BUILDING TRUST

PRODUCT DATA SHEET

Sika Thoroseal®-584 P

(formerly MSeal 584)

Cementitious Waterproof Coating for Concrete, Brick, and Masonry

PRODUCT DESCRIPTION

Sika® Thoroseal®-584 P is a cement-based, waterproof coating for concrete, brick, or block. It can be used to eliminate the look of mortar joints, has a textured appearance, and can be applied by both trowel and spray application methods.

USES

Sika® Thoroseal®-584 P may only be used by experienced professionals.

- Interior and exterior applications
- Vertical and overhead applications
- Above and below grade locations (protection board required prior to backfill)
- Residential and commercial buildings
- Water treatment reservoirs, dams, tunnels, bridges

CHARACTERISTICS / ADVANTAGES

• High performance properties
• Excellent adhesion to well prepared concrete and masonry substrates
• Fills, seals and hides surface imperfections
• Produces lasting durability
• Water vapor permeable, allows substrate to breathe
• Provides texture and uniformity; enhances substrate appearance
• Wide variety of textured finishes possible
• Easy to apply by trowel, or spray to speed jobsite production

PRODUCT INFORMATION

Chemical Base	Sika® Thoroseal®-584 P is a cement-based coating containing proprietary water repellent additives.
Packaging	80 lb. (36 kg) polyethylene lined bags
Color	Standard Gray
Shelf Life	12 months from date of production if stored properly in original, unopened and undamaged, sealed packaging.
Storage Conditions	Transport and store in containers in clean, dry areas between 40 °F and 100 °F (4 °C and 38 °C), protected from rain, dew, and humidity. If bags become damp, discard in accordance with local regulations. Store Sika® Thoroseal® Acryl 60 modifying admixture in similar conditions. Do not allow Sika® Thoroseal® Acryl 60 to freeze. If allowed to freeze, discard in accordance with local regulations.

TECHNICAL INFORMATION

Substrate	Concrete and Masonry		
Impact Strength	28 in-lb (32 kg-cm) At 1:1 mix ratio of Sika® Thoroseal® Acryl 60 to water		(Federal Specification TT-P-0035) Gardner Tester
Compressive Strength	28 days At 1:3 mix ratio of Sika® Thoroseal® Acryl 60 to water	4,000 psi (27.6 MPa)	(ASTM C109) 70 °F (21 °C), 50% R.H.
Flexural Strength	28 days At 1:3 mix ratio of Sika® Thoroseal® Acryl 60 to water	900 psi (6.2. MPa)	(ASTM C348) 70 °F (21 °C), 50% R.H.
Tensile Strength	28 days At 1:3 mix ratio of Sika® Thoroseal® Acryl 60 to water	310 psi (2.2 MPa)	(ASTM C190) 70 °F (21 °C), 50% R.H.
Tensile Adhesion Strength	28 days At 1:3 mix ratio of Sika® Thoroseal® Acryl 60 to water	288 psi (2.0 MPa)	(Internal Method) 70 °F (21 °C), 50% R.H.
Coefficient of Thermal Expansion	28 days At 1:3 mix ratio of Sika® Thoroseal® Acryl 60 to water	5.1 x 10^{-6} in/in/°F (9.2 x 10^{-6} cm/cm/°C)	(ASTM C531)
Behavior after Artificial Weathering	28 days At 1:3 mix ratio of Sika® Thoroseal® Acryl 60 to water	No cracking; no loss of adhesion or other defect	(ASTM G26) Xenon Arc, 5,000 hours
Permeability to Water Vapor	28 days At 1:3 mix ratio of Sika® Thoroseal® Acryl 60 to water	21.89 Perms	(ASTM E96)
Carbonation Resistance	At 1/8" (3 mm) thickness Equivalent to 3/4" (19 mm) of concrete At 1:3 mix ratio of Sika® Thoroseal® Acryl 60 to water		(Internal Method)
Freeze-Thaw Stability	No cracking or delamination after 300 cycles At 1:3 mix ratio of Sika® Thoroseal® Acryl 60 to water		(ASTM C666, Procedure B)
Water Absorption	28 days (Submersion) At 1:3 mix ratio of Sika® Thoroseal® Acryl 60 to water. CMU.	3.38%	(ASTM C67)

APPLICATION INFORMATION

Mixing Ratio	For an 80 lb. (36 kg) bag of Sika® Thoroseal®-584 P, use 2-1/2 quarts (2.4 liters) of Sika® Thoroseal® Acryl 60 diluted with 7-1/2 quarts (7.1 liters) of clean, potable water. Use a mixture of at least 1 part Sika® Thoroseal® Acryl 60 diluted with 3 parts clean water for Trowel and Spray applications.

