



CastorCrete® TG

PRODUCT DESCRIPTION AND USE

CastorCrete TG is a trowel-applied cementitious polyurethane mortar installed at 1/4 inch (6.35 mm) to 3/8 inch (9.5 mm) to protect concrete from extreme physical and chemical abuse. It is very resistant to impact and abrasion, and stands up to steel wheeled cart traffic. It is unaffected by hot cooking oils, animal fats and most solvents. CastorCrete TG has been formulated to compensate for the difference in the co-efficient of thermal expansion of concrete. The concrete must be “keyed” to maintain adhesion during cure, stress during use and especial when subjected to post cure thermal shock of freezing or hot water or steam cleaning. It can be used at constant service temperatures up to 250°F (121°C). CastorCrete TG can be purchased with an anti-microbial additive to inhibit the growth of fungi and other micro-organisms.

CastorCrete TG is a quick turnaround flooring solution for businesses that must minimize down time. It is usually installed as a one-step system without a primer can be returned to service 12 hours (Fast Cure) to 24 hours (Regular Cure) after installation. (CastorCrete TG is available in two formulations, regular and fast cure.) The regular cure provides more work time than the fast cure material and makes the installation much easier at temperatures over 70°F (21°C). CastorCrete TG may be top coated with CastorCrete TC a cementitious polyurethane top coat to create uniformity of appearance. CastorCrete TG is an environmentally friendly product. It contains no VOC, has very little odor and is made with natural sustainable raw materials. See CastorCrete System Data Sheets if an impervious abrasion resistant Polyurea 5100 or Polyaspartic 7500 or an imperious chemical resistance Epoxy 600 or Epoxy 900 is required. Note: Cure time will be dependent of the top coats full cure.

Because of its unique combination of performance properties, CastorCrete TG has become the polymer flooring of choice for the demanding service conditions found in food and beverage processing, commercial kitchens, chemical processing, pulp and paper plants, wastewater treatment facilities and other demanding environments.

Chemical Composition

Aromatic polyurethane cement

Colors

8 standard colors available

Coverage per kit is as follows:

Floor Thickness

1/4 inch (6.35 mm)

3/8 inch (9.5 mm)

1/2 inch (12.7 mm)

Coverage Per 66 lbs. (29.9 kg) Kit

25 square feet (2.3 square meters)

19 square feet (1.76 square meters)

12.5 square feet (1.16 square meters)

WARRANTY INFORMATION

Arizona Polymer Flooring guarantees that this product is free from manufacturing defects and complies with our published specifications. In the event that the buyer proves that the goods received do not conform to these specifications or were defectively manufactured, the buyer's remedies shall be limited to either the return of the goods and repayment of the purchase price or replacement of the defective material at the option of the seller. ARIZONA POLYMER FLOORING MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, AND ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. Arizona Polymer Flooring shall not be liable for damages caused by application of its products over concrete with excessive moisture vapor transmission or alkalinity. Arizona Polymer Flooring shall not be liable for any injury incurred in a slip and fall accident. Manufacturer or seller shall not be liable for prospective profits or consequential damages resulting from the use of this product.

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Limitations

- Material will amber when exposed to UV light.
- Do not apply material in direct sunlight.
- Do not apply when temperatures are below 45°F (7°C) or above 90°F (32°C).

Moisture Vapor Emissions/Alkalinity Precautions

All interior concrete floors not poured over an effective moisture vapor retarder meeting ASTM E 1745 Standard Specification for Plastic Water Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs and ACI 302.2R Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials are subject to possible excessive moisture vapor transmission (above 10 lbs.) and excessive relative humidity (above 85%) that may lead to blistering and failure of the coating system. It is the cementitious polyurethane mortar applicator's responsibility to conduct either or both ASTM F 1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride or ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes to determine if excessive levels of moisture are present before applying any polyurethane cement mortars. Arizona Polymer Flooring and its sales agents will not be responsible for cementitious polyurethane mortar failures due to undetected excessive moisture vapor emissions or excessive relative humidity. Consult APF for information on moisture remediation products.

