Product Information

BD CLASSIC 3100 — *100% Epoxy Floor Coating*

Description

BDC 3100 is a two component, 100% solids, high-build, low viscosity, low odor, cyclo-aliphatic, chemical resistant epoxy. This highly versatile epoxy coating comes in clear and a variety of pigmented colors.

Uses

BDC 3100 epoxy is used to create industrial seamless floors in manufacturing plants, mechanical rooms, warehouses, commercial kitchens, and residential garages. In combination with color quartz or paint chips it can be used to create a decorative floor coating. BDC 3100 epoxy (with aggregate) can also be used as a mortar for overlays or repairs for concrete. 3100 clear is an excellent high build concrete sealer for interior use over many other types of coatings such Texture Crete or over acid stained floors. 3100 can be applied directly to the concrete without a special primer.

Advantages

- **Low Viscosity**
- **Meets USDA criteria**
- **100% Solids**
- **Chemical Resistant**
- **High Strength**
- **Water Clear or Pigmented**
- **Durable yet Flexible**
- **Low Odor**
- **High-Build**
- **Superior Adhesion**

Coverage

Coverage will vary depending on condition of surface and desired thickness.

As a Primer:

300-400 sf per gallon after thinning 10% with acetone.

As a Coating:

100-300 sf per gallon

For Epoxy Mortar:

1 gallon of epoxy mixed with 5 gallons of sand will yield approximately 3 to 4 gallons of mortar.

Packaging

1 1/2 gallon kits

15 gallon kits

Colors

Clear, Travatan, Cape Cod Grey, Deep Tan, Pewtor Grey, White, Black and Tile Red

Inspection

Concrete must be clean, dry, and free of grease, paint, oil, dust, curing agents, or any foreign material that will prevent proper adhesion. The concrete should be at least 2500 psi and feel like 30-grit sandpaper. The concrete should be porous and be able to absorb water. A minimum of 28 days cured is required on all concrete. Relative humidity in the concrete floor slab should be below 80% (per ASTM F-2170).

Before starting flooring work, test existing concrete slab to make sure there is no efflorescence or high levels of alkalinity.

Alkalinity refers to a high pH reading which means the floor is not neutral. A high alkaline environment can cause salts to creep up through the cement called efflorescence. These salts have a tendency to prevent or destroy the bonding of coatings to the concrete. The most common form of testing is the use of a wide-range pH paper or tape. Make sure the floors pH reading ranges between 5-9 to ensure adhesion. The testing of concrete for alkalinity can show the amount of alkalinity only at the time the test is ran, and cannot be used to predict long-term conditions.

Calcium chloride tests should be conducted to determine if the concrete is sufficiently dry for an epoxy flooring installation. The calcium chloride tests should be conducted in accordance with the latest edition of ASTM F 1869, *Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.* When running a calcium chloride test, it is important to remove any grease, oil, curing agents, etc. so accurate readings can be obtained. A rate of 4.5lbs/1000 ft²/24hr period or less is an acceptable amount of vapor pressure for an epoxy flooring installation. If the reading ranges from 4.5lbs to 15lbs, a moisture barrier system such as our BDC Vapor Seal can be installed to reduce the emissions.

Failing to adhere to these strict guidelines can result in product delamination, discoloration, blistering, or all together failure of the coating system. Testing is the responsibility of the applicator. B.D. Classic bears no responsibility for failures due to any of the above conditions.

Surface Preparation

Over Concrete Surfaces: Shotblasting is the preferred method for preparing the concrete. In some cases you may prepare by acid etching, floor scrubbing with a nylogrit brush and waterblasting to achieve a clean and uniform surface that feels like 50 grit sandpaper. If acid etching is done, be sure to properly etch and then adequately neutralize by scrubbing and rinsing several times followed by power washing. Prepare the surface so that the product will soak in and properly bond.

Over existing Epoxy: Sand the surface with a floor buffer and 50 grit sand paper, remove debris and wipe with denatured alcohol just before new application.

Mixing

As a Coating: Premix each component separately. Mix 2 parts A with 1 part B, by volume, into a clean container. Mix thoroughly with a low speed (400-600 rpm) drill motor for 3-4 minutes. Make sure to scrap the sides and bottom of the container during mixing. The product may be thinned with acetone in which case it must be applied thinly enough to allow solvent to escape (minimum 300 sf per gallon). After mixing is completed, remove from container within 5 minutes as epoxy will begin to generate heat. Spread immediately onto the floor, as product is spread out you will have longer working time (10-15 minutes at 70 degrees).

For an Epoxy Mortar: Mix 2 to 5 parts of a washed and kiln dried aggregate, by volume, to 1 part of mixed BDC 3100 and mix until uniform in consistency.

