



The Chemical Company

PRODUCT DATA

9 09 27 26 Portland Cement Plaster

# THOROSEAL® PLASTER MIX

Cementitious waterproof coating for concrete, brick, and masonry

### Description

Thoroseal® Plaster Mix is a cement-based, waterproof coating for concrete, brick, or block. It can be used to eliminate the look of mortar joints and textured by both spray and trowel application.

### Yield

See page 3 for chart.

### Packaging

80 lb (36 kg) polyethylene-lined bags

### Color

Standard gray

Custom colors are available on request in full batch (5,000 lbs or 2,268 kg) quantities only.

### Shelf Life

1 year when properly stored

### Storage

Transport and store in containers in a clean, dry area between 40° F and 100° F (4° and 38° C) protected from rain, dew, and humidity. Store Acryl 60® in similar conditions. Do not allow Acryl 60® to freeze.

### Where to Use

### Features

- High-performance properties
- Excellent adhesion to mineral substrates
- Water-vapor permeable
- Provides texture and color uniformity
- Wide variety of textured finishes possible
- Easy to apply by trowel or spray

### Benefits

- Fills, seals, and hides surface imperfections
- Produces lasting durability
- Allows substrate to breathe; protects against surface blisters
- Enhances structure's appearance
- Enhances design options
- Speeds jobsite production

### APPLICATION

- Residential and commercial buildings
- Water-treatment reservoirs, dams, tunnels, bridges

### LOCATION

- Vertical and overhead
- Above and below grade
- Interior and exterior

### SUBSTRATE

- Concrete and masonry

### How to Apply

#### Surface Preparation

1. Surface must be structurally sound and fully cured (28 days).
2. Clean and remove all dust, dirt, grease, oils, laitance, efflorescence, biological residue, existing paint or coatings, curing compounds, or any other contaminants that might affect the bond. A variety of methods can be used. If chemical cleaning agents are used, neutralize and wash down residues completely.
3. Masonry walls should be properly cured to full

load-bearing capacity and laid true. Joints should be tooled.

4. For cast-in-place or precast concrete, remove all form-release agents or curing compounds. High-pressure water (with or without abrasives) is recommended.

5. Properly prepared concrete will have an open texture similar to fine-grit sandpaper.

6. After forms have been stripped, cut all form tie wires to a minimum depth of 3/4" (19 mm). Saturate these areas with clean water, then use an appropriate repair mortar to patch flush with the surrounding area. Fill all honeycombed areas that are 3/8" (10 mm) or more in depth. Remove any concrete accessories that will extend above the finished surface plane with a mortar hoe, stone, or grinder. All minor planar irregularities should be corrected with a tight trowel coat of Thoroseal® Plaster Mix modified with Acryl 60®. For best results, both the scratch and brown coats should be modified with Acryl 60® (see Form No. 1019073)

7. Surface should always be pre-wet to a surface saturated-dry (SSD) condition, just prior to applying Thoroseal® Plaster Mix.

### BOND TEST



## Technical Data

### Composition

Thoroseal® Plaster Mix is a cement-based coating containing water-repellent additives.

### Test Data

Thoroseal® Plaster Mix mixed with Acryl 60® diluted with potable water at a 1 to 3 ratio at approximately 7 quarts (6.6 L) per 80 lb (36 kg) bag

