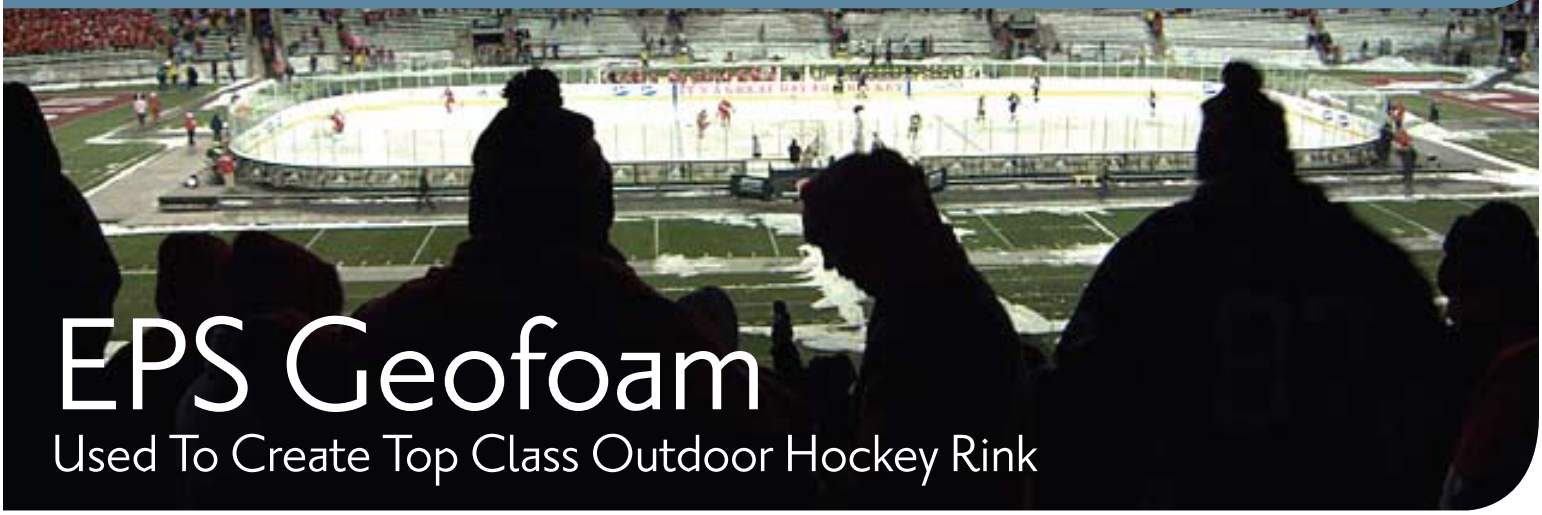

EPS Geofoam

Used To Create Top Class Outdoor Hockey Rink

The University of Wisconsin recently constructed a new outdoor ice rink to host the Camp Randall Hockey Classic. The players, refs and over 55,000 fans didn't know the fast action on the ice was made possible by expanded polystyrene (EPS) geofoam. While frequently used for highway embankments and fill for roadbeds over unstable ground, structural support for an ice rink may be a first for EPS geofoam.

The University had the rink created on the Badger football field. Ice Rinks Events, a company that stages special events ice rinks, was in charge of turning the turf into a NHL-sized, 200-foot long by 85-feet wide rink. The "ice rink team" also included SGA Production Staging, Inc., a company that often works with Ice Rink Events and has been involved in staging for four Super Bowls, and Plymouth Foam, an EPS manufacturing company in Plymouth, Wisconsin.

Construction on the rink began January 25 and the rink was ready for test use by February 1. The foam base decking used to create the surface for the ice was installed during the first two days followed by the installation of the rink matting, ice and boards.

Jim Nugent, a manufacturer's representative for Plymouth Foam, was contacted by Patrick Selstram from Ice Rink Events. Selstram and Nugent discussed the possibility of using EPS geofoam as a platform for placing the ice surface for a UW outdoor hockey game. Plymouth Foam's expanded polystyrene (EPS) would provide the rink base.

"The design challenge was to provide a level surface for the construction of the ice rink on a football field that sloped in four directions at about a ¼" per foot," said Nugent. At the Camp Randall Stadium the field is crowned with the highest point of the field near the "W" at midfield and the playing surface drops off toward the sidelines and goal lines.

Another design challenge was creating a level surface that could handle the weight of a 10,000 pound ice resurfacing machine.

The "team" immediately saw the advantages of EPS with its design flexibility and the capability to use a mixture of tapered panels to level the field and provide a sound platform with minimal deflection.

The rink ice began with a base layer that reached the top of the mats, then about an eighth of an inch of sand was added to cover the ice to provide some stability and insurance against cracks in the playing surface. Another half inch of ice or so was added on top of that, before the paint layer was added with the lines and logos. One more layer of ice on top of the paint completed the rink. Cooling pipes were run under the ice to keep things cold in case of warm weather or to serve as a heat exchange in case the weather got too cold. The exchange keeps the ice at the proper temperature to prevent chipping.

Photos courtesy of Plymouth Foam

On the UW Athletics Department website, there is a photo gallery showing day-by-day construction of the rink. Go to www.uwbadgers.com/sports/w-hockey/spec-rel/020110aab.html

Plymouth Foam supplied a combination of 40 and 60 psi EPS geofoam to SGA Staging Services. SGA's expertise helped determine the types of EPS that would be required to adequately support the weight of the Zamboni. Three truckloads of EPS foam were needed for the job. The rink has a base layer of T&G OSB subflooring, a layer of 40 psi EPS sloped to reverse the slope of the field, a 2" layer of 60 psi EPS and a final top layer of the T&G subflooring.

According to Nugent, "to our knowledge, this is the first time EPS has been used in this type of application."

However, to the athletes who played in the Classic, it was just a rink ready for a good game ■

Salt Lake City Light Rail Expands With Geofoam

In the nation's second-largest application ever of its kind, approximately 2,131,256 cubic feet of expanded polystyrene geofoam blocks expedited an expansion of Salt Lake City's Transit Express (TRAX) light-rail system.

Geofoam has an established track record worldwide as a cost-effective engineering solution for difficult embankment stability and foundation settlement applications. It was selected in place of soil to save time and money constructing the embankment, which is up to 40 feet high in some areas. The Utah Transit Authority (UTA) will save at least $20 million and eight months of construction time by avoiding soil settlement issues.

The density of geofoam being used on the project will withstand over a thousand pounds per square foot. Each block weighs approximately 150 pounds, allowing easy movement and installation around the job site. The blocks were stacked up to a height of 40 feet, capped with a concrete slab, road base, pavement and then the light-rail tracks. Geofoam's lightweight will allow UTA to build bridges over already existing utility lines without having to dig them up.

The project, which spans 5.1 miles and will cost $250 million, began in February 2009. UTA used geofoam in seven locations in the West Valley line, which could open as early as 2013. The UTA light-rail project is second only to I-15 construction 10 years ago. A recent study on that project shows the geofoam is performing well.