BASF
The Chemical Company

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PRODUCT DATA

3 03 01 00 **Maintenance of Concrete**

WATERPLUG®

One-component, cement-based, fast-setting water-stop repair mortar

Description

Waterplug® is a one-component, quick-setting, Portland-cement-based hydraulic repair mortar that instantly stops running water through holes or cracks in concrete or masonry. It expands as it sets to lock into place even under constant water pressure.

Yield

Volume:
15.6 in^3/1 lb (254 cm^3/0.45 kg)

Static cracks:
3/4 by 3/4 by 28"/1 lb
(1.9 by 1.9 by 70 cm/0.45 kg).

Packaging

2-1/2 lb (1.13 kg) cans

10 lb (4.5 kg) cans

50 lb (22.7 kg) pails

Color

Dark Gray

Shelf Life

1 year when properly stored

Storage and Transportation

Transport and store in unopened container in a cool, clean, dry area between 45 and 90° F (7 and 32° C). Keep container tightly sealed after opening to maintain shelf life freshness of unused portion of the remaining powder.

Features	Benefits
• Fast setting	Stops running water; develops high strength quickly
• Fully hydraulic	Sets above or below water
• Shrinkage compensated	Expands to lock in place
• One component	Mixes easily with water only
• Ready to topcoat in 15 minutes with appropriate product	Minimizes downtime
• Durable nonmetallic, nongypsum formula	Maintains volume stability over time
• Waterplug® H formulation available for cold-weather applications	Use in all seasons and climates

Where to Use

APPLICATION

- Nonmoving (static) cracks and holes with running water or moisture seepage
- For immersion service
- For anchoring vertical bolts
- Basements
- Foundations
- Retaining walls
- Sewers

LOCATION

- Vertical, overhead, or horizontal
- Interior or exterior
- Above or below grade

SUBSTRATE

- Concrete and masonry

How to Apply

Mixing

1. Mix Waterplug® powder with clean, potable water.
2. Use powder neat without adding any aggregates, chemical additives, or admixtures.
3. Add just enough water to mix rapidly by hand to a stiff, low-slump, putty consistency. Mix no longer than 30 seconds.
4. Mix only enough Waterplug® that can be successfully placed within 3 minutes under normal conditions (see Temperature). Do not retemper material after initially mixing.
5. Clean mixing vessel and tools immediately after each use.

Thoro®

Technical Data

Composition

Waterplug® is a proprietary mix composed of cement, graded silica, calcium hydrocide, fillers, and additives.

Test Data

PROPERTY	RESULTS	TEST METHODS
Compressive strength, psi (MPa)		ASTM C 109
20 min – 120 min	1,800 (12.4)	
1 day	4,000 (27.6)	
7 days	5,000 (34.5)	
28 days	5,500 (37.9)	
Tensile strength, psi (MPa)		ASTM C 190
7 days	300 (2.1)	
28 days	350 (2.4)	
Flexural strength, psi (MPa)		ASTM C 348
7 days	600 (4.1)	
28 days	1,500 (10.3)	

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

Temperature

Cold or hot air, surface, and material temperatures will retard or quicken Waterplug® setting time. Special attention must be given when both mixing and applying. The Waterplug® and mixing water should feel neutral to the touch, normally 70° F (21° C). On average Waterplug® will set in approximately 3 – 5 minutes.

HOT WEATHER USE

1. From 86 to 100° F (30 to 37° C), Waterplug® will set very quickly. Material temperature should not be above 80° F (26° C) and mixing water over 100° F (37° C); otherwise set begins immediately and structural strength lessens when applying during these extreme conditions.

2. Waterplug® should always be placed within 30 – 60 seconds after mixing.

3. If appropriate, use ice water when mixing to slow down the setting action.

COLD WEATHER USE

1. Waterplug® should be stored at or brought up to normal room temperatures, 40 to 70° F (4 to 21° C), before mixing and use. Do not apply Waterplug® if the ambient air or surface temperatures are 40° F (4° C) or less or are expected to fall below 40° F (4° C) within 12 hours after initial placement.