PROPERTY	RESULTS	TEST METHODS
<b>Compressive strength</b> , psi (MPa) 28 day	4,000 (27.6)	ASTM C 109
<b>Tensile strength</b> , psi (MPa) 28 day	310 (2.2)	ASTM C 190
<b>Flexural strength</b> , psi (MPa) 28 day	900 (6.2)	ASTM C 348
<b>Tensile bond (adhesion)</b> , psi (MPa), at 1:1 ratio of Acryl 60® to water	288 (2.0)	Lab value
<b>Water absorption</b> , % 28 day submersion	3.38	ASTM C 67
<b>Freeze/thaw resistance</b> , after 300 cycles	No cracking or delamination	ASTM C 666, Method B
<b>Impact resistance</b> , in-lbs, at 1:1 ratio of Acryl 60® to water	26	Fed Spec TT-P-0035 Gardner tester
<b>Accelerated weathering</b> , Xenon Arc, 5,000 hrs	No cracking, loss of adhesion, or other defect	ASTM G 26
<b>Water-vapor permeance</b> , perms	21.89	ASTM E 96 21.89
<b>Surface burning characteristics</b>	Passed Class 1 flame spread = Nil Fire Propagation, passed Index, I = 0.2	BS 476: Part 7:1971 BS 476: Part 6:1981
<b>Coefficient of thermal expansion</b> , in/in°F (cm/cm/° C)	5.1 x 10 <sup>-6</sup> (9.2 x 10 <sup>-6</sup> )	ASTM C531
<b>Pot life</b> , min Initial set time Final set time	30 – 45 120 360	Lab Method Vicat Method Vicat Method
<b>CO<sub>2</sub> diffusion resistance</b>	at 1/8" (3 mm) is equivalent to 3/4" (19 mm) concrete	Lab Method

Test results are averages obtained under laboratory conditions at 70° F (21° C) and 50% rh. Reasonable variations can be expected.

### Yield

Yields given are for one 80 lb (36 kg) bag. One lb covers 1 ft<sup>2</sup> (0.093 m<sup>2</sup>) at a 1/8" (3 mm) thickness.

CURED THICKNESS IN (MM)	AREA COVERED		
	FT <sup>2</sup>	YD <sup>2</sup>	M <sup>2</sup>
1/32 (0.8)	288	32	26.81
1/16 (1.6)	144	16	13.4
1/8 (3)	72	8	6.7
1/4 (6)	36	4	3.3

Coverage may vary with texture and porosity of the substrate.

1. A bond test is recommended before full application of a base coat of Thoroseal® Plaster Mix.
2. Clean and prepare the substrate. Mix a small quantity of Thoroseal® Plaster Mix and Acryl 60® and apply to cleaned substrate. Allow to cure a minimum of 5 days. Attempt to remove with a hammer and chisel. If Thoroseal® Plaster Mix delaminates from substrate in large pieces, surface preparation was inadequate.

#### BASE COAT

1. Brush on a base coat of Thoroseal® Plaster Mix at a rate of 2 lbs/yd<sup>2</sup> (1.1 kg/m<sup>2</sup>) of dry powder or 1/16" (1.6 mm) cured thickness. Use Acryl 60® diluted with clean water in a 1 to 3 ratio.
2. If surface is hot or material starts to drag, dampen surface with clean water. Do not apply material to a hot surface. Cool surface with clean water first.
3. For interior applications, prime substrate with Thorobond®.

#### Mixing

##### TROWEL AND FLOAT FINISH

1. Using a solution of at least 1 part Acryl 60® diluted with 3 parts clean water, mechanically mix sufficient material to provide a consistency suitable for trowel application.
2. For an 80 lb (36 kg) bag of Thoroseal® Plaster Mix, use about 2 qts (1.9 L) of Acryl 60® diluted with 5 qts (4.7 L) of water.
3. Slow speed 1/2" power mixing drill is best; add the dry material to the liquid. Do not overwet or overmix.
4. Allow mixed material to soak for 20 minutes. Remix, adding a small amount of the mixing solution only if needed for workability.

##### SPRAYED FINISH

1. Mix approximately 2-1/2 qts (2.3 L) of Acryl 60®, 7-1/2 qts (7.1 L) of water and an 80 lb (36 kg) bag of Thoroseal® Plaster Mix to achieve a consistency suitable for a plasterer's spray gun.
2. Power mixing is best; in which case add the dry material to the liquid. Mix to a uniform, lump-free consistency. Do not overwet or overmix.
3. Allow mix to soak for 20 minutes. Remix adding a small amount of mixing solution if needed for workability.

