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Technical Bulletin

TB-IG11-EXG

Installation Guidelines

ExoSet UNO G Series Gun Mixes

This guideline is relevant for ExoSet UNO G series chemical bond gun mixes.

Storage

ExoSet UNO G gun mixes are packaged in moisture resistant bags and super sacks. Even so, ExoSet UNO G packages should be kept dry since moisture can reduce the gun mix's ultimate strength and even cause hardening. ExoSet UNO G packages should be stored indoors in a dry, warm, location. If the material must be stored outdoors, it should be covered by tarpaulins and stored in a well drained location where standing water will not accumulate under the pallets. Do not store in direct sunlight, especially in hot climates.

Preparation

1. The site where the gun mix will be installed must be clean to minimize the chance of contaminating the gun mix.
2. The pneumatic gunning equipment must also be clean. NOTE: Contamination, particularly by cement based materials, can effect setting causing laminations and reducing final properties.

Equipment

1. Gunning Equipment: batch type, double chamber, and rotary guns may be used though required air pressure and volume will vary with gun type and size.
2. Water Booster Pump (recommended): air or electric driven pump capable of supplying a minimum of 5 gallons per minute of water to the nozzle at a minimum pressure of 65 psi.
3. Gunning Nozzle: Hamm or double bubble type are acceptable. For hot gunning applications a hot gunning nozzle assembly or a suitable length pipe with a water nozzle may be used.

Placing

1. The ideal placement temperature (gun mix, water, & ambient conditions) for ExoSet UNO G gun mixes should be 45°F (7°C) to 90°F (32°C). If ambient conditions after placement are below 45°F (7°C), setting may be delayed.
2. Gunning water should be clean and potable (i.e. drinking quality).
3. Predampening of ExoSet UNO G Mixes is not recommended.
4. If using steel fibers as an addition, they should be slowly premixed to prevent clumping in the correct ratio into the ExoSet UNO G prior to introducing into the gun.
5. Recommended starting gun chamber pressures for ExoSet UNO G gunning mixes are 35-50 psi. These pressures are valid for up to 100 ft of gun hose. Pressure should be increase ~5 psi for every additional 50 ft. of hose. Note: insufficient or excessive air pressure can lead to a) increased rebound and b) less than ideal material properties.

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6. **Cold gunning**—Once the pressures have been adjusted the following gunning installation techniques are recommended for cold gunning:
- Distance from nozzle to working surface - 2-4ft
 - The nozzle should be kept moving continuously in a curricular motion – 1-2 ft dia.
 - Build vertical refractory surfaces from the bottom up at a 45° angle
 - Gun working area^a (panel) to full thickness before continuing on
 - Build up lining thickness, coating gradually over the working area^a (panel)
 - Do not gun on a surface that has “set” more than 10 min.
 - Do not gun over rebound. Rebound cannot not be recycled.
 - Trim refractory surface to desired thickness and cut expansion joints (if required) within 10 minutes of achieving full lining thickness. Do not slick trowel the surface.
 - If gunning against old or previously installed refractory while not required it is recommended that the refractory surface be moistened with a water spray immediately prior to applying the ExoSet UNO G gun mix to maximize adhesion.
7. **Hot Gunning**—Once the pressures have been adjusted the following gunning installation techniques are recommended for hot gunning:
- Distance from nozzle to working surface - 2-4ft
 - The nozzle should be kept moving continuously in a curricular motion – 1-2 ft dia.
 - The initial coating (~1/2”) on a hot surface should require slightly more water to enhance the bonding. Once the initial coating is made, reduce water to achieve “normal” gunning consistency.
 - Build up lining thickness, coating gradually over the repair area to full thickness.
 - Do not gun over rebound.

^a A working area will vary between specific applications and refractory lining thicknesses but will be a surface that can be gunned to full thickness within 10 minutes

Curing and Bake Out

ExoSet UNO G gun mixes do not require formal curing or minimum setting time and once set may be heated as soon as required. Please refer to the appropriate bake out schedule referenced below.

Technical References

Technical Questions

Plibrico Technical Department
Plibrico Engineering Department
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Heat Up Schedule

Plibrico Schedule **D**



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