


Polyurea Vs. Traditional Waterproofing Products

Polyurea for Vehicular Deck, Podium Deck and Water Features

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1

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2

AGENDA


3 Popular Waterproofing Applications

- Vehicular/Traffic Deck Coatings
- Podium Deck Coatings
- Waterfeature Coatings

Plural Component Machine Requirements

- Review each application
- Compare traditional systems to spray polyurea systems
- Understand the benefits that spray polyurea systems can bring to the contractors and project owners
- Review typical spray polyurea equipment requirements

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3

Vehicular/Traffic Deck Coatings


What is a Vehicular/Traffic Deck Coating

Over occupied space
Primer, waterproofing membrane, wear course with aggregate, topcoat

Over non-occupied space
Primer, topcoat or sometimes just sealer is used



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4

Vehicular/Traffic Deck Coatings

Traditional Systems (hand applied)

1K polyurethane (moisture cure)

- Primer, 1K polyurethane (15 mils), 1K polyurethane with aggregate (15 mils), 1K polyurethane topcoat (12 – 15 mils)

2K polyurethane (chemical cure)

- Primer, 2K polyurethane (15-20 mils), 2K polyurethane with aggregate (15-20 mils), 2K polyurethane topcoat (12 – 15 mils)

Others

- MMA, PMMA, Epoxy

Polyurea Systems (spray & hand applied)


Option 1

- Primer, spray polyurea (48 – 96 mils), slow set spray polyurea with aggregate (20 – 32 mils), 2K polyurethane, polyurea or polyaspartic topcoat (12 – 16 mils)

Option 2

- Primer, spray polyurea (48 – 96 mils), 2K polyurethane with aggregate (20 – 24 mils), 2K polyurethane, polyurea or polyaspartic topcoat (12 – 16 mils)

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5

Vehicular/Traffic Deck Coatings


Traditional Systems (hand applied)

- Up to 24-hour cure between layers (1K)
- 4 – 12-hour cure between layers (2K)
- Cure affected by temp
- Cure affected by moisture
- 60 – 72 mil systems (1K)
- 60 – 90 mil systems (2K)
- Reinforcement required at transitions
- Lower physical property materials
- 5-year material warranties
- Large crews (10 man +)

Polyurea Systems (spray & hand applied)

- Instant set times with spray polyurea
- Allows for wear course to be applied same day
- Cure of polyurea less sensitive to temp
- Cure of polyurea less sensitive to moisture
- High build application of polyurea (waterproofing)
- 120+ mil systems
- Improved physical properties with spray polyurea
- Improved chemical resistance & durability using polyaspartic topcoats
- Longer warranty options for client
- Smaller crews (5 – 6 man)

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6

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7

Podium Deck Coatings

What is a Podium Deck
 A **podium deck** is a structural element that is an elevated platform or one that has a void underneath it. It may have supporting columns that do not pass through this structural element

- Plaza Decks
- Green/Garden Roofs

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8

Podium Deck Coatings

<p>Traditional Products/Systems</p> <ul style="list-style-type: none"> • Hot Rubber <ul style="list-style-type: none"> • 90 mils, fabric, 90 mils • Cold Liquid Applied <ul style="list-style-type: none"> • Primer, 90 mils + in multiple passes • Sheet Goods 	<p>Polyurea Systems</p> <ul style="list-style-type: none"> • Primer, 80 + mils of polyurea
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9

Podium Deck Coatings

Traditional Systems (hand applied)

- Hot kettle 350° - 400° F (hot rubber)
- Smell!!! (hot rubber)
- Fabric (hot rubber)
- Protection board (hot rubber)
- Large crews (10 man – 1500 to 2500 sqft day)
- Neoprene at transitions (hot rubber)
- Extended cure times (cold cure)
- Moisture & Temp affects cure (cold cure & hot rubber)
- Lower physical properties (hot rubber, cold cure & sheet goods)
- Multiple passes required for vertical build
- No ponding water (hot rubber) – requires drain board

Polyurea Systems

- Speed of application
- Return to service – speeds up critical path
- Smaller crews (5 man – 5,000 to 10,000 sqft day)
- Vertical applications in one pass
- No protection board required
- No reinforcing sheet required
- Unlimited UV exposure
- No noxious odors
- Can withstand ponding water
- Allow other trades back on projects & more creative scheduling of trades

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10



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**76,000 sqft Guardian-PD™ -
 Downtown Palm Springs**

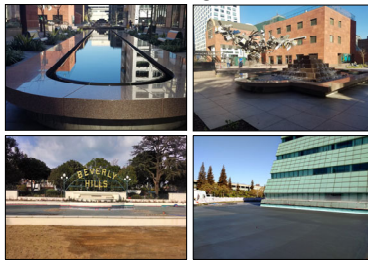


11

Water Feature Coatings

Water Features

- Fountains
- Reflective ponds
- Water parks
- Pools
- Amusement parks
- Koi ponds



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12

Water Feature Coatings

Traditional Products

- Epoxies
 - Thin and thick film builds
- Elastomeric Polyurethanes
 - Thin and thick film builds
- Vinyl and plastic liners

Polyurea Systems

- Primer, 80 + mils of polyurea, optional topcoats (for color retention and chemical resistance)

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13

Water Feature Coatings

Traditional Systems (hand applied)

- Moisture & Temp affects cure (epoxy & polyurethane)
- Brittle (epoxy)
 - Low impact resistance
 - Crack easily with concrete movement
- Multiple passes required for vertical build
- Extended cure times between layers

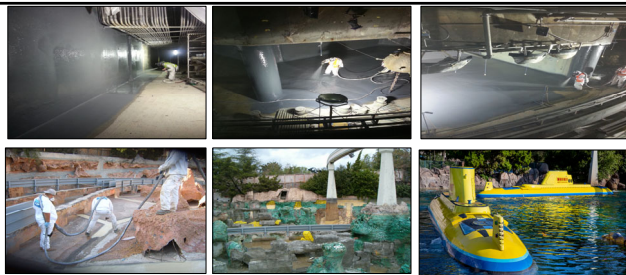
Polyurea Systems

- Speed of application
- Return to service – can fill with water in a few hours or less
- Vertical applications in one pass
- No noxious odors

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14



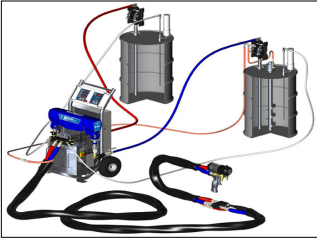
6.3 mm gallon water feature
 Guardian-WT™ - Amusement Park in SoCal

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15

Spray Equipment Requirements



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16

Spray Equipment Requirements

Pressure Capabilities

- Typical maximum ranges from 2,000 to 3,500 psi / 15 to 25 MPa
- Must be able to meet polyurea manufacturer's recommended settings
- Must be able to compensate for pressure loss due to extended hose lengths

Material Output

- Typical ranges from:
6 lbs. to 45 lbs. / 2.5 kg to 20 kg per minute
.7 gals. to 5 gals. / 2.5 L to 19 L per minute
- Determines the scale of work that can be completed in a set amount of time
- Smaller pumps for smaller jobs

High Pressure Spray Guns

- Typical output flow rates of 0.1 to 4.5 gpm / .4 to 17 Lpm
- Pressure ranges between 1,500 to 3,500 psi / 10 to 20 MPa
- Variable spray patterns that are round or fan.
- Air purge and mechanical purge guns available

Note: Gun output should be < 75% of Proportioner capacity

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17



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18



19