Application

Primer: Prime the surface using BDC 1200 (Read individual product information sheet). The 3100 may also be used as a

primer when thinned 10% with acetone. Primer coat should be applied thinly and worked into the surface to help seal avoid pin holes.
As a Coating: Apply BDC 3100 within 24 hours after the primer coat. Immediately after mixing, spread a strip of the batch onto the surface along the edges where it will be "cut in" using a brush. Pour the remaining material near the "cut in" area and spread evenly using a trowel or squeegee and back roll using a 1/4" nap non-shedding roller. A notched trowel or squeegee will help regulate the thickness and a porcupine roller will help to release trapped air and minimize bubbles. Depending on the look, thickness, chemical and abrasion resistance desired, 1 to 2 coats may be applied. A non-skid surface can be achieved by broadcasting and/or back rolling a washed and kiln dried aggregate into the coating.

For an epoxy mortar: Prime the area with a neat (no sand added) batch of BDC 1200, 11 series or 14 series primer. Within 24 hours, apply the prepared mortar using a trowel.

Limitations

- **Do not apply at temperatures below 50˚F or above 95˚F.**
- **After mixing completely (3-4 minutes remove from mixing container an apply to floor)**
- **Do not apply over concrete with Moisture Vapor Emissions above 4.5lbs/1000 ft²/24hr period**
- **For interior use only unless protected by an UV resistant coating.**
- **Concrete must be cured for a minimum of 28 days.**
- **Solvents added to thin such as acetone will make product combustible or flammable in which case be aware of sparks or open flame.**
- **If solvent is added, the products must be applied thinly to allow the solvent to escape or proper curing will to occur.**

Clean Up

Uncured material can be removed with a solvent. Cured material can only be removed mechanically.

Technical Data for Clear

Viscosity (ASTM-D-445-83, Brookfield, RVTD, Sprindle 4)	**1030 cps**
Gel time (Techne GT-4 Gelation Timer)	**55 (150 mass/min)**
Tensile Strength (ASTM-D-638-86)	**7,250 psi**
Tensile Modulus	**385,000 psi**
Tensile Elongation (ASTM-D-638-86)	**5.5 %**
Heat Deflection at 264 psi (ASTM-D-648) *	**47 C**
Shore D Hardness (ASTM-D-2240-86) *	**81**
Abrasion Resistance @ 1000 cycles Wt. Loss (gms)	**0.0041**
Mar Resistance (ASTM-D-5178-91)	**1.30 kg**
Pencil Hardness	**2H**
Impact, inches-lbs Direct/Reverse	**14/1**
Glass Transition Temperature (ASTM-D-3418-82)	**124 F**
Color (ASTM-D-1544-80)	**>1 Gardner**
Thin Film Set Times at 70 F (BK Drying Recorder)	**6 hrs.**
Flexural Strength (ASTM-D-790-88)	**12,185psi**
Flexural Modulus	**445,00 psi**
Cross Hatch Adhesion (0-Worst, 5-Best)	**4**
Compressive Strength @ yield (ASTM 695-85)	**11,550psi**
Compressive Modulus (ASTM 695-85)	**370,000 psi**
Glass Transition	**46C**
Chemical Composition	**Modified Bisphenol A epoxy resin crosslinked with aliphatic and cycloaliphatic polyamines**
VOC	**0 g/l**

***Properties determined after 7 days cure at 25 C°**

REAGENT	Initial Hard.	After 3 hrs		After 24 hrs		After 3 days		After 7 days		After 28 days		After90 days	
		% wt.	Hard	% wt.	Hard	% wt.	Hard	% wt.	hard	% wt.	hard	% wt.	Hard
10% Acetic Acid	82	0.7	80	2.1	72	4.01	69	6.13	62	10.15	63	15.4	46
10% Lactic Acid	82	0.38	80	1.19	79	2.31	78	3.48	77	5.71	74	8.78	59
Toluene	82	0.06	80	0.81	75	3.07	65	6.89	52	20.3	46	18.32	52
Xylene	82	0.01	78	0.04	77	0.36	75	1.29	70	4.65	72	15.39	57
Trichlorothane	82	0.05	77	0.4	77	2.31	74	3.54	68	13.74	65	-	-
Methanol	82	3.13	66	8.37	38	12.83	25	6.23	30	5.71	35	-	-
Ethanol	82	0.99	75	2.89	63	5.55	46	8.55	45	9.34	43	6.81	52
Butyl Cellosoive	82	0.37	76	1.47	73	3.83	66	6.34	63	12.42	53	-	-
Methyl Ethyl Ketone	82	6.41	63					DESTROYED					
Skydrol	82	0.11	77	0.46	77	1.26	74	2.18	74	3.67	75	6.03	56
70% Sulfuric Acid	82	0.22	83	0.11	82	0.15	81	0.21	81	0.16	81	-0.16	81
98% Sulfuric Acid	82	-15.6	80					DESTROYED					
Deionized Water	82	0.07	82	0.31	81	0.54	82	93	82	1.65	80	2.14	80
50% Sodium Hydroxide	82	0.06	82	-0.05	82	-0.04	82	-0.03	83	-0.06	83	-0.1	63
Bleach	82	0.09	83	0.28	83	0.52	83	0.83	82	1.28	81	1.67	72