

### Safety and Health

Review the Safety Data Sheet (SDS) before using this product. The SDS contains important information concerning potential health hazards and protective measures for these hazards. Contact your supervisor or safety director to obtain a copy.

### Storage Requirements

- For best performance, store the product in a dry location at temperatures between 60°F and 80°F.
- HWI packages its dry mortars in poly-lined paper bags protected with plastic wrap to ensure dry product delivery. This packaging is not intended for outdoor storage. If no dry storage is available, contact your HWI sales and technical representative for alternate solutions.
- Always store mortars on a dry flooring surface to prevent ground moisture from condensing into the package.
- Avoid storage in direct sunlight to prevent the packaging from deteriorating over time.
- Ensure that your inventory is rotated on a regular basis. Dry mortars have an average shelf life of 12 months. Refer to the product data sheet for specific shelf life recommendations. If product usability is questionable due to age, consult your HWI sales and technical representative.

### Mixer Requirements

- The product can be mixed in a paddle or other mortar type mixer. HWI recommends high-intensity paddle mixers for best results. The use of low-intensity, poorly maintained mixing equipment or inadequate mixing times can result in a mix that appears too dry, prompting the operator to add an excessive amount of water.
- Mixing time will vary from mixer to mixer; a mixing time of 4 to 7 minutes is typically suggested.
- Clean all mixing and handling equipment prior to use. Residual material in the mixer may affect the set of the product.

### Environmental Conditions

- For best results, ensure that the temperature of the product is between 60°F and 80°F prior to mixing. Temperature extremes affect working time, final set time, and final product quality.
- For cold weather installations, protect the installed product from freezing to prevent structural damage.

### Water Quality

For best results, use drinkable water with a pH of 6 to 7.5 and a temperature of 60°F to 80°F.

### Water Addition

- Accurate water measurement is critical to achieve proper installation and optimum product properties. Refer to the product data sheet for water specifications.
- Water must be measured by weight or by volume.
- The water requirements for dry mortars vary. The information given on the product data sheet is a target value. Mix the first batch below the target value, then adjust upward until the material reaches the desired consistency.
- For best performance, add the least amount of water required to reach the desired consistency.
- Varying the amount of water more than 5% above or below the target value shown on the product data sheet is not recommended without consulting your HWI sales and technical representative.

### Installation Methods

- Mortars are designed to be installed by troweling or dipping.
- Mortar is always the weakest link in refractory brick installation. Mortar joints should be full and as thin as possible with no voids.
- Troweled mortar joints always offer improved performance over dipped mortar joints.
- If a delay occurs during installation, always cover the mortar with plastic to prevent dryout.
- For extended delays, HWI recommends remixing the mortar prior to use.

### Curing

- There is no cure or set time needed for this product.

## Installation Guidelines

### Dryout

**IMPORTANT:** During dry out of a castable lining, only some water escapes via the hot face while most of the water is driven through to the cold face. If material is cast directly against a steel shell or other impermeable material without the use of weep holes, the water remaining in the lining will have no path to escape, and as the dry out schedule proceeds, internal steam pressure will rapidly increase resulting in probable lining damage and/or steam spalling. Dry out schedules issued by HWI assume that an unobstructed path exists through the cold face so that water can easily escape through the vessel/furnace shell. In most cases, weep holes are required to facilitate the removal of water/steam. Where weep holes are not allowed or a path to the weep holes is lengthy or not direct (such as a furnace hearth) some type of wicking should be used to create a path toward the weep holes or to the outside of the furnace.

For most brick and mortar installations, dryout and heatup are governed by the brick requirements, typically 100°F per hour.

### Tips

- Wet down mixers and hoppers before beginning the mixing process.
- Wash out all equipment as soon as installation is complete. A power washer is recommended.
- Always time the mixing process. **Don't guess.**
- For water, less is always best. Don't guess. **Measure.**
- Never use additives such as set extenders or accelerators without first consulting your HWI sales and technical representative.
- Many masons prefer to age non-cement bonded dry mortars from 4 to 16 hours prior to use. This gives the binders ample time to dissolve, which improves the troweling properties of the product. However, these products may be used as soon as they are mixed.
- Use cement bonded mortars promptly after mixing; these products have a limited working time.