TECHNICAL DATA

Typical Physical Properties @ 70°F (21°C)		
Tensile Strength	ASTM C307	1,400 psi
Ultimate Compressive Strength	ASTM C579	8,500 psi
Ultimate Flexural Strength	ASTM C580	2,700 psi
Hardness, Shore D	ASTM D2240	75 – 80 (depends on top coat)
Adhesion to Concrete	ASTM D7234	400 psi (concrete failure)
Water Absorption	ASTM C413	< 0.1 %
Thermal Compatibility with Concrete	ASTM C884	Passes
Coefficient of Thermal Expansion	ASTM C513	1.1 X10 ⁻⁵ minimum
Flammability when Bonded to Concrete	ASTM D635	Self-Extinguishing
Abrasion Resistance	ASTM C501	32 mg
Microbial (Fungi) Resistance	ASTM G21	Passes #1
Coefficient of Friction, Static Wet	ANSI/NFS B101.1	Meets ADA Flat & Ramp
Coefficient of Friction, Dynamic Wet	ANSI/NFS B101.3	Meets ADA Flat & Ramp

Typical Cure Properties @ 70°F (21°C)		
Working Time, Regular Cure 70°F (21°C)	One 66 lb. (29.9 kg) Kit	15 minutes
Working Time, Fast Cure 70°F (21°C)	One 66 lb. (29.9 kg) Kit	7 minutes
Working Time is reduced by increasing temperature and/or mass.		
Regular Cure 70°F (21°C)		
Dry to Touch	12 hours	
Return to Service	24 to 36 hours	
Fast Cure 70°F (21°C)		
Dry to Touch	6 hours	
Return to Service	12 to 24 hours	

Chemical Resistance

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The chemical resistance of a polyurethane cement mortar material is influenced by many factors, including exposure to a mixture of chemicals, service temperature and housekeeping practices. Successful engineering of the polyurethane cement mortar must also take into consideration such factors as substrate design, temperature cycling and anticipated thermal and mechanical shock. Users are urged to consult our technical service department for recommendations on the specific project. Whenever possible, a sample should be tested under actual or simulated field conditions before a decision is made on the suitability of a given system.

The following chart is a guide to the resistance properties. Testing was conducted at room temperature 70°F (21°C) on samples cured for 7 days.

Chemical Resistance Key:

1. Suitable for continuous contact
2. Suitable for intermittent spills and continuous contact up to 72 hours
3. Suitable for intermittent spills if followed promptly by water flushing
4. Not recommended

* cementitious polyurethane mortar may stain when exposed to these chemicals

Acetic Acid, 15%	1	Calcium Sulfate	1	Methanol	2
Acetic Acid, 25%	2	Chloroform	1	Methylene Chloride	3
Acetic Acid, Glacial	3	Chromic Acid	*1	Methyl Ethyl Ketone	3
Acetone	4	Citric Acid, 50%	1	Nitric Acid, 15%	*1
Aluminum Chloride	1	Cola Syrup	1	Oleic Acid	1
Aluminum Nitrate	1	Copper Chloride	1	Phosphoric Acid, 85%	1
Aluminum Sulfate	1	Copper Nitrate	1	Potassium Chloride	1
Ammonium Hydroxide	1	Copper Sulfate	1	Potassium Cyanide	1
Ammonium Nitrate	1	Diesel Fuel	2	Potassium Hydroxide	1
Ammonium Sulfate	1	Ethyl Acetate	2	Potassium Nitrate	1
Aniline	3	Ethyl Alcohol	2	Potassium Sulfate	1
Barium Chloride	1	Formaldehyde	1	Skydrol	1
Barium Hydroxide	1	Formic Acid, 25%	1	Sodium Hydroxide, 50%	1
Barium Sulfide	1	Hydrobromic Acid, 48%	*1	Sodium Chloride	1
Beer	1	Hydrochloric Acid, 37%	*1	Sulfuric Acid, 50%	*1
Benzene	1	Hydrofluoric Acid, 25%	*2	Tetrahydrofuran	3
Brake Fluid	1	Hydrogen Peroxide, 30%	1	Toluene	3
Boric Acid	1	Lactic Acid, 50%	1	Trichlorethylene	3
N-Butyric Acid	3	Lactic Acid, 85%	2	Trichloroethane	2
Calcium Chloride	1	Jet Fuel	3	Urea	1
Calcium Hydroxide	1	Isopropyl Alcohol	1	Xylene	1
Calcium Nitrate	1	Maleic Acid, 40%	2		

GENERAL INFORMATION

Surface Preparation

Concrete surfaces must be clean, dry, and structurally sound.