Coverage

Cured Thickness	Area Covered	Area Covered	Area Covered
1/32" (0.8 mm)	288 ft²	32 yd²	26.8 m²
1/16" (1.6 mm)	144 ft²	16 yd²	13.4 m²
1/8" (3 mm)	72 ft²	8 yd²	6.7 m²
1/4" (6 mm)	36 ft²	4 yd²	3.3 m²

Coverages based on 80 lb. (36 kg) bag mixed with 2-1/2 quarts (2.4 liters) of Sika® Thoroseal® Acryl 60 and 7-1/2 quarts (7.1 liters) of water

Product Temperature	65 - 75 “F (18 - 24 °C)	
Ambient Air Temperature	40 - 95 °F (4 - 35 °C)	
Substrate Temperature	40 - 95 °F (4 - 35 °C)	
Pot Life	30 - 45 minutes	70 °F (21 °C), 50% R.H.
Set Time	120 minutes	(ASTM C191) 70 °F (21 °C), 50% R.H.
Final set time	360 minutes	(ASTM C191) 70 °F (21 °C), 50% R.H.

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.
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USES

- Do not apply when ambient and/or substrate temperatures are below 40 °F (4 °C), or if temperatures are expected to fall below 40 °F (4 °C) within 24 hours of application.
- Do not apply in rain. Protect installed material from rain until fully cured.
- Do not apply on water saturated substrates if freezing conditions are expected before full cure. Substrates must be saturated surface dry (SSD) and free of frost.
- Do not use as a horizontal wearing surface.
- Do not apply Sika® Thoroseal®-584 P over moving cracks.
- Before specifying Sika® Thoroseal®-584 P for water retaining structures, conduct tests to determine water quality. Sika® Thoroseal®-584 P is not intended for continuous contact with acidic or sulfate-containing water. Very soft water will have an adverse effect on Sika® Thoroseal®-584 P.
- Sika® Thoroseal®-584 P does not form a vapor barrier when cured.
- Proper application is the responsibility of the user. Field visits by Sika personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts, etc. with an appropriate epoxy such as Sikadur®-32 Hi-Mod.
- Allow a minimum 7 days of air curing at normal ambient and substrate temperature conditions before subjecting Sika® Thoroseal®-584 P to submersion

APPLICATION INSTRUCTIONS

SURFACE PREPARATION

1. Existing substrates must be structurally sound and fully cured. Minimum concrete age must be 21 - 28 days old depending on curing and drying conditions.
2. Mechanically clean and remove all dust, dirt, grease, oils, laitance, efflorescence, biological residue, existing paint or coatings, sealers, curing compounds, or any

other contaminants that might inhibit bond. A variety of methods can be used. If chemical cleaning agents are used, throughly neutralize and rinse residues off surfaces completely.
3. Masonry walls should be properly cured to full load bearing capacity and laid true. Joints should be tooled flush with the faces of block or brick to provide a planar surface.
4. For cast-in-place or precast concrete, mechanically remove all form release agents and/or curing compounds. High-pressure water jetting (with or without abrasives) is recommended.
5. Properly prepared concrete will have an open texture with a feel similar to fine-grit sandpaper (i.e. typical minimum ICRI CSP-2 to CSP-3).
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 cementitious 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, scraper, stone, or grinder. All minor planar irregularities should be corrected with a tight trowel coat of Sika® Thorseal®-584 P.
7. Surface should always be pre-wet to a saturated surface dry (SSD) and frost free condition just prior to applying Sika® Thorseal®-584 P.

SURFACE PREPARATION

1. An initial field Bond test is recommended.
2. Clean and mechanically prepare the substrate. Mix a small quantity of Sika® Thoroseal®-584 P and install. Allow to cure a minimum of 5 days. Attempt to remove with a hammer and chisel. If Sika® Thoroseal®-584 P delaminates from substrate in large pieces, then surface preparation was inadequate.
3. Alternately, a mockup installation and Tensile Adhesion (Pull-Off) test following the guidelines of ASTM C1583 is recommended before full application of Sika® Thoroseal®-584 P.

