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Portland Cement
Plaster

MasterSeal[®] 584

Cementitious waterproof coating for concrete, brick, and masonry

FORMERLY THOROSEAL[®] PLASTER MIX

PACKAGING

80 lb (36.3 kg) bags

YIELD

See chart of Page 3.

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 MasterEmaco[®] A 660 in similar conditions. Do not allow MasterEmaco A 660 to freeze.

SHELF LIFE

1 year when properly stored

VOC CONTENT

0 lbs/gal or 0 g/L

DESCRIPTION

MasterSeal 584 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

PRODUCT HIGHLIGHTS

- High-performance properties fill, seal, and hide surface imperfections
- Excellent adhesion to mineral substrates for lasting durability
- Water vapor permeable to allow substrate to breathe and protect against surface blisters
- Provides texture and color uniformity to enhance structure's appearance
- Wide variety of textured finishes to enhance design options
- Easy to apply by trowel or spray to speed jobsite production

APPLICATIONS

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

LOCATIONS

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

SUBSTRATES

- 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 MasterSeal 584 modified with MasterEmaco A 660. For best results, both the scratch and brown coats should be modified with MasterEmaco A 660.
7. Pre-wet surface to a saturated-dry (SSD) condition just prior to applying MasterSeal 584.

BOND TEST

A bond test is recommended before full application of a MasterSeal 584 base coat.

1. Plaster Mix.
2. Clean and prepare the substrate. Mix a small quantity of MasterSeal 584 and MasterEmaco A 660 and apply to cleaned substrate. Allow to cure a minimum of 5 days. Attempt to remove with a hammer and chisel. If MasterSeal 584 delaminates from substrate in large pieces, surface preparation was inadequate.

BASE COAT

1. Brush on a base coat of MasterSeal 584 at a rate of 2 lbs/yd² (1.1 kg/m²) of dry powder or 1/16" (1.6 mm) cured thickness. Use MasterEmaco A 660 diluted with clean water in a 1:3 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, above grade applications, prime substrate with MasterProtect® P 110.

MIXING

TROWEL AND FLOAT FINISH

1. Using a solution of at least 1 part MasterEmaco A 660 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 MasterSeal 584, use about 2 qts (1.9 L) of MasterEmaco A 660 diluted with 5 qts (4.7 L) 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 MasterEmaco A 660, 7 1/2 qts (7.1 L) of water and an 80 lb (36 kg) bag of MasterSeal 584 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 1:2 (1 part MasterEmaco A 660 to 2 parts water) or 1:1 (1 part MasterEmaco A 660 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 MasterEmaco A 660 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 MasterSeal 581 has cured for 24-48 hours, apply a trowel coat of MasterSeal 584. 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 MasterSeal 584 (modified with MasterEmaco A 660 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 MasterSeal 581 base coat.
3. At 1/8" (3 mm) thickness applied to smooth concrete, the trowel and float finish requires approximately 9-10 lbs/yd² (4.9 - 5.4 kg/m²) of MasterSeal 584 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 MasterSeal 584. 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 one or more light spray applications to achieve a uniform texture.

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Technical Data

Composition

MasterSeal® 584 is a cement-based coating containing water-repellent additives.

Test Data

MasterSeal® 584 mixed with MasterEmaco® A 660 diluted with potable water at a 1:3 ratio at approximately 7 quarts (6.6 L) per 80 lb (36 kg) bag

| PROPERTY | RESULTS | TEST METHODS |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------|
| Compressive Strength , psi (MPa) 28 day | 4,000 (27.6) | ASTM C 109 |
| Tensile Strength , psi (MPa) 28 day | 310 (2.2) | ASTM C 190 |
| Flexural Strength , psi (MPa) 28 day | 900 (6.2) | ASTM C 348 |
| Tensile Bond (Adhesion) , psi (MPa), at 1:1 ratio of MasterEmaco A 660 to water | 288 (2.0) | Lab value |
| Water Absorption , % 28 day submersion | 3.38 | ASTM C 67 |
| Freeze/Thaw Resistance , after 300 cycles | No cracking or delamination | ASTM C 666, Method B |
| Impact Resistance , in-lbs, at 1:1 ratio of MasterEmaco A 660 to water | 26 | Fed Spec TT-P-0035 Gardner tester |
| Accelerated Weathering , Xenon Arc, 5,000 hrs | No cracking, loss of adhesion, or other defect | ASTM G 26 |
| Water Vapor Permeance , perms | 21.89 | ASTM E 96 21.89 |
| Surface Burning Characteristics | Passed Class 1 flame spread = Nil Fire Propagation, passed Index, I = 0.2 | BS 476: Part 7:1971 BS 476: Part 6:1981 |
| Coefficient of Thermal Expansion , in/in°F (cm/cm/° C) | 5.1×10^{-6} (9.2×10^{-6}) | ASTM C531 |
| Pot Life , min Initial set time Final set time | 30 – 45 120 360 | Lab Method Vicat Method Vicat Method |
| C0: Diffusion Resistance | 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 ft² (0.093 m²) at a 1/8" (3 mm) thickness.

| CURED THICKNESS IN (MM) | AREA COVERED | | |
|----------------------------|-----------------|-----------------|----------------|
| | FT ² | YD ² | M ² |
| 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.

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/yd² (4.3-4.9 kg/m²) of MasterSeal 584 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 belowgrade or immersion-service conditions.

CURING

1. Water mist curing is not necessary unless 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 MasterProtect® HB 400, Thorosheen®, or MasterProtect® EL 750 (exterior only).
3. Clear top coats of Thoro® EA Sealer WB Hi-Gloss 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. Color Uniformity may fluctuate due to various water-to-cement ratios and ambient curing conditions
- Do not apply over low-strength scratch and brown coats.
- Do not apply MasterSeal® 581 or MasterSeal® 584 over moving cracks.
- Before specifying MasterSeal 584 for water-retaining structures, conduct tests to determine water quality. MasterSeal 584 is not intended for continuous contact with acid or sulfate-containing water. Very soft water will have an adverse effect on MasterSeal 584.
- 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 Master Builders Solutions personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

HEALTH, SAFETY AND ENVIRONMENTAL

Read, understand and follow all Material Safety Data Sheets and product label information for this product prior to use. The MSDS can be obtained by visiting www.master-builders-solutions.com/en-us, e-mailing your request to mbsbscst@mbcc-group.com or calling 1(800)433-9517. Use only as directed.

IN CASE OF EMERGENCY: Call CHEMTEL +1 (800) 255-3924 or if outside the US or Canada, +1 (813) 248-0585.

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