

THOROPATCH®

Two-component, polymer-modified, cement-based repair and patching material

PRODUCT DATA

3 03930

Concrete Rehabilitation

Description

Thoropatch® is a two-component, polymer-modified, Portland-cement-based repair mortar. Applied to horizontal surfaces, it gains strength quickly and has excellent chemical and wear resistance.

Yield

See page 3 for chart.

Packaging

THOROPATCH®

1 GALLON KITS: 1 gallon (3.8 L) can containing 8.0 lbs (3.6 kg) of Thoropatch® powder plus 1 quart (0.95 L) can of Thoropatch® liquid. Net weight of unit is 10 lbs (4.5 kg).

5 GALLON KITS: 5 gallon (18.9 L) pail containing 50 lbs (22.7 kg) of Thoropatch® powder plus 1 gallon (3.8 L) can of liquid. Net weight of unit is 59 lbs (26.8 kg).

50 lb (22.7 kg) bags of powder only

1 gallon (3.8 L) bottle of liquid only

ACRYL 60®

1 quart (0.9 L) bottles

1 gallon (3.8 L) pails

5 gallon (18.9 L) pails

30 gallon (113 L) drums

55 gallon (208 L) drums

Features

- Rapid strength gain
- Excellent flexural and tensile strengths
- Chemical resistant
- Polymer modified

Color

Concrete gray

Shelf Life

1 year when properly stored

Storage

Transport and store in unopened, undamaged containers protected from moisture and dampness. Store in original containers in a cool, clean, dry area between 45 and 90° F (7 and 32C). Do not allow Acryl 60® to freeze.

Where to Use

APPLICATION

- Deteriorated surfaces
- Repairing spalls and voids
- Floors
- Balconies
- Walks
- Steps
- Ramps

LOCATION

- Horizontal
- Interior or exterior

SUBSTRATE

- Concrete
- Masonry

Benefits

- Accepts foot traffic in 24 – 48 hours, and vehicular traffic in 72 hours
- Provides resistance to cracking
- Outperforms conventional concrete
- Possesses excellent bond strength and wear resistance

How to Apply

Surface Preparation

1. Area to be repaired must be clean, structurally sound, and free of all loose, dirty, oily and scaly material or any material that may affect proper bonding.
2. Repair area should have sawcut straight edges at a minimum depth of 1/8" (3 mm).
3. Clean all reinforcing steel to a white-metal finish.

Mixing

1. For small repairs, the Thoropatch® 1 gallon two-component kit includes the correct quantity of Thoropatch® liquid and Thoropatch® powder. Mix mechanically or by hand.
2. Elevated material and mixing water temperatures will shorten open time. Precondition Thoropatch® to 70° F ±5° (21° C ±3°) before mixing.
3. Mix mechanically with a 1/2" (13 mm) slow-speed drill (400 – 600 rpm) and mixing paddle. Place the Thoropatch® liquid into a clean mixing container. Gradually add the powder, stirring slowing to obtain a uniform, lump-free consistency. Do not overmix or overwater. Mix for 2 – 3 minutes.
4. When mixing by hand, first put Thoropatch® powder into clean mixing container. Slowly add Thoropatch® liquid, stirring to a low-slump mortar consistency.



Technical Data

Composition

Thoropatch® is a proprietary mix composed of cement, graded silica, fillers, liquid polymer, and additives.

Test Data

PROPERTY	RESULTS	TEST METHODS
Compressive strength, psi (MPa)		ASTM C 109
3 days	2,000 (4.4)	
7 days	3000 (20.7)	
28 days	4,100 (28.3)	
Tensile strength, psi (MPa)		ASTM C 190
28 days	750 (5.2)	
Flexural strength, psi (MPa)		ASTM C 348
28 days	1,500 (10.3)	
Tensile bond strength, psi (MPa)		Lab value
28 days	> 400 (> 2.7)	
Coefficient of thermal expansion, in/in/° F (cm/cm/° C)		ASTM C 531
28 days	2.74 x 10 ⁻⁶ (4.93 x 10 ⁻⁶)	
Water-vapor transmission, perms	18.7	ASTM E 96

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

Approximate values depending on job-site conditions

5. For large-scale installations Thoropatch® is available in 50 lb (22.7 kg) bags. Acryl 60® liquid is sold separately. Prepare a mixing solution consisting of 1 part Acryl 60® to 1 part clean, potable water. A 50 lb (22.7 kg) bag of Thoropatch® powder will require approximately 1 gallon (3.8 L) of prepared mixing solution.

6. Maximum single lift is 1/2" (13 mm). For applications greater than 1/2" (13 mm), extend Thoropatch® with up to 15 – 20 lbs (7 – 9 kg) of washed, graded 1/4", saturated surface-dry (SSD) aggregate per 50 lb (22.7 kg) bag.

Application

1. Prewet the substrate to a saturated surface-dry (SSD) condition. Some substrates may require extended and even overnight soaking. Remove excess water from the surface before placing the scrub coat.

2. As a scrub coat, apply the fresh mortar by brush to the properly prepared, prewetted substrate, vigorously scrubbing it into the exposed surface. Do not allow scrub coat to dry prior to placement of the trowel mix. If the bond coat dries out before the wet mortar can be placed, it must be removed as if it were laitance.

3. Immediately trowel apply fresh mortar to the wet brush coat using firm trowel pressure. Completely fill all voids around steel reinforcement.

4. As Thoropatch® hardens, score material between layers to improve adhesion. Trowel to a desired finish quickly after placing material. Excessive troweling will cause discoloration.

Curing

1. In normal conditions, keep patch moist by water mist or fog spray until final set. Refer to ACI 308 Practice for Curing Concrete. In hot, dry, windy conditions, longer periods of moist curing may be necessary, or use an ASTM C 309 compliant curing compound.

2. Applications will take light traffic in 24 – 48 hours. For vehicular traffic areas, allow 3 days of curing.

Clean Up

Clean tools and equipment immediately with water. Cured material must be removed by mechanical means only.

For Best Performance

- Do not apply Thoropatch® when temperature is below 40° F (4° C) or when the ambient temperature is expected to fall below 40° F (4° C) within 24 hours.
- Avoid patching under excessively hot conditions.
- Do not use Thoropatch® on wood, asphalt, painted, or frozen surfaces.
- Carry any existing joints through Thoropatch® placement. Avoid large monolithic applications by use of control or expansion joints with proper spacing.
- Do not bridge moving cracks or joints.
- Not to be used as a resurfacing or overlay material.
- Do not place a single pour of a volume in excess of 1.8 ft³ (.05 m³).
- Do not featheredge.
- Will crack over non-rigid substrates.
- 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 Degussa personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Yield*

THOROPATCH® KIT	VOLUME YIELD NEAT FT³ (M³)	AREA NEAT AT 1/2" THICKNESS FT² (M²)	VOLUME YIELD WITH AGGREGATE FT³ (M³) (using 3.2 lbs agg)	AREA WITH AGGREGATE AT 1" THICKNESS FT² (M²)
1 Gallon Kit	0.075 (0.002)	1.8 (0.044)	0.10 (0.003) (using 3.2 lbs agg)	1.2 (0.029)
5 Gallon Kit	0.47 (0.013)	11.2 (0.275)	0.63 (0.017) (using 20 lbs agg)	7.5 (0.184)

Approximate values depending on job site conditions.

Health and Safety

THOROPATCH®

Danger

Thoropatch® contains crystalline silica, Portland cement, and calcium 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).**

Degussa Building Systems

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