



## ***Technical Information***

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### **GENERAL INSTALLATION GUIDELINES FOR RESCOBOND CHEM-BONDED PRODUCTS - For CASTING, GUNNING, and HANDPACKING -**

**IMPORTANT NOTE:** These guidelines do not include Rescobond AA-22S  
Use the guidelines specifically for Rescobond AA-22S

#### **For Casting Applications**

##### **A. GENERAL:**

RESCOBOND gunning grade products (RESCOBOND G) are not recommended for casting.

##### **B. STORAGE:**

1. RESCOBOND products are packaged in moisture resistant bags. However, they should be stored in a dry place that is free from excess dampness. Storage on dry concrete, asphalt, or other impervious surface will prevent moisture from the ground condensing under the plastic pallet cover and wetting the bags of material, which may result in hardening of the product in the bag and loss of strength.
2. DO NOT USE bags that contain hardened material.

##### **C. PREPARATION:**

1. Use clean tools and equipment. Contamination can affect setting and strength of castables.
2. Waterproof all forms and surfaces. Mold release agents may be used.
3. Use only clean water suitable for drinking when mixing.  
Ideal water temperature for casting is between 60°F to 85°F (16°C to 29°C)
4. A paddle-type mechanical mixer is recommended.
5. For best results, material and ambient temperatures should be 60-85°F (16-29°C) during mixing, placing, and setting.

##### **D. MIXING:**

1. Mix only as much castable as can be placed immediately. Under ideal conditions, 30 minutes is the maximum placement time. Material left in pails or mortar box may develop a "false" set, making it difficult to properly place.
2. Pre-dampen mixer before mixing first batch.
3. For the first mix, add the dry material to the mixer. Then, quickly add the minimum amount of specified water to the mixer while mixing.

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4. Mix for approximately 2 minutes. Then, adjust water to obtain the desired consistency. Excess water reduces the strength of the castable proportionately. Total mixing time is 2 to 3 minutes. Mixing time may vary depending upon the type and capability of the mixer.
5. After dumping first castable batch from mixer, load mixer with next water addition and keep mixer paddles turning. Add material when ready. This will minimize castable hardening onto mixer parts.

### **E. PLACEMENT:**

1. RESCOBOND castables can be placed by either internal (immersion vibration) or external vibration (form vibration).
2. When using internal or immersion vibration, remove vibrator slowly to avoid rat-holing.
3. When using external or form vibration, use sufficient air pressure to run the vibrator at full capacity. Use a regulator on the air line to adjust the vibrator. Adjust the vibrators to produce enough vibration to place, knit, and level the mix. Do not over vibrate because this will segregate the mix.
4. Don't overwork or excessively trowel the surface. A smooth surface inhibits moisture removal during curing and drying by bringing fines to the surface.
5. Do not burn out wood forms. After setting, wooden forms should just be removed.

### **F. SETTING:**

1. Do not disturb casting until the lining is firm to the touch. Do not subject casting to service conditions until material has set hard. If quicker setting is desired, heat installation area up to a maximum of 200°F (93°C) after casting is completed.
2. Do not spray with water or use a curing compound.

### **G. HEATING AFTER PLACEMENT:**

1. After the lining is dry to the touch, heat can be applied at a steady rate. A 24 hour curing period is NOT required for RESCOBOND products.

The ideal heating rate is 100°F (56°C) per hour to operating temperature.

All RESCOBOND products should be dried above 700°F (371°C).

2. Heating can be done before or during unit start-up.
3. Any undried or cured refractory must not come in contact with molten metal.

### **H. EXTREME WEATHER PRECAUTIONS**

1. Extreme Cold Weather:
  - Keep the material, and installation area above 60°F (16°C) during installation and setting period. Actual material and air temperature measurements should be taken.
  - Do not allow lining to freeze during the initial setting period. After the setting period, the lining may be subjected to freezing conditions. However, the castable should be at least 60°F (16°C) before the dryout / heatup procedure begins.

