

Jahn M160 Granite & Bluestone Repair Mortar

These single-component, cementitious, mineral based mortars are designed for the restoration of granite, bluestone and other hard-stones. Jahn M160 is completely vapor permeable at any depth and contains no latex or acrylic bonding agents or additives. M160 has been specifically engineered to replicate the physical properties of the dense substrate being repaired. M160 provides a permanent and compatible repair for deteriorated hard-stones. (Only Certified Installers may purchase Jahn M160.)

Features and Benefits

- **Single-Component:** Mixes with water only, improving quality control and consistency of application.
- **Compatible Formulations:** Compatibility of physical properties ensures that the mortar and natural substrate react to the environment in the same way.
- **Contains No Latex or Acrylic Bonding Agents:** It protects the substrate by allowing salts, water vapor, and liquid water to reach the surface, preventing failure due to salt expansion or freeze/thaw cycles.
- **Tenacious Adhesion:** Strong bonding capabilities without relying on synthetic bonding agents.
- **Factory Controlled:** No field chemistry resulting in product variation.
- **Custom Colored Upon Request:** Closely matches existing masonry. Choose from Standard and Custom Colors.
- **Certified Installers:** Only installers with certification from Cathedral Stone Products can purchase Jahn M160 Granite and Bluestone Repair Mortar

Application Procedures

Surface Preparation

Surfaces to receive M160 must be sound and free of all dust, dirt, grease, laitance and/or any other coating or foreign substance which may prevent proper adhesion. Remove all loose and deteriorated masonry from the repair area using manual or pneumatic cutting tools. Areas to be repaired should be cut to provide a minimum of 1/2" depth. Do not install repairs that have a feathered edge (see diagram below); incorrect installation will cause repairs to fail prematurely. Wash the prepared surface with clean water and a bristle brush to remove dust from the pores.



Correct (Square Cut) Surface Preparation



Incorrect (Feathered Edge) Surface Preparation

Exposed Ferrous Metals

In the event that ferrous metal reinforcement (re-bar, threaded rod, etc.) is exposed within the repair area or repairs are adjacent to ferrous metal jambs, lintels, anchoring systems etc., a rust inhibitor must be applied to all properly prepared ferrous metal surfaces before repairs are made.

Mixing

The mixing ratio is approximately 4 to 5 parts powder to 1 part water by volume, depending on temperature and humidity. More water may be required as ambient temperature rises. The mixing may be done by hand, stirring until the mortar is thoroughly mixed. The mortar should be the consistency of damp sand. M70 may also be mixed using a slow speed drill (400 -600 rpm) equipped with a Jiffier-type mixing paddle. For best results, add the powder to the water slowly. The working time will vary, depending upon wind, temperature, and humidity. Using excessive water in the mixture may affect the color of the repair.

Application

Moisten the substrate using clean water. Jahn Mortar should be applied to a glistening wet surface on vertical applications and a well-dampened surface (with no pooling water) on horizontal applications. If the surface is allowed to dry out before applying M160, this step must be repeated. This is very important.

The next step of the application is what CSP has termed the "Peanut Butter" coat. The Jahn mortar should be mixed with water to the consistency of wet putty. Apply the "Peanut Butter" coat to the glistening wet substrate approximately 1/8 inch thick. Important -To achieve proper bond, the "Peanut Butter" coat must not dry out prior to application of Jahn Mortar!

Build the material out beyond the surface of the original stone. After a period of time, the surface will be DTT (Dry To Touch/Tool). The best way to determine that the surface is DTT is to screed a small portion and turn the screeding tool over; if the screeded material easily falls off of the tool, the surface is DTT and ready. If the material sticks to the screeding tool, it is not ready. The waiting period for scraping should be determined on the job, due to the effects of heat, humidity, and wind on the final color. This is characteristic of all mortars, and should be determined through samples applied on site. In hot weather the darker colors may require scraping within a short time, while in cold weather the wait time may be several hours.

When the surface is DTT, scrape away excess mortar until the desired profile is reached.

