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Technical Bulletin

TB-IG06-EX

Installation Guidelines

ExoSet UNO Series Castables

ExoSet UNO castables are cementless, chemically bonded castables that cast and place similar to cement bonded castables but have different curing and dry out requirements.

Storage

ExoSet UNO castables are packaged in moisture resistant bags and super sacks. Even so, ExoSet UNO packages should be kept dry since moisture can reduce the castable's ultimate strength and even cause hardening. Castable 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 ExoSet UNO castable will be installed must be clean to minimize the chance of contaminating the castable.
2. Mixers, tools, vibrators, and conveying equipment must also be clean. NOTE: Contamination by portland cement, calcium aluminate cement and/or sodium silicate can effect setting, working time and final properties.
3. The back-up wall or insulation material against which the castables will be poured must be smooth and free from wide gaps or cracks. This surface, if not waterproof, must be coated with a curing compound or plastic film. If plastic film is used it must be securely attached or it may float or wrinkle during pouring.
4. All forms / molds used should be moisture resistant or made moisture resistant with the use of curing compound / moisture proofer. The forms should be coated with a parting compound / mold release agent.
5. Mechanical mixing equipment should be used. Paddle, pan, and other high intensity mixers are preferred. Other types of mixing equipment (i.e. tumblers / cement trucks) may increase mixing time and water demand.

Mixing

1. The ideal mixing and placement temperature (castable, water, & ambient conditions) for ExoSet UNO castables should be 60°F (16°C) to 90°F (32°C). Casting and placing at lower ambient conditions, to 45°F (7°C), will result in delayed setting and increased time for mold / form removal
2. Mixing water should be clean and potable (i.e. drinking quality).
3. Start the mixer and empty the entire contents of one or more packages (bags or super sacks) into the mixer.
4. For the first batch add 90% of the mixing water as specified on the package data sheet and mix for 1-2minutes. Adjust water for the desired consistency. The final water amount required for the

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desired consistency can be used as the starting point for subsequent batches. Slight water adjustments may be needed from time to time during the casting process to maintain the desired consistency.

Placement

1. Castable placement should begin as soon as the mixing process is complete. The total time interval from the addition of water until the castable batch is in place should not exceed 15 minutes.
2. If using ExoSet UNO castables to repair or veneer old refractory, wet down the old refractory surface with water prior to placing the ExoSet UNO. This will increase adherence.
3. Place the castable taking care to fill in any undercuts or profiles. Vibrate using a wand or external (form) vibrator as needed to remove entrapped air pockets, to consolidate and knit the pour layers and level the castable.
4. Do not over vibrate the castable. This will result in material segregation and surface skinning.
5. Do not over trowel or finish the cast surface to a very smooth or "slick" texture. This will inhibit moisture loss. Use of a wood screed or broom is preferred for finishing the cast surface.
6. Once casting begins, it should continue uninterrupted until the form is complete. Do not allow castable to set more than 15 minutes between casting layers.

Curing and Bake Out

Unlike cement bonded castables, ExoSet UNO castables do not require the use of a moisture retention membrane on exposed surfaces such as curing compound or plastic film. ExoSet UNO castables should be left undisturbed for at least 4hrs before form removal is attempted.

After setting ExoSet UNO castables may either be left to air dry or 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 Schedules

Field Cast	Plibrico Schedule B
Pre Cast	Plibrico Schedule PS-I



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