ChemMasters

SPECIALTY CONSTRUCTION PRODUCTS

CHEMDECK

CEMENTITIOUS RESURFACING SYSTEM FOR HORIZONTAL CONCRETE

P R O D U C T D A T A

DESCRIPTION

ChemDeck is a water resistant, traffic grade resurfacing system for horizontal concrete. The proprietary components of each unit consist of a specially formulated cement-aggregate blend, a flexible polymer liquid and fade resistant, water based tint. For surfaces with dynamic or wide cracks, the use of DryDeck Membrane with scrim as a base for ChemDeck is adivisable.

USES

- Interior or exterior, horizontal concrete surfaces
- Resurfacing driveways, walkways or parking lots damaged by deicing chemicals and salts; repairs rain damaged or frozen concrete surfaces
- Surfaces open to pneumatic tire vehicles as well as pedestrian traffic
- Restore the appearance of patios, balconies, courtyards, swimming pool decks, theme park walks, sports stadiums
- Prevents further deterioration of reinforcing steel by reducing water and chloride ion absorption

ADVANTAGES

- Economical alternative to costly rip outs or toppings to repair damaged surfaces; restores fresh poured appearance
- Excellent moisture vapor transmission for enhanced resistance to blistering, chipping, peeling
- Prevents scaling from harsh freeze/thaw cycles and deicing chemicals
- Superior flexural and tensile characteristics coupled with exceptional abrasion resistance for a durable finish
- Extremely low V.O.C. content, water based for environmental impact compliance
- When placed over DryDeck Membrane with scrim, bridges moving cracks up to 0.125 inch/3.175 mm
- Available in five standard colorfast shades, resistant to fading and discoloration from ultraviolet light exposure
- Architectural colors available subject to minimum quantities and a minimum 14 day delivery schedule

TECHNICAL DATA

Application Temperature	50°-90°F	10°-32°C

Drying Time	ChemDeck	4-6 hours
	Polyseal WB	8 hours
	Pedestrian Traffic	8 hours
	Pneumatic Tire Traffic	3 days

Standard Colors: Light Concrete Gray, French Gray, Brick Red, Buff and White

Results based on 28 day air cure	psi	MPa
Compressive Strength (ASTM C-109)	5200	35.85
Tensile Strength (ASTM C-190)	715	4.9
Flexural Strength (ASTM C-348)	1650	11.4
Shear Bond Adhesion (ASTM C-882)	560	3.9

Impact Resistance (MIL-D-313) No cracking or delamination
2 lb./1.8 Kg steel ball dropped from 8 Ft./2.4M height onto coated steel panel

Water Permeability (ASTM E-96) 1.98 perms/in

Scaling Resistance (ASTM C-672) 50 cycles 0% loss

Absorption Rate of Water <2%
Weight gain by 4 in./10.1 cm coated concrete cube after 21 days water immersion

ESTIMATING GUIDE

		Ft.^{2}/unit	M^2/unit
ChemDeck	mortar coat	300-400	7-10
	primer coat	400-450	10-11
	topcoat coat	400-450	10-11
	optional spatter coat	400-600	10-14
Polyseal WB	first coat	200-300	5-7
	second coat	400-500	10-12

The spatter coat is optional for decorative affect or heavy traffic areas such as turning areas or ramps in parking structures.

When dry, ChemDeck surfaces must be sealed using Polyseal WB with matching tint to protect the ChemDeck resurfacing system and provide dirt repellency.

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Packaging

Standard unit sizes:

ChemDeck			
Powder	2 bag	50 lbs each	22.7 Kg ea.
Liquid Latex	1 pail	5 gals	18.7 L
Tint	1 can	1 qt.	1.9 L
Polyseal WB	1 pail	5 gals	18.7 L
Optional Tint	1 can	0.5 gal	1.9 L

Color matched tint packs for Polyseal WB must be ordered separately. Yield per pail of tinted sealer is 5.5 gal/21.8 L.

Recommended Equipment

For successful mixing and application and to obtain optimum finish textures, the following tools and equipment are required.

Mixing:

—Clean, dry minimum 5 gallon/ 18.7 liter mixing container or pail, large batches may be mixed in a paddle type mortar mixer
—Graduated liquid measuring container
—Low RPM mechanical drill equipped with a jiffler type mixing prop

Application:

—Spiked shoes or cleats
—Concrete finish trowel
—Wide blade, $^1/_8$ inch notched squeegee with long handle
—Paint roller with medium napped cover
—Clean concrete finish broom or asphalt coater brush
—Hand-held hopper sprayer for smaller projects available from Goldblatt or Bon Tool companies
—Pneumatic sprayer for large projects available from Chem-Grout

Directions

Cover and/or mask concrete and masonry adjoining or abutting area to be coated with ChemDeck to protect from drips and spills. Any drops or spots must be cleaned immediately to prevent adhesion. If allowed to dry, mechanical removal is required. ChemDeck is not harmful to landscape plants or grass but will adhere to greenery until rinsed.