MIXING

FOR TROWEL APPLICATION
1. Using a solution of at least 1 part Sika® Thoroseal® Acryl 60 diluted with 3 parts clean, potable water, mechanically mix sufficient material to provide a consistency suitable for a trowel application.
2. For an 80 lb. (36 kg) bag of Sika® Thoroseal®-584 P, use approximately 2-1/2 quarts (2.4 liters) of Sika® Thoroseal® Acryl 60 diluted with 7-1/2 quarts (7.1 liters) of clean, potable water.
3. Mix with a low speed (400 - 600 rpm), 1/2 inch (13 mm) chuck rotary drill with sufficient torque.
4. Add the contents of the bag to the liquid solution. Do not overwet or overmix. Mix to a uniform, lump-free consistency.
5. Allow mixed material to stand and rest undisturbed to fully wet out all the powder for approximately 20 minutes. Remix, adding only a small amount of mixing solution if needed, to improve workability.
FOR SPRAY APPLICATION
1. Mix approximately 2-1/2 quarts (2.4 liters) of Sika® Thoroseal® Acryl 60 with 7-1/2 quarts (7.1 L) of water and an 80 lb. (36 kg) bag of Sika® Thoroseal®-584 P to achieve a consistency suitable for a hopper gun / textured pattern pistol sprayer.
2. Mix with a low speed (400 - 600 rpm), 1/2 inch (13 mm) chuck rotary drill with sufficient torque.
3. Add the contents of the bag to the liquid solution. Do not overwet or overmix. Mix to a uniform, lump-free consistency.
4. Allow mixed material to stand and rest undisturbed to fully wet out all the powder for approximately 20 minutes. Remix, adding only a small amount of mixing solution if needed, to improve workability.
FOR EXTREME CONDITIONS
1. When conditions are extremely hot, dry and/or windy, to improve adhesion or to provide better Flexural and Tensile Strengths, adjust the dilution ratio to 1 to 2 (i.e. 1 part Sika® Thoroseal® Acryl 60 to 2 parts clean, potable water). If determined necessary, dilution ratio could even be adjusted to 1 to 1 (i.e. 1 part Sika® Thoroseal® Acryl 60 to 1 part clean, potable water). Deviating away from a normal dilution ratio of 1 to 3 will affect cured performance properties.
2. Keep powder protected from direct exposure to sunlight. Store in a cool, dry area if possible.
3. Initially cool the Sika® Thoroseal® Acryl 60 and water, and keep solution chilled. Cover hoses of spray equipment with wet burlap and cool spray equipment frequently with cold water.

APPLICATION

FOR TROWEL AND FLOAT FINISH
1. When the initial "key" coat of Sika® Thoroseal®-584 P has cured for 24 - 48 hours, apply a second "trowel" coat of Sika® Thoroseal®-584 P. 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 an initial "light trowel" coat of Sika® Thoroseal®-584 P over the entire surface to be treated. Allow this coat to cure at least 5 and up to 7 days before proceeding with the second "trowel" and sponge float finish described above. This light trowel coat may be substituted for the initial "key" 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 Sika® Thoroseal®-584 P dry powder. Coarse surfaces may require more material resulting in less coverage.
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.
FOR SPRAYED-ON FINISH
1. Spray apply an evenly distributed coat of Sika® Thoroseal®-584 P. Keep the spray gun nozzle perpendicular to and at a uniform distance from the surface and move the spray gun nozzle with steady, even strokes. Do not angle the spray gun 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^2 (4.3 - 4.9 kg/m^2) of Sika® Thoroseal®-584 P dry powder. Coarse surfaces may require more material resulting in less coverage.
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 C926, the Standard Specification for Application of Portland Cement-Based Plaster or the Guide to Portland Cement-Based Plaster by the American Concrete Institute (ACI 524R). Please note, metal lath and certain metal accessories may not be suitable for below grade or immersion service conditions. Seek advice from a qualified design professional

CURING TREATMENT

1. Water mist curing is not necessary unless too rapid drying occurs as a result of very windy or hot conditions.
2. 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 product.
2. For best color uniformity, apply a top coat of Sika® Thorocoat®, Sika®Thorolastic® (exterior only).

LEGAL DISCLAIMER

- **KEEP CONTAINER TIGHTLY CLOSED**
- **KEEP OUT OF REACH OF CHILDREN**
- **NOT FOR INTERNAL CONSUMPTION**
- **FOR INDUSTRIAL USE ONLY**
- **FOR PROFESSIONAL USE ONLY**

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