



**Dudick inc.**

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**POLYMER CONCRETE 700  
NON-SHRINK CHLORINATED  
POLYESTER POLYMER  
CONCRETE FOR NITRIC ACID  
RESISTANCE**

**RECOMMENDED APPLICATIONS**

Polymer Concrete 700 is a three-component, chlorinated polyester polymer concrete used for the construction of chemical resistant floors, pads, curbing, trenches and sumps – especially for strong nitric acid (up to 50%). Polymer Concrete 700 is well suited for the construction of floors, pads, trenches, and other structures requiring resistance to strong acids, bleaches, alkali, and other corrosive chemicals.

In addition to field installations, Dudick Polymer Concrete 700 can be supplied in precast shapes. These include precast trench sections, sumps, pits, floor slabs, pump pads and other fabrications that are made to fit the exact dimensions of each specific project. Precast shapes are fabricated off site and delivered to job-site, ready to drop into place.

Construction joints in pre-cast pieces are quickly and easily seamed on site. These quick turnaround precast systems minimize downtime.

Dudick chlorinated polyester Polymer Concrete 700 is suitable for use in a variety of applications including:

- Truck unloading pads
- Chemical process flooring
- Pump pads and tank piers
- Precast trenches and sumps

**PHYSICAL PROPERTIES**

Tensile Strength ASTM C-307	1,900 PSI
Compressive Strength ASTM C-579	14,500 PSI
Shrinkage	<0.05% (varies with amount of filler used)
Coefficient of Expansion ASTM C-531	$13 \times 10^{-6}$ in./in. <sup>°F</sup>
Bond Strength of concrete ASTM D-7234	Greater than cohesive strength of concrete

**SPECIFICATIONS**

Polymer Concrete 700 is a three component, chlorinated polyester polymer concrete used for the construction of chemical resistant floors, pads, curbing, trenches and sumps.

**ESTIMATING QUANTITIES AND  
ORDER BILL OF MATERIAL**

<b>Polymer Concrete 700</b>	2.4 cu.ft. / unit
<b>S-10 Cleaning Solvent</b>	500 ft. <sup>2</sup> / gal.

Quantities shown are for estimating purposes only. Actual field usage may vary.

**APPLICATION INSTRUCTIONS**

**INSTALLATION INSTRUCTIONS**

Dudick Polymer Concrete 700 is furnished as premeasured units to assure proper field mixing. Forming, transportation and pouring techniques and the tools used are similar to those employed for

normal concrete work. Thus, the polymer concrete can be prepared and installed by skilled plant maintenance personnel or by local contractors.

Dudick can provide on-site training, under contract, for the installation of **Polymer Concrete 700**, and both our field and factory representatives will answer any questions from prospective users or on-site installers.

Since it is not possible to anticipate all the various conditions and situations that may occur in the field, the following surface preparation, mixing and installation instructions are provided as general guidelines.

**SURFACE PREPARATION**

**Concrete:** New concrete must be cured a minimum of 28 days. Concrete must be mechanically prepared to remove surface laitance. Oils, grease or other contaminant must be removed prior to surface preparation. Concrete must be free of curing compounds and form release agents. Surface texture should be similar to 40-60 grit sandpaper or the visual standard, CSP-5 from the International Concrete Repair Institute **with exposed pea gravel**. The prepared surface should have a minimum tensile strength of 250 PSI per ASTM D-4541.

All concrete substrates must be checked for moisture prior to product application using the Plastic Sheet Test, ASTM D-4263.

**APPLICATION SPECIFICATIONS**

Temperature of substrate must be between 50°F and 110° F.  
 Relative humidity must not exceed 90%.  
 Substrate temperature must be 5°F above the Dew Point.

**Polymer Concrete 700 is self-priming, but some applications may require Primer 27. Consult a Dudick representative.**

**PRIMER 27**

**PRIMER 27 MIX RATIO (BY VOLUME)**

<b>HARDENER AMOUNT/GALLON RESIN</b>		
<b>Hardener</b>	<b>Substrate Temp</b>	<b>Primer 27</b>
PH-1	50°F	4-5 oz.
PH-1	75°F	3-4 oz.
PH-1	90°F	2-3 oz.

The Pot Life of the mixed material will depend on the temperature. To avoid material waste, do not mix more than can be used according to the following table:

**PRIMER 27 POT LIFE**

<b>TEMPERATURE</b>	<b>POT LIFE</b>
50°F	60 min
75°F	45 min.
90°F	30 min.

Mix the pre-measured units of **Component A with Component B** for 1-2 minutes. Prime all concrete surfaces at 3-4 mils WFT using a brush, spray, or roller.

**SITE PREPARATION AND FORMS**

Forms may be constructed of wood or metal. They should be coated with a generous amount of automotive or floor paste wax to prevent adhesion to the polymer concrete after it has cured. Forms should be leak-proof since the polymer concrete will flow. If necessary, they can be sealed with putty or other non-hardening materials.

**MIXING**

Each Polymer Concrete 700 unit consists of:  
 (1) container of resin liquid  
 (1) container of the correct hardener  
 300 pounds of aggregate

Each unit when mixed will result in 2.4cu. ft. of Polymer Concrete 700.



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**First Batch:** As with normal concrete work, mixing and pouring should be a continuous process. When work is interrupted for any period of time (i.e. while moving to a new area, overnight, etc.) a "first batch" procedure must be followed to provide the "wetting out" of the mixer interior and prevent the formation of a dry batch. The "first batch" process should also be followed when beginning a new area to achieve the reduced viscosity required to "wet out" the concrete foundation and achieve self-priming action.