- a. Mechanically abrade concrete substrate via shot blasting or scarification. Termination, transition, penetrations and other confined concrete surfaces must be diamond ground with a coarse #12 to #16 disk and meet the International Concrete Repair Institute ICRI Guideline No. 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers Coatings and Polymer Overlays CSP 3 to CSP 5.
- b. Keyways must be cut at 1/4 inch (6.35 mm) deep by 3/16 (4.8 mm) wide, 6 inch (15.2 cm) from all perimeter walls, machinery pedestals, and both sides of all control joints and at regular intervals spaced

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- 10 feet (3 meters) to 12 feet (3.7 meters) apart throughout the flooring system.
- c. All floor drains, penetrations, transitions and termination points must have a 1/4 inch (6.35 mm) deep by 1/4 inch (6.35 mm) wide keyway.
 - d. **Never feather edge CastorCrete TG, always turn it into a keyway.**
 - e. Priming of concrete substrates is not usually required under typical circumstances. However, due to variations in concrete quality, surface conditions, surface preparation and ambient conditions, reference test areas are recommended to determine whether priming is required to prevent the possibility of blisters, pinholes and other aesthetic variations.
 - f. If priming is required, use APF Epoxy 100 applied at the rate of 200 to 250 square feet (18.6 to 23.2 square meters) per gallon (3.79 liters). Proceed with CastorCrete TG when primed surface has become tack-free.

Mixing Instructions

Pour entire contents of parts A, B and C into mixing container and mix for 30 seconds, while mixing slowly add part D (aggregate) over a period of about 15 seconds. Once all of the components are incorporated, mix for an additional 30 seconds. Mixing should be done with a COLLOMIX CX 44 DUO Set with MKD 140 HF or a Kol type mixer or any other mixer designed to mix heavy mortars. Mixed material should be placed immediately. It is recommended that multiple mixing containers be used to insure an adequate supply of fresh material.

Application Recommendations

Under normal circumstances, CastorCrete TG is applied directly to the concrete without a primer. However, if the concrete is badly damaged or excessively porous, the use of APF Epoxy 100 as a primer can reduce outgassing, pinholes or blisters. A test area is recommended to determine if a primer should be used. For small areas, CastorCrete TG can be metered out and finished with a steel trowel. Once the mortar is raked with a cam-gauge rake to the desired thickness, use a finishing trowel to compact and smooth out the rake marks. As soon as the mortar is relatively closed, immediately roll the surface with a 3/8 inch (9.5 mm) nap roller to remove trowel marks and bring the resin to the top. When placing the cementitious polyurethane mortar it is very important to keep a wet edge between mixes, therefore each batch must be placed within working time of the prior one. Failure to do this could result in a visible tie-in line. Excessive troweling or rolling can bring more resin to the top and reduce slip resistance. For very wet areas, it is recommended that aluminum oxide be broadcast into the wet cementitious polyurethane mortar, aluminum oxide sieve size will vary with top coat selection. CastorCrete TG may be top coated with CastorCrete TC a cementitious polyurethane top coat to create uniformity of appearance.

See CastorCrete System Data Sheets if an impervious abrasion resistant Polyurea 5100 or Polyaspartic 7500 or an impervious chemical resistance Epoxy 600 or Epoxy 900 is required. Note: Cure time will be dependent of the top coats full cure.

Handling Precautions

Avoid contact with skin; wear protective gloves. Read Safety Data Sheet before using.

Slip and Fall Precautions

APF recommends coatings or surfacing systems meet ANSI (American National Standard Institute) and NFSI (National Floor Safety Institute) B101.3 Test Method for Measuring Wet DCOF (dynamic coefficient of friction) of Common Hard-Surface Floor Materials, a. incline surfaces >0.45; b. level surfaces >0.42. APF recommends the use of angular slip-resistant aggregate in all coatings or surfacing systems that may be exposed to wet, oily or greasy conditions. It is the contractor's and end user's responsibility to provide a coating or surfacing system that meets current safety standards. APF or its sales agents will not be responsible for injury incurred in a slip and fall accident.

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