2. For quicker set times at normal temperatures or applications down to 40° F (4° C), Waterplug® H may be used.

Application

1. Place Waterplug® with minimum working, kneading, or rubbing.

2. Force Waterplug® repair mortar into cracks or holes and hold in place (without twisting) until set is fully achieved.

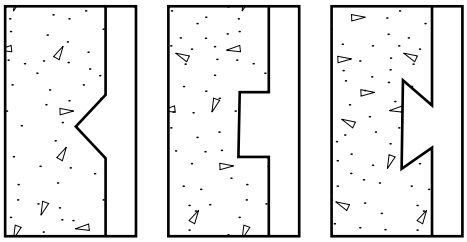
3. Just prior to final hard set, Waterplug® may be "shaved" with a trowel until flush with the surrounding surface. Always shave from the center out, in the direction of the bond line.

4. If the repair area is dry at the time of placement, keep substrate damp for 15 minutes minimum, using a fine spray misting of water, before and after placement.

SEALING JUNCTIONS

1. To seal static cracks at the junction of floors and walls, rout or cut out the crack at least 3/4" (19 mm) wide and deep, slightly undercutting if possible.

2. Flush away all loose debris, dust, and dirt with clean water.



V-cut (wrong) Square cut Undercut (Best cut)

3. Force Waterplug® into the prepared crack with a round tool or margin trowel until a set is fully achieved and smooth out to form a cove at wall-to-floor junctions.

4. Keep damp for at least 15 minutes.

STOPPING RUNNING WATER

1. To stop active water from running through concrete and masonry, cut out crack or hole to a minimum depth and width of 3/4" (19 mm). Always square cut or undercut when possible; do not "V" cut.

2. Start at top and force Waterplug® into crack. In areas of great pressure, do not place Waterplug® into opening immediately. Hold Waterplug® in hand or on trowel until a slight warming occurs. Then press Waterplug® firmly into opening.

3. Do not remove trowel or hand pressure too soon so as to provide some confinement to Waterplug expansion during its set. Do not twist Waterplug® during placement or disturb during set time (5 minutes).

4. After placement to stop the active water flow, carefully cut and "trowel shave" the patch level with the surrounding surface.

SEALING LEAKS IN JOINTS AND CRACKS

1. To stop leaking mortar joints or static cracks in below-grade masonry and concrete walls, cut out defective mortar joints or cracks to a minimum width and depth of 3/4" (19 mm). Undercut when possible.

2. Force Waterplug® into opening and keep damp for at least 15 minutes or until a set is fully achieved.

REPAIRING CONSTRUCTION FAULTS

1. For patching holes and voids, etc., in concrete walls, remove all tie wires and wood or steel separators by cutting back from surface to a minimum depth of 3/4" (19 mm).

2. When there is no active water present, repair mortars may be used more appropriately.

ANCHORING HARDWARE

1. To anchor steel bolts or posts in vertical concrete or masonry, drill a hole deep enough to properly secure bolt or post and large enough so there is at least 1/2" (13 mm) on all sides of bolt or post.

2. Fill hole with Waterplug® and tamp so that entire hole is full. Immediately center bolt or post over hole and force into the putty-like Waterplug®.

3. Tamp Waterplug® firmly around bolt or post; keep continuously moist for 15 minutes.

4. Apply no pressure or stress to bolt or post for a minimum of 5 hours after placement.

TOPCOATING

1. Cured Waterplug® repairs can be topcoated with Thoroseal® or Thoroseal® Plaster Mix (see Form Nos. 1019906 and 1019908), both modified with Acryl 60® (see Form No. 1019073), as soon as an initial set is reached.

2. Cured Waterplug® repairs can also be topcoated with various alkali-resistant acrylic coatings or used in conjunction with Thorocoat®, Thorocoat® 200 and Thorosheen® (see Form Nos. 1019100, 1019101, and 1019910).

3. Waterplug® may also be used with preformed waterproof sheet membranes after approximately 6 – 7 days cure.

Clean Up

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

For Best Performance

- Do not apply to frozen or frost-covered surfaces.
- Do not apply to dynamic (moving) cracks.
- Do not use to fill expansion joints or control joints.
- Do not remix (retemper) hardened material.
- Do not use as a surface-applied coating or as a parging material.
- Do not fill voids greater than 30 in^3 (490 cm^3) in a single lift.
- Do not use if hard lumps have developed in the powder.
- Make certain the most current versions of product data sheet and MSDS are being used; go to www.thoroproducts.com 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

WATERPLUG®

Warning

Waterplug® contains Alumina cement; Silica, crystalline quartz; Portland cement; Iron oxide; Calcium hydroxide; Limestone; Anhydrite.

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

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 g/L or 0 lbs/gal less water and exempt solvents.

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

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