ChemDeck's drying and curing characteristics are affected by ambient and surface temperature, direct sunlight, relative humidity and wind velocity. Surface and ambient temperature must be a minimum of 50°F./10°C. during application and through the drying cycle. Do not apply ChemDeck during rainy weather or if rain is expected before material dries. Never allow ChemDeck treated surface to freeze until dry.

During hot weather, 90°F./32°C. or more, store ChemDeck components in a cool area, less than 70°F./21°C. Tightly closed containers of ChemDeck Latex may be set in cold water to lower temperature. Prewet surfaces to be coated with water to lower temperature but do not apply ChemDeck over puddles or standing water.

ChemDeck dries in 4-6 hours at 70°F./21°C. Low relative humidity, a brisk breeze or high winds shorten drying time of ChemDeck. Temperatures in excess of 90°F./32°C. can cause ChemDeck to flash set or dry too rapidly. For best results during hot weather, apply ChemDeck in early morning or late evening when temperatures are at their coolest.

Surface Preparation: All surfaces to be coated with ChemDeck must be thoroughly clean and free of oil, grease, dirt, dust, loose or spalled concrete or mortar, curing and sealing compounds, paints, silicone based sealers or other contaminants which prevent proper adhesion.

Acid etching or mechanical abrasion is recommended to open pores of concrete and achieve a $^1/_{16}$ inch/1.6 mm profile. Severely spalled or aged concrete may not require this step. Consult your ChemMasters' distributor or salesperson for an evaluation of your specific project.

Mixing: **Proper mixing is critical. Read all directions prior to beginning.** Consult ChemMasters' Technical Service staff with questions or for recommendations in special situations.

Mix Ratios	Water	ChemDeck Liquid	ChemDeck Powder
Mortar	2 qts./1.9L	2 qts./1.9L	40 lbs./18 Kg
Primer		2.5 gal./9.5L	50 lbs./22.7Kg
Topcoat		2 gal./7.6L	50 lbs./22.7Kg

Pour entire contents of ChemDeck Tint into the pail of ChemDeck Liquid and blend until a uniform color is achieved. Use the tinted ChemDeck Liquid when mixing all coats of ChemDeck for optimum depth of shade and uniformity of color.

Always add the powder to the liquid in the ratios listed above. Using a mechanical drill and mixing prop, blend for 1-2 minutes until mixture is uniform in color, smooth and free of lumps. ChemDeck initially has a grainy appearance but as the mix becomes properly blended, the texture becomes creamy.

ChemDeck has a working time of 30 minutes at 70°F./21°C. with 50% humidity or less. Warmer temperatures and higher humidity reduce pot life. Material placed in direct sunlight on warm days dries more rapidly than in shaded areas. Do not mix more material than can be placed within the working time. Do not retemper.

Place material immediately after mixing. Dispose of any material that takes initial set prior to application. Rinse impeller blade and application tools in water immediately after each use to prevent build up of hardened material.

Saturate concrete surfaces to the point of rejection with clean, potable water then allow surface to dry to damp prior to applying ChemDeck. Remove any puddles or standing water. Surface must remain damp during application procedure, redampen if necessary, do not allow to dry.

Repairs: Prior to resurfacing, repair any nonmoving cracks, voids or surface defects over $^1/_{16}$ inch/1.6 mm in width or depth up to a maximum of 2 inches in width and depth with ChemDeck mixed to a mortar consistency.

Fill voids, cracks and deep spalls, compacting mortar to remove any air pockets and insure adequate adhesion to substrate. Finish with a light broom texture. Do not apply any curing compounds or sealers to mortar. Under extremely hot, dry or windy conditions, cover repaired area with wet burlap or towelling until mortar achieves initial set.

Primer: The primer coat is thin and insures proper bond to the substrate. Prime entire surface area after cracks and voids have been repaired and mortar has taken final set. Stir mixed material occasionally during application process to insure proper aggregate distribution.

Using a clean brush or broom, scrub initial coat into prepared surface at a rate of 450-500 $Ft.^2$/11-12 M^2 per unit creating a nominal 20-25 wet mil thick coating. Proper adhesion of this base coat is critical.

Allow primer coat to dry completely. ChemDeck is ready to be recoated when you can walk on primed surface and not mar or scuff finish.