M160 is difficult to screed due to the large aggregate in the mortar.

The finishing technique is different for the granite repair mortar. When the repair is finished and has dried, a diluted acid wash can be used to clean and expose the aggregate.

If necessary, coarser aggregate and/or colored granite chips may be applied to the top surface only. Aggregate should be sifted and then rinsed to ensure that it is free of dust. Dip the trowel into water, then into the aggregate, press firmly into the installed repair while mortar is damp.

If a smooth surface is required, scrape the repairs sooner and float the trowel lightly over the repair while the mortar is still damp (this can lighten the repairs).

Curing

Traditional Cure

Periodically mist mortar repairs using clean water for at least a 72-hour period. The timing for initial water misting will vary with ambient conditions. Hot, dry conditions may require misting within 30 to 60 minutes. Cooler, damp conditions may require waiting several hours before beginning the curing process. Mist several times a day. Should access to the repairs be impossible over a period of time, temporarily cover repairs with plastic. The application of plastic, however, does not remove the need for normal curing techniques.

Self-Cure

No curing is necessary when masonry surface temperature is 85°F or lower. When working on surface temperatures above 85°F, follow the Traditional Cure procedures outlined above.

Clean Up

Remove uncured mortar from the perimeter of the repair before it dries using clean water and a rubber sponge. Repeat several times with clean water to prevent a halo effect (staining of adjacent masonry). Cured mortar may only be removed chemically or mechanically.

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Color

CSP Potassium Silicate Coating should be used if a coating is required. If a stain is preferred, combine CSP Potassium Silicate Coating with CSP Liquid Silicate.

Bluestone Recommendation

A final application of R-97 Water Repellent is recommended to preserve bluestone.

Safety Requirements

It is recommended that safety goggles, gloves, and a dust mask equipped with P-2 filters (or equivalent) be worn for protection while mixing.

Limitations

- Do not apply Jahn Mortar to a frozen or exceedingly hot substrate. The applied mortar must be protected from extreme heat, freezing, excessive wind, direct sunlight, and rain. Ambient temperature range should be 40° F to 90° F with low to average humidity.
- Do not add bonding agents to Jahn Mortar or use them as surface preparation materials.
- Minimum thickness of mortar application is 1/2"

Packaging and Coverage

A 5-gallon plastic pail contains approximately 44 lb. of material. This will cover 0.5 cubic feet (12 square feet at 1/2" thickness).

Storage and Shelf Life

Store material in a dry area away from direct sunlight. Ambient storage conditions should be in the range of 40°F to 90°F with low to average humidity. Average shelf life is 2 years in original, unopened packaging.

Technical Data

Jahn M160 – Granite

| LIQUID/ PLASTIC PHASE | |
|-------------------------------|------------------------|
| Ratio of water/dry material | 2.0 to 2.1 fl. oz./lb. |
| Volume per pound mixed mortar | 9.0 fl. oz./lb. |
| HARDENED PHASE | |
| Compressive strength | 3800 to 5100 psi |
| Tensile bending strength | 680 to 800 psi |
| Tensile strength | 700 to 900 psi |
| Absorption (%) | 2.0 to 5.5 |
| Specific gravity | 1.7 |
| E modulus | 3000 to 3500 ksi |

Jahn M160 – Bluestone

| LIQUID/ PLASTIC PHASE | |
|-------------------------------|------------------------|
| Rate of water/dry material | 2.3 to 2.6 fl. oz./lb. |
| Volume per pound mixed mortar | 12.0 fl. oz./lb |
| HARDENED PHASE | |
| Compressive strength | 3600 to 5300 psi |
| Tensile bending strength | 600 to 700 psi |
| Tensile strength | 700 to 1000 psi |
| Absorption (%) | 1.8 to 4.5 |
| Specific gravity | 1.7 |
| E modulus | 2700 to 2900 ksi |

Warning

Not for internal consumption. Keep out of reach of children and animals. Consult Material Safety Data Sheet (MSDS) for specific information.

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