#### EXTREME CONDITIONS

1. Under extreme hot, dry, windy conditions, or to improve adhesion or provide better flexural and tensile bond strengths, reduce the dilution ratio to 1 to 2 (1 part Acryl 60® to 2 parts water) or 1 to 1 (1 part Acryl 60® to 1 part water).
2. Keep powder protected from direct exposure to sunlight. Store in a cool, dry area if possible.
3. Chill the water and Acryl 60® and keep chilled. Cover hoses with wet burlap and spray the equipment with cold water frequently.

#### Application

##### TROWEL AND FLOAT FINISH

1. When the key coat of Thoroseal® has cured for 24 – 48 hours, apply a trowel coat of Thoroseal® Plaster Mix. Use a steel trowel to firmly press the material into all voids and to level it. When the surface is set so that it will not roll or lift, follow with a sponge float. The surface should be floated uniformly.
2. Alternatively, in order to prevent shadowing of struck or deep masonry joints and form marks, apply a light trowel coat of Thoroseal® Plaster Mix (modified with Acryl 60® diluted with water) over the entire surface to be treated. Allow this coat to cure at least 5 and up to 7 days before proceeding with the regular trowel and float finish described above. This light trowel coat may be substituted for the Thoroseal® base coat.
3. At 1/8" (3 mm) thickness applied to smooth

concrete, the trowel and float finish requires approximately 9 – 10 lbs/yd<sup>2</sup> (4.9 – 5.4 kg/m<sup>2</sup>) of Thoroseal® Plaster Mix dry powder. Coarse surfaces may require a slight coverage increase.

4. Sufficient material should be applied to thoroughly fill all voids and pores and level all uneven surfaces. Do not exceed 3/8" (10 mm) per lift.

#### TO SPRAYED-ON FINISH

1. Spray-apply an evenly distributed coat of Thoroseal® Plaster Mix. Keep the spray gun nozzle perpendicular to and at a uniform distance from the surface and move the spray wand with steady, even strokes. Do not angle the nozzle; this will cause material buildup.
2. Float or brush out the first coat to fill holes, pores, and imperfections before applying the second coat.
3. After material has set and air and water bubbles have broken, double back over the surface with 1 or more light spray applications to achieve a uniform texture.
4. Apply to natural breaks or pretaped boundaries. After these areas have cured, protect them from overspray to avoid texture variations.
5. At 1/8" (3 mm) thickness applied to smooth concrete, the spray-on finish requires approximately 8 – 9 lbs/yd<sup>2</sup> (4.3 – 4.9 kg/m<sup>2</sup>) of Thoroseal® Plaster Mix dry powder. Coarse surfaces may require a slight coverage increase.
6. Sufficient material should be applied to thoroughly fill all voids and pores and level all uneven surfaces. Do not exceed 3/8" (10 mm) per lift.
7. For additional details such as corner beads,

lath, or screeds, refer to ASTM C 926 Standard Specification for Application of Portland Cement-Based Plaster or the Guide to Plastering by the American Concrete Institute. Metal lath and certain metal accessories may not be suitable for below-grade or immersion-service conditions.

### Curing

1. Water mist curing is not necessary unless too rapid drying occurs as a result of very windy or hot conditions.
2. If pigmented material is used, do not cure until next morning. Follow with a mist spray of clean water; otherwise a color variation could result.
3. For immersion service, allow a full 7 day cure before direct contact with water.

### COLOR UNIFORMITY

1. Due to weather changes throughout the hydration or curing process, as well as variable substrate porosity, it may be difficult to achieve complete color uniformity of the cured plaster.
2. For best color uniformity, apply a top coat of Thorocoat®, ThoroSheen®, or ThoroLastic® (exterior only).
3. Thoro® Pigmented Sealer may be used as a misted fog-coat treatment.
4. Clear top coats of ThoroGlaze® can be used for added protection from staining, atmospheric pollutants, or particulates.