For optimum performance and appearance it is important to maintain recommended coverage rates. Thin coats of ChemDeck produce the best results. Thicker application causes mud cracking and possible reduction in bonding capabilities.

TOPCOAT: Mix Topcoat at the recommended ratio of liquid to powder using a drill and mixing prop as outlined previously.

Apply topcoat at a rate of 400-450 $Ft.^2$/10-11 M^2 to entire area then texture with a medium nap roller, brush or sponge float as desired. Alternately, the topcoat can be finished to a smooth texture and a spatter coat applied to create a slip resistant texture.

If area is subject to heavy or abrasive vehicular traffic or if additional wear resistance is required or if a heavier texture is desired, apply an additional topcoat of ChemDeck. A final coat may be sprayed or spattered with a hopper gun to produce a rough texture or trowelled to create decorative swirl patterns.

TEXTURING: For best results when a textured finish is desired, apply the topcoat with a wide squeegee, fresno trowel or steel trowel. Finish to a very smooth appearance.

OPTIONAL SPATTER COAT: Spatter the final coat with a hopper gun covering 60-70% of the surface. Allow spatter coat to dry for 5-10 minutes. Wearing spiked shoes to prevent dislodging the freshly placed ChemDeck, trowel surface in a half-moon or other desired pattern. Trowel in one direction only, do not use back and forth motions.

DECORATIVE FINISHES: ChemDeck may be used to create a decorative appearance of brick or stone on plain concrete using templates or tape. Primer coat and first topcoat may be tinted to represent mortar joints. Allow these initial coats to dry before fastening template to surface as recommended by template manufacturer or applying masking tape to simulate mortar joints.

Apply an additional topcoat of ChemDeck in the color required for the brick or stone work and finish as desired. For a more pronounced profile, additional coats of ChemDeck may be applied at the normal application rate. Do not apply at thicknesses greater than those recommended. Build up in thin coats to avoid mud or map cracking.

Allow ChemDeck to dry thoroughly before removing tape or template to avoid marring the surface then seal with clear Polyseal WB at recommended coverage rates.

SEALING: Allow ChemDeck to dry over night before applying tinted Polyseal WB. Roll, brush or spray sealer at 200-300 $Ft.^2$ per gallon/5-7 M^2 per liter for first coat and allow to dry to tack free. Finally, apply second coat of Polyseal WB at right angles to first at a rate of 400-500 $Ft.^2$ per gallon/10-12 M^2 per liter.

Following sealer application, allow full deck system to cure thoroughly before opening area to traffic, 8 hours for pedestrians, 3 days for pneumatic tire vehicles.

CLEANUP

Clean tools and equipment with soap and water before ChemDeck or Polyseal WB dries and hardens. If materials dry and harden, mechanical removal is required.

LIMITATIONS

- Do not apply at ambient or surface temperatures below 50°F/10°C or above 90°F/32°C.
- ChemDeck is not designed to bridge dynamic cracks. Crack movement from thermal cycling or structural stress can cause reflective cracks through the ChemDeck overlay. The use of DryDeck Membrane with scrim is recommended in these situations. Consult DryDeck Membrane technical data sheet for coverage rates and installation techniques.
- Maintain control, construction and expansion joints through coating. If desired, fill control and construction joints with flexible, exterior grade, urethane sealant after ChemDeck has dried and cured.
- When applying ChemDeck to horizontal surfaces abutting vertical surfaces and/or walls, caulk interface joint between horizontal and vertical surface following coating application. Follow caulking manufacturer's installation recommendations.
- Do not apply to frozen or frost covered surfaces or if rain or snow are expected before system has dried
- Concrete substrates must be prewet and kept damp during application but do not apply ChemDeck over puddles or free standing water

- Do not apply any single coat of ChemDeck at a thickness greater than 25-30 mils, greater depths cause mud or map cracking and can effect bonding characteristics.
- Snowplows with heavy metal blades may damage the ChemDeck coating. It is advisable to keep blade from direct contact with the coating

Storage

Cover and store ChemDeck powder bags on pallets in dry area. Store tightly sealed containers of ChemDeck liquid, Polyseal WB Tint and Polyseal WB at 40°-90°F/ 4°-32°C. Do not allow to freeze. Shelf life of all system components is one year from date of manufacture.

Caution

May cause eye or skin irritation. Read and understand Material Safety Data Sheets (MSDS) prior to using system components.

This Product is Formulated and Labeled for Industrial and Commercial Use Only

FOR BEST RESULTS AND SAFEST USAGE, USER IS SPECIFICALLY DIRECTED TO CONSULT THE CURRENT MATERIAL SAFETY DATA SHEET AND PACKAGE LABEL FOR THIS PRODUCT