



Rapid Set® Concrete Mix, Honor Foods (Springfield, MA)

COLD-CLIMATE CONCRETING

Food Distributer's Cold-Storage Floor Receives Fast-Track Repair

Honor Foods (formerly Bennett Foods) is one of the Mid-Atlantic's largest, most trusted food-service redistribution companies. The company specializes in grocery, frozen and dairy foods, with some 2,500 stocked items from 275 brand-name companies as well as quality house brands.

The company prides itself on flexible and responsive customer service, providing quick turn-around on orders. So when a refrigerator floor in Honor Foods' busy Springfield, Mass., location needed repairs, the company needed the work done with minimal downtime—so as not to disrupt services or damage perishable foods.

The project owner wanted the floor back in service within three days. Contractor New England Surface Preparation Inc. of Wakefield, Mass., was able to do it in 24 hours by using Rapid Set® Concrete Mix.

CHOOSING THE RIGHT MATERIAL

The concrete floor had suffered abrasive wear and tear from heavy forklifts and pallet jacks. Three sections needed to be cut out and replaced, with the largest being a 10-foot x 15-foot area. All sections were 2 to 4 inches deep. But because the flooring was located in a refrigerated section of the climate-controlled warehouse, not just any concrete repair material would do.

Portland cement, for instance, is not suitable for curing in temperatures lower than 50 degrees Fahrenheit—and needs to cure for a minimum of three days and possibly more, depending on the application. It must also be protected from freezing during the first 24 hours after placement, until it has reached a minimum compressive strength of 500 psi.

Due to the constraints of traditional materials, New England Surface Prep chose to use Rapid Set Concrete Mix. This high-performance blend of hydraulic cement and quality aggregates is faster setting than portland cement and offers higher long-term performance. Rapid Set Concrete Mix produces virtually no bleed water that can potentially freeze and crack the fresh concrete. Instead, it consumes the mix water while generating heat during the hydration process, which allows it to harden and dry in one to four hours and achieve compressive strengths of up to 2,800 psi in one hour.

COLD-WEATHER CONCRETING

The current American Concrete Institute (ACI) definition of cold-weather concreting, as stated in ACI 306 is, “a period when for more than three successive days the average daily air temperature drops below 40 degrees Fahrenheit and stays below 50 degrees Fahrenheit for more than one-half of any 24-hour period.” These temperatures can potentially lead to problems with freezing of the concrete at an early age.

Honor Foods' refrigerated warehouse is kept at 40 degrees Fahrenheit. The company was able to increase the temperature to 50 degrees for concrete placement and setting to take place, but could not maintain that temperature for more than 24 hours due to the perishable foods kept at the facility.

Using Rapid Set Concrete Mix, New England Surface Prep was able to work within that time period.

The process was simple. On Day 1, the contractor jack-hammered the damaged sections of floor and prepped those areas for concrete placement. On Day 2, the pour began with a three-man crew mixing and placing 200 bags of Concrete Mix, screeding it flat and finishing by trowel.



Rapid Set Concrete Mix set in 20 minutes and was ready for traffic after one hour of wet-curing. There was no need to provide supplemental heat after placement, or to keep the surface wet for more than an hour.

The floor was operational the day after concrete placement. The contractor and the client were pleased with Rapid Set Concrete Mix's fast turnaround time.