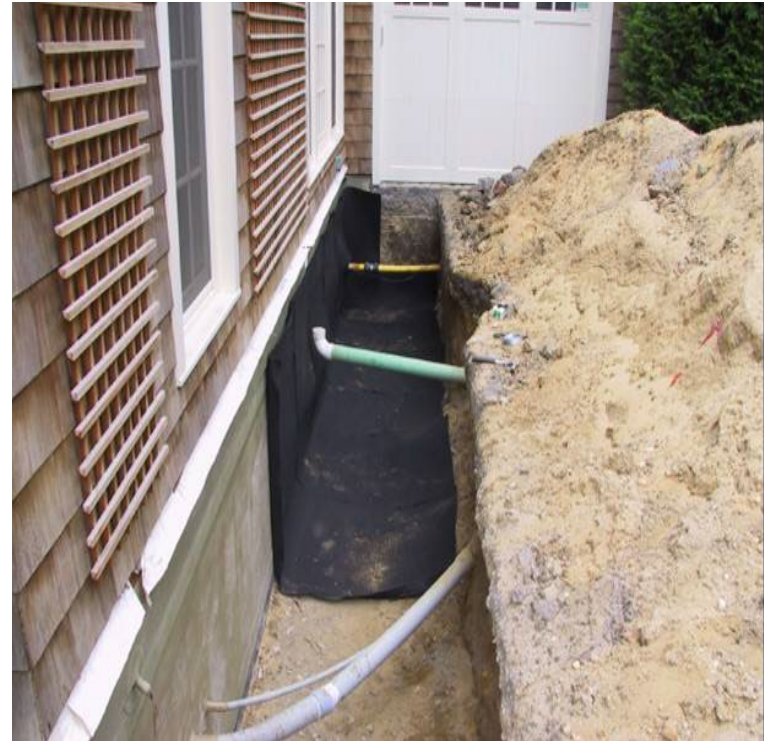


## Flashings over Modified Cap Sheet





## Below-Grade Applications





## Critical Below-Grade





# Your *most critical* Applications





**Thank you for your attention!**

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