

THOROGRIP®

Pourable, cement-based, nonshrinking, quick-setting anchoring cement

PRODUCT DATA

3 03600

Grouts

Description

Thorogrip® is a one-component, waterproof, nonshrinking, Portland-cement-based anchoring cement that sets hard in 15 minutes. It expands as it sets and locks into the surrounding concrete. It can reach over 23,000 pounds pull-out strength at 7 days.

Yield

14 in³/1 lb (229 cm³/0.45 kg)
0.4 ft³/50 lbs (0.0113 m³/22.7 kg)

Packaging

10 lb (4.5 kg) cans
50 lb (22.7 kg) pails

Color

Concrete gray

Shelf Life

1 year when properly stored

Storage and Transportation

Transport and store in unopened containers protected from moisture and dampness in a cool, clean, dry area between 45 and 90° F (7 and 32° C).

Features

- Quick setting
- Rapid high strength gain
- Shrinkage compensated
- Nonmetallic
- Waterproof, resistant to freeze/thaw
- Flowable, pourable

Benefits

- Sets hard in 15 minutes; speeds production
- Becomes stronger than the surrounding concrete in 1 hour
- Expands as it sets, locking application in
- Maintains volume stability over time
- Provides durable, long-lasting applications
- Application friendly

Where to Use

APPLICATION

- Anchoring bolts
- Heavy machinery
- Fixtures
- Reinforcing rods
- Columns
- Railings
- Fences
- Bolts
- Small machines
- Hand rails
- Bridge railings
- Posts
- Parking meters
- Signs
- Pulleys and motors

LOCATION

- Horizontal surfaces
- Exterior or interior
- Pedestal tables or chairs

SUBSTRATE

- Concrete, masonry, and rocks

How to Apply

Surface Preparation

1. Drill holes in sound concrete wide enough to accept the head of bolts with their washers. As a general rule the hole should be 3 times wider than the object embedded (see chart on page 2). If concrete is not sound or of questionable strength, increase the recommended drill depth indicated.
2. Allow sufficient hole diameter so the material will readily flow between washer and the wall of the cavity.
3. For added strength "mushroom" the base of the hole by tilting the drill and working it back and forth during the drilling operation.
4. Blow or vacuum out all loose particles and dust, then dampen the walls of the hole with a swab to ensure a dust-free surface.

Mixing

1. Mix enough material to fill the hole (see chart on page 2 for amount).
2. Mix only the amount that can be placed in 5 minutes.
3. Mix with clean water to a uniform, lump-free pancake-batter consistency in a small plastic bowl or other suitable container.



Technical Data

Composition

Thorogrip® is a proprietary mix composed of cement, graded silica, fillers, and additives.

Typical Properties

PROPERTY	VALUE
Set time , min	15
Pullout strength , lbs (kg); average at 7 days, 7/8" (2.2 cm) bolt in 8" (20.3 cm) deep hole	23,250 (10,546)

Test Data

PROPERTY	RESULTS	TEST METHODS
Compressive strength , psi (MPa)	5,350 (37)	ASTM C 109, 7 days
Controlled expansion , %	0.03	CRD C-589

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

Thorogrip® Usage Reference Table

Table specifies the recommended opening to be drilled so that the strength of a setting will be comparable to the tensile strength of a mild steel bolt of the diameter shown. The minimum depths shown are based upon openings drilled in sound concrete of at least 3,000 lbs/in² (210.9 kg/cm²) compressive strength. In the case of weaker concrete, the depth should be increased to provide stronger lock to the concrete slab. This will minimize the danger of failure due to fracture of the concrete in the presence of extreme strains.

DIAMETER OF BOLTS OR POSTS TO BE FASTENED IN (MM)	DIAMETER OF DRILLED OPENING IN (MM)	MINIMUM DEPTH OF DRILLED OPENING AND AMOUNT OF THOROGrip® NEEDED, OZ (G)			
		2" (51 MM)	3" (76 MM)	4" (102 MM)	5" (127 MM)
1/4 (6)	3/4 (19)	0.9 (18.3)	1.3 (36.8)	1.8 (51)	2.3 (65.2g)
3/8 (10)	1-1/4 (32)	Not run	3.9 (110.5)	5.1 (144.5)	6.5 (184.2)
1/2 (13)	1-3/4 (44)	Not run	Not run	10.1 (286.3)	12.7 (360)
5/8 (16)	2 (51)	Not run	Not run	Not run	16 (453.5)
3/4 (19)	2-1/2 (64)	Not run	Not run	Not run	Not run
1 (25)	3-1/2 (89)	Not run	Not run	Not run	Not run
1-1/4 (31)	4-1/4 (108)	Not run	Not run	Not run	Not run

DIAMETER OF BOLTS OR POSTS TO BE FASTENED IN (MM)	DIAMETER OF DRILLED OPENING IN (MM)	MINIMUM DEPTH OF DRILLED OPENING AND AMOUNT OF THOROGrip® NEEDED, OZ (G)			
		6" (152 MM)	8" (203 MM)	10" (254 MM)	12" (304 MM)
1/4 (6)	3/4 (19)	2.7 (76.5)	3.6 (102)	4.5 (127.5)	5.4 (153)
3/8 (10)	1-1/4 (32)	7.8 (221)	10.2 (289.1)	13.0 (368.5)	15.4 (436.5)
1/2 (13)	1-3/4 (44)	15.2 (430.9)	1.3 lbs (589.6 g)	1.6 lbs (725.7 g)	1.9 lbs (861.8 g)
5/8 (16)	2 (51)	1.3 lbs (589.6 g)	1.6 lbs (725.7 g)	2.0 lbs (907.1 g)	2.4 lbs (1 kg g)
3/4 (19)	2-1/2 (64)	1.9 lbs (861.8 g)	2.6 lbs (1.1 kg)	3.3 lbs (1.4 kg)	0.9 lbs (1.7 kg)
1 (25)	3-1/2 (89)	Not run	5.2 lbs (2.3 kg)	6.3 lbs (2.8 kg)	7.5 lbs (3.4 kg)
1-1/4 (31)	4-1/4 (108)	Not run	Not run	Not run	11.2 lb (5 kg)

Application

1. Place anchor bolt with washers in the prepared hole. Pour a little Thorogrip® in the hole and work the bolt up and down a few times to eliminate any air pockets.
2. Fill the balance of the hole, pouring from one side only to ensure a good even flow, and hold the container high enough to ensure even flow of material with pressure.
3. Thorogrip® will set hard in 15 minutes, but do not attach nut for 60 – 90 minutes. Thorogrip® gets stronger as it cures, so allow more curing time for heavy machinery and other large installations.
4. For cold weather installations, heat hole before using Thorogrip®. Do not add anti-freeze solutions to mixing water.
5. Do not attempt to retemper or extend placement past 10 minutes.

Clean Up

Clean all tools and equipment with water. Cured material must be removed mechanically.

For Best Performance

- Do not overwater.
- Do not use below 40° F (4° C) or above 90° F (32° C).
- Slightly overfill the hole to prevent ponding of water.
- 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.

Health and Safety

THOROGrip®

Caution

Thorogrip® contains calcium hydroxide, crystalline silica, calcium carbonate, Portland cement, calcium aluminate, and calcium sulfate.

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 small amount of 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 REACH OF CHILDREN. Avoid contact with skin, eyes and clothing. Prevent inhalation of dust. Wash thoroughly after handling. Keep container closed when not in use. 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. 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, less water and exempt solvents.

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

Degussa Building Systems

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