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### 2. Extreme Hot Weather:

- Keep the material, and installation area below 85°F (29°C) during installation and setting period. Elevated temperatures may reduce working time. Actual material and air temperature measurements should be taken.
- Store the dry castable in a cool area prior to mixing.
- Use ice water during mixing.
- Shade or spray water onto the exterior surface of the unit for cooling.

## **GENERAL INSTALLATION GUIDELINES FOR RESCOBOND CHEM-BONDED PRODUCTS**

### **For Gunning Applications**

#### **A. GENERAL:**

1. RESCOBOND casting grade products are not recommended for gunning applications.
2. RESCOBOND gunning grade products (RESCOBOND G) can be gunned onto existing eroded refractory surfaces as a patching material.

#### **B. STORAGE:**

1. RESCOBOND products are packaged in moisture resistant bags. However, they should be stored in a dry place free from excess dampness.
2. Storage on dry concrete, asphalt, or other impervious surface will prevent moisture from the ground condensing under the plastic pallet cover and wetting the bags of material, which may result in hardening of the product in the bag and loss of strength.
3. DO NOT use bags that contain hardened refractory.

#### **C. PREPARATION:**

1. Use clean tools and equipment. Contamination can affect setting and strength of gun mixes.
2. In order to ensure a strong bond, Rescobond should only be applied to a clean, sound refractory surface (sandblast, if necessary, to ensure a clean surface).
3. If application is to be performed in a lime environment, sandblasting is necessary for better bonding.
4. For better bonding, do not dampen or slurry coat surface prior to gunning.
5. Use only clean water suitable for drinking.

Water temperature added at the nozzle for gunning should be ideally minimum 60°F

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6. The most commonly used guns are the Double Chamber and Rotary Type. A continuous feed at the gunning nozzle is important to allow for uniform mixing of water and material. The Hamme and Double Bubble nozzles can be used. An extension between the water ring and the nozzle will improve the mixing of material and water. A continuous supply of water to the nozzle at a constant pressure is also important.

### **D. PRE-DAMPENING:**

1. Predampening is NOT suggested for RESCOBOND gunning mixes prior to installation.

### **E. GUNNING:**

1. The gun operator and nozzleman should adjust the air and material feed pressures for proper application and minimum rebound.
2. Rebound is that material that does not adhere to the wall during the gunning process. It normally falls to the floor and collects at the base of the wall. Discard this material as set has already started. Rebound must not be reused.

### **F. SETTING:**

1. Do not disturb the installed gun mix until the lining is firm to the touch. Do not subject the gun mix to service conditions until material has set hard. If quicker setting is desired, heat installation area up to a maximum of 200°F (93°C) after gunning has been completed
2. Do not spray with water or use a curing compound on the gunned surface.

### **G. HEATING:**

1. After the lining is set hard to the touch, heat can be applied at a steady rate.  
The ideal heating rate is 100°F (56°C) per hour to operating temperature.
2. The installed RESCOBOND should be heated above 700°F (371°C)
3. Heating can be done before or during unit start-up.
4. Any undried or cured refractory must not come in contact with molten metal.

### **H. EXTREME WEATHER PRECAUTIONS**

1. Extreme Cold Weather:
  - Keep the material and installation area above 60°F (16°C) during installation and setting period. Actual material and air temperature measurements should be taken.
  - Hot water can be used to accelerate the set.
  - Do not allow lining to freeze during the setting period. After the setting period, the lining may be subjected to freezing conditions. However, the castable should be at least 60°F (16°C) before the heatup procedure is started.
2. Extreme Hot Weather:

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- Keep the material, and installation area below 85°F (29°C) during installation and setting period. Elevated temperatures may reduce working time. Actual material and air temperature measurements should be taken.
- Store the dry castable in a cool area before mixing.
- Shade or spray water onto the exterior surface of the unit for cooling.