### SPRAY-EQUIPMENT RECOMMENDATIONS

1. Use a mechanical pump like Rotor-stator or diaphragm pumps to carry the materials to the spray wand.
2. Air atomizing hopper guns may be used for small volume placements.
3. Use only oil-free compressed air as measured by ASTM D 4285.
4. Clean up with soap and water.

### For Best Performance

- Do not apply when substrate or ambient temperature is below 40° F (4° C) or if temperatures are expected to fall below 40° F (4° C) within 24 hours.
- Do not apply in rain. Protect from rain until fully cured.
- Do not apply on water-saturated brick or natural stones if freezing conditions are expected before full cure.
- Do not use as a horizontal wearing surface.
- Do not apply over low-strength scratch and brown coats.
- Do not apply ThoroSeal® or ThoroSeal® Plaster Mix over moving cracks.
- Before specifying ThoroSeal® Plaster Mix for water-retaining structures, conduct tests to determine water quality. ThoroSeal® Plaster Mix is not intended for continuous contact with acid or sulfate-containing water. Very soft water will have an adverse effect on ThoroSeal® Plaster Mix.
- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

### Health and Safety

THORO® PLASTER MIX

### Caution

Thoro® Plaster Mix contains portland cement, silica, crystalline quartz, calcium hydroxide, anhydrite, iron oxide and calcium magnesium hydroxide.

### Risks

Product is alkaline on contact with water and may cause injury to skin or eyes. Ingestion or inhalation of dust may cause irritation. Contains free respirable quartz, which has been listed as a suspected human carcinogen by NTP and IARC. Repeated or prolonged overexposure to free respirable quartz may cause silicosis or other serious and delayed lung injury.

### Precautions

KEEP OUT OF THE REACH OF CHILDREN. Prevent contact with skin and eyes. Prevent inhalation of dust. DO NOT take internally. Use only with adequate ventilation. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable federal, state and local regulations.

### First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. SEEK IMMEDIATE MEDICAL ATTENTION. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

### Proposition 65

This product contains material listed by the state of California as known to cause cancer, birth defects, or other reproductive harm.

### VOC Content

0 lbs/gal or 0 g/L

**For medical emergencies only,  
call ChemTrec (1-800-424-9300).**

## BASF Construction Chemicals, LLC – Building Systems

889 Valley Park Drive  
Shakopee, MN, 55379

www.BuildingSystems.BASF.com

Customer Service 800-433-9517  
Technical Service 800-243-6739



LIMITED WARRANTY NOTICE Every reasonable effort is made to apply BASF exacting standards both in the manufacture of our products and in the information which we issue concerning these products and their use. We warrant our products to be of good quality and will replace or, at our election, refund the purchase price of any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. Therefore, except for such replacement or refund, BASF MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, RESPECTING ITS PRODUCTS, and BASF shall have no other liability with respect thereto. Any claim regarding product defect must be received in writing within one (1) year from the date of shipment. No claim will be considered without such written notice or after the specified time interval. User shall determine the suitability of the products for the intended use and assume all risks and liability in connection therewith. Any authorized change in the printed recommendations concerning the use of our products must bear the signature of the BASF Technical Manager.

This information and all further technical advice are based on BASF's present knowledge and experience. However, BASF assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third party intellectual property rights, especially patent rights. In particular, BASF disclaims all CONDITIONS AND WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY. BASF SHALL NOT BE RESPONSIBLE FOR CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES (INCLUDING LOSS OF PROFITS) OF ANY KIND. BASF reserves the right to make any changes according to technological progress or further developments. It is the customer's responsibility and obligation to carefully inspect and test any incoming goods. Performance of the product(s) described herein should be verified by testing and carried out only by qualified experts. It is the sole responsibility of the customer to carry out and arrange for any such testing. Reference to trade names used by other companies is neither a recommendation, nor an endorsement of any product and does not imply that similar products could not be used.

**For professional use only. Not for sale to or use by the general public.**

Form No. 1019908 9/07

Printed on recycled paper including 10% post-consumer fiber.

© 2007 BASF  
Printed in U.S.A.