References

Kansas University

Uponor involvement

Project highlights

- $13 million renovation
- Originally built in 1955
- Repipe with Uponor PEX Plumbing Systems
- 109,000-square-foot dormitory
- 42 bathrooms, laundry facility and large kitchen

Products used

- 12,000 feet of ½" through 2" Uponor AquaPEX®
- ProPEX® engineered polymer (EP) and lead-free (LF) brass fittings
- EP multi-port tees and elbows

Major commercial repipe takes place at KU's GSP residence

Learn why affordable, flexible PEX piping was the right solution for a major renovation and repiping project in a large...
In 2011, CollegeProwler.com, a university search site for students by students that ranks everything from parking, transportation and housing to campus life, academics and athletics, gave a very astute observation of Kansas University's Gertrude Sellards Pearson (GSP) Hall: "Great location, but needs renovation." The university heard the call loud and clear and set out to accomplish a year-long, $13 million renovation which included a complete interior demolition of the electrical, plumbing and HVAC systems.

Built in 1955, the four-story, 109,000-square-foot building was initially plumbed with galvanized steel and then repiped with copper about 15 years ago in the mid-1990s. When bids went out for the new renovation, all the plumbing bids with copper came in too high. Saladino Mechanical of Kansas City, Mo., decided to rebid the project with PEX — a flexible, plastic pipe that has been gaining popularity in commercial and residential plumbing projects over the past 20 years since the early 2000s due to its extreme durability and cost-