## **GENERAL INSTALLATION GUIDELINES FOR RESCOBOND CHEM-BONDED PRODUCTS**

### **For Handpacking Applications**

#### **A. GENERAL:**

RESCOBOND casting grade products (RESCOBOND) are recommended for handpacking.

RESCOBOND gunning grade products (RESCOBOND G) are not recommended for handpacking because of short working time.

#### **B. STORAGE:**

1. Rescobond products are packaged in moisture resistant bags. However, they should be stored in a dry place free from excess dampness.
2. Storage on dry concrete, asphalt, or other impervious surface will prevent moisture from the ground condensing under the plastic pallet cover and wetting the bags of material, which may result in loss of strength.
3. DO NOT use bags that contain hardened refractory.

#### **C. PREPARATION:**

1. Use clean tools and equipment. Contamination can affect setting and strength of castables.
2. In order to ensure a strong bond, Rescobond should only be applied to a clean, sound refractory surface (sandblast, if necessary, to ensure a clean surface).
3. If application is to be performed in a lime environment, sandblasting is necessary for better bonding.
4. Use only clean water suitable for drinking.  
Ideal water temperature is between 60°F to 85°F (16°C to 29°C)
5. Use either a Hobart type planetary mixer with a "B" flat agitator or a paddle type mixer.
6. For best results, material and ambient temperatures should be 60-85°F (16-29°C) during mixing, placing, and setting.

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### **D. MIXING:**

1. Mix only as much material as can be placed immediately. Under ideal conditions, 30 minutes is the maximum placement time. Material left in pails or mortar box may develop a "false" set making it difficult to properly place.
2. Pre-dampen mixer prior to mixing first batch.
3. For the first mix, add the dry material to the mixer. Then, quickly add the minimum amount of specified water to the mixer while mixing.
4. Mix for approximately 2 minutes. Then adjust water to obtain the desired consistency. Excess water reduces the strength of the castable proportionately. Total mixing time is 3 to 4 minutes. Mixing time may vary depending upon the type and capability of the mixer.
5. After dumping the first castable batch from mixer, load mixer with next water addition and keep mixer paddles turning. Add material when ready. This will minimize material hardening onto mixer parts.

### **E. PACKING**

1. Pack the material into the area being lined, working it as needed to fill all holes and eliminate air bubbles. Wood or rubber mallets, hammers, air rammers and trowels are commonly used for this step.
2. Trim excess material. Be careful not to cut too deeply into the lining or pull the material away from the anchor metal. Smooth the surface using a trowel, hardwood, or Teflon block, or the palm of the hand. DO NOT use the palm of the hand when the mix contains stainless steel needles. DO NOT apply water to smooth surface..

### **F. SETTING**

1. Do not disturb casting until the lining is firm to the touch. Do not subject casting to service conditions until material has set hard. If quicker setting is desired, heat installation area up to a maximum of 200°F (93°C) after casting is completed.
2. Do not spray with water or use a curing compound.

### **G. HEATING:**

1. After the lining is dry to the touch, heat can be applied at a steady rate.  
Ideal heating rate is 100°F (56°C) per hour to operating temperature.
2. Heating can be done before or during unit start-up.
5. Any undried or cured refractory must not come in contact with molten metal.

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### **H. EXTREME WEATHER PRECAUTIONS:**

#### 1. Extreme Cold Weather:

- Keep the material and installation area above 60°F (16°C) during installation and setting period. Actual material and air temperature measurements should be taken.
- Hot water may be used to accelerate the set.
- Do not allow lining to freeze during the setting period. After the setting period, the lining may be subjected to freezing conditions, however, the castable should be at least 60°F (16°C) before the heatup procedure is started.

#### 2. Extreme Hot Weather:

- Keep the material, and installation area below 85°F (29°C) during installation and setting period. Actual material and air temperature measurements should be taken .
- Elevated temperatures may reduce working time.
- Store the dry castable in a cool area prior to mixing.
- Use ice water during mixing
- Shade or spray water onto the exterior surface of the unit for cooling.