Add the premeasured hardener to the liquid and mix well for at least three minutes. Pour the mixed liquid into a concrete mixer (6 cu. ft. or less), turn it on, and allow this first batch to "wet out" the interior surface. Remove approximately 5% (10 lbs.) of aggregate from the amount provided for the first batch only and discard it. Add the remaining aggregate (approximately 290 lbs.) to the catalyzed resin in the concrete mixer, and mix two to three minutes, achieving a uniform consistency.

**Warning:** If the recommended amount of aggregate is not removed prior to mixing the first batch, a dry batch will occur.

**Additional batches:** After the first batch, additional batches should be mixed using the sequence and procedure described above, except that the full amount of the aggregate supplied for each unit will be used. For easy reference, the sequence is:

- 1) Mix the resin with the hardener for three minutes.
- 2) Pour the mixture into the cement mixer.

- 3) Add the full amount of the aggregate to the mixer while it is running.

### **INSTALLATION**

When the Polymer Concrete 700 liquid and aggregate have been thoroughly mixed, the entire batch should be placed within 20-30 minutes to avoid premature set-up.

Typical installations on high traffic floor slabs are placed at a nominal one-inch (1") thickness. For foot traffic or light duty areas, a one-half inch (1/2") minimum thickness is recommended.

Each single pour can be 2" to 4" in depth. For pours more than 4", up to 8", consult Dudick representative.

The Polymer Concrete 700 surface should be lightly floated or troweled to a smooth finish.

### **CURE TIME**

Cure time depends on the temperature of the substrate. Since these temperatures are likely to be lower than the room temperature, it should be checked with a surface thermometer.

Forms, shims and jacks can be removed and the equipment allowed to rest on the polymer concrete after approximately half of the full-cure cycle; equipment should not be placed in service until the polymer concrete is fully cured.

As a rule of thumb, allow minimum of two days for the polymer concrete to fully cure at a surface

temperature of 80°F, or more. Add one day of cure time for each 10°F temperature decrease below 80°F.

Temperature	Cure Time for In-Service Use
80°F	2 Days
70°F	3 Days
60°F	4 Days

## CLEANING

Thoroughly clean the cement mixer, wheelbarrows, buckets and other tools and equipment with xylene, MEK, or S-10 Cleaning Solvent.

Accidental spills and splashes can be cleaned up by using these same materials.

## SHIPPING

Refer to Material Safety Data Sheets.

## STORAGE

**Warning:** All Dudick products classified by DOT with either white, yellow or red labels, must not be mixed or stored together as an explosive reaction may occur.

All components should be stored in a cool, dry area away from open flames, sparks or other hazards. When properly stored, the shelf stability of **Polymer Concrete 700** is 90 days. Exposure to excessive heat may cause premature gelling and may reduce available working time (pot life).

## SAFETY

**M.S.D.S: Material Safety Data Sheets must always be read before using products.** Polymer Concrete 700 systems are intended for application by experienced professional personnel. Dudick Inc. can supply supervision to help determine that the surface has been properly prepared, the ingredients correctly mixed, and the materials

properly and safely applied.

If polymer concrete materials are to be applied by your own personnel or by a third party contractor, please be sure that they are aware of the following safety precautions:

- Exposure to resins and hardeners through direct skin contact and/or inhalation may cause severe dermatitis reactions in some people. Cleanliness of the skin and clothing is critical and must be of paramount concern.
- Fumes are flammable and heavier than air. Proper ventilation should be maintained to minimize breathing of concentrated fumes.
- Suitable respirators should be used during application.
- Safety glasses, gloves, and suitable protective clothing must be worn at all times during application.
- If contact with hardeners occurs, remove any clothing involved and flush the skin with flowing water. Discard the clothing. Do not attempt to wash and reuse it. Liquids can be removed with S-10 Cleaning Solvent, MEK, or lacquer thinner. **DO NOT USE ACETONE.**
- Keep open flames and sparks away from the area where materials are being mixed and applied.
- If a rash occurs, remove the individual from the work area and seek a physician's care for dermatitis.
- In case of eye contact, flush with water for at least 15 minutes and consult a physician.
- If swallowed, do not induce vomiting; call a physician immediately.

**NOTE:** Dudick, Inc. ("Dudick") warrants all goods of its manufacture to be as represented in its catalogs and that the manufacture of its products by its employees or sub-contractors shall



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be performed in a workmanlike manner. Dudick's sole obligation under this warranty shall be to replace any material which its examination shall disclose to be defective. Dudick makes no warranty concerning the suitability of its product for application to any surface, it being understood that the goods have been selected and the application ordered by the Purchaser. DUDICK, INC. MAKES NO WARRANTY, EXPRESS OR IMPLIED, THAT THE GOODS SHALL BE MERCHANTABILITY OR THAT THE GOODS ARE FIT FOR ANY PARTICULAR PURPOSE. THE WARRANTY OF REPAIR OR REPLACEMENT SET FORTH HEREIN IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES ARISING BY LAW OR OTHERWISE; AND DUDICK INC. SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOST PROFITS, DOWN TIME, DAMAGES TO PROPERTY OF THE PURCHASER OR OTHER PERSONS, OR DAMAGES FOR WHICH THE PURCHASER MAY BE LIABLE TO OTHER PERSONS, WHETHER OR NOT OCCASIONED BY DUDICK'S NEGLIGENCE. This warranty shall not be extended, altered or varied except by written instrument signed by Dudick and Purchaser.

08/24/20