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Technical Data Guide

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Maintenance
of Concrete

MasterSeal® 595

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

FORMERLY EMACO® PLUG

PACKAGING

2 1/2 lb (1.13 kg) cans
10 lb (4.5 kg) cans
50 lb (22.7 kg) pails

YIELD

Volume: 15.6 in³/1 lb
(254 cm³/0.45 kg)

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

STORAGE

Transport and store in unopened container in a cool, clean, dry area between 60° and 80° F (16° and 27° C). Keep container tightly sealed after opening to maintain shelf life freshness of unused portion of the remaining powder.

SHELF LIFE

1 year when properly stored

VOC CONTENT

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

DESCRIPTION

MasterSeal 595 is a cement-based water-stop mortar. It will stop running and seeping water through cracks in concrete under hydrostatic pressure. It can also be used to provide a watertight seal in pipes, tanks, manholes, and a variety of other locations.

PRODUCT HIGHLIGHTS

- Fast setting so it can stop running water and develops high strength quickly (45 to 90 seconds)
- Fully hydraulic so it can set above or below water
- Shrinkage compensated so it expands to lock in place
- One component so it mixes easily with water only
- Ready to topcoat in 15 minutes with appropriate product to minimize downtime
- MasterSeal formulation available for coldweather applications for use in all seasons and climates

APPLICATIONS

- Seeping cracks under hydrostatic water pressure
- Manhole inlet, outlet, and invert connections
- Sewer lines
- Concrete pipes, tanks, wet wells
- Patching construction faults in precast and cast-in-place structures
- Grouting anchors and bolts
- Forming water-resistant coves at the junction of floors and walls

LOCATIONS

- Horizontal, vertical, or overhead
- Above or below grade
- Interior or exterior

SUBSTRATES

- Concrete and masonry

TECHNICAL DATA

COMPOSITION

MasterSeal 595 is a proprietary blend of cement, graded aggregate, and set-control additives.

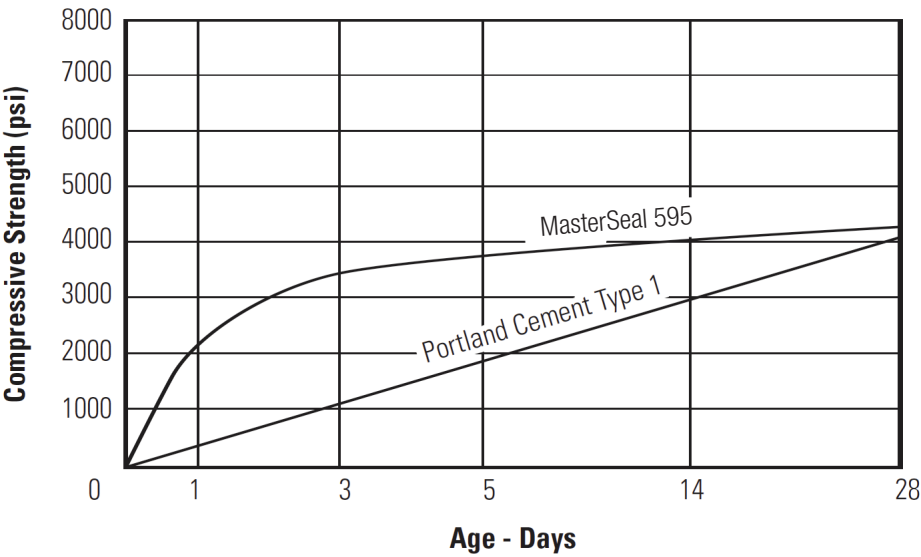
TEST DATA

PROPERTY	RESULTS	TEST METHODS
Compressive strength, psi (mpa)		ASTM C 109
1 hour	5.17	
1 day	15.2	
28 days	27.6	
Set time, sec		ASTM C 191
Final	50	
Early volume change, %	0.15	ASTM C 827
Bond test results*,		Modified ASTM C 900 / ASTM D 4541
Common clay brick	1.03 mpa	
75% cohesive failure of brick;		
25% cohesive failure of MasterSeal 595		

*At 65° F (18° C) and 24% relative humidity.
All application and performance values are typical for the material, but may vary with test methods, conditions, and configurations.

COMPRESSIVE STRENGTH

ASTM C 109 utilizing a water/cement ration of 0.30



HOW TO APPLY

MIXING

1. Mix MasterSeal 595 powder with clean, potable water.
2. Use powder (neat) without adding any aggregates, chemical additives, or admixtures.
3. Add approximately 1 part by volume of water to 3 parts of MasterSeal 595 and mix to a stiff consistency.
4. Mix only enough MasterSeal 595 that can be successfully placed within 1 minute under normal conditions (see Temperature). Do not retemper material after initially mixing.
5. Clean mixing vessel and tools immediately after each use.

APPLICATION

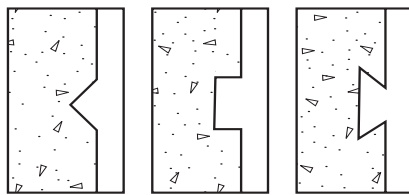
1. Place MasterSeal 595 with minimum working, kneading, or rubbing.
2. Force MasterSeal 595 repair mortar into cracks or holes and hold in place (without twisting) until set is fully achieved.
3. Just prior to final hard set, MasterSeal 595 may be "shaved" with a trowel until flush with the surrounding 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.
3. Force MasterSeal 595 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.



V-cut (wrong)

Square cut

Undercut (best cut)

2. Start at top and force MasterSeal 595 into crack. In areas of great pressure, do not place MasterSeal 595 into opening immediately. Hold MasterSeal 595 in hand or on trowel until a slight warming occurs. Then press MasterSeal 595 firmly into opening.
3. Do not remove trowel or hand pressure too soon so as to provide some confinement to Plug expansion during its set. Do not twist MasterSeal 595 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 MasterSeal 595 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).
1. When there is no active water present, the BASF Building Systems family of 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 MasterSeal 595 and tamp so that entire hole is full. Immediately center bolt or post over hole and force into the putty-like MasterSeal 595.
3. Tamp MasterSeal 595 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 MasterSeal 595 repairs can be topcoated with MasterSeal 581 or MasterSeal 584 (see Form Nos. 1019906 and 1019908), both modified with MasterEmaco A 660 (see Form No. 1019073), as soon as an initial set is reached.
2. Cured MasterSeal 595 repairs can also be topcoated with various alkali-resistant acrylic coatings or used in conjunction with MasterProtect HB 400, MasterProtect HB 200 and Thorosheen (see Form Nos. 1019100, 1019101, and 1019910).
3. MasterSeal 595 may also be used with preformed waterproof sheet membranes after approximately 6 – 7 days cure.

CLEAN UP

Remove MasterSeal 595 from tools with clean water immediately after use. Cured material must be mechanically removed. Clean hands and skin immediately with soap and water.

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.
- Always Pre-Dampen the substrate prior to placing MasterSeal 595.
- Do not use as a surface-applied coating or as a parging material.
- Do not fill voids greater than 30 in³ (490 cm³) 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, SAFETY AND ENVIRONMENTAL

Health, Safety and Environmental Read, understand and follow all Safety Data Sheets and product label information for this product prior to use. The SDS can be obtained by visiting www.master-builders-solutions.basf.us, e-mailing your request to basfbcsst@basf.com or calling 1(800)433-9517. Use only as directed. **For medical emergencies only, call ChemTrec® 1(800)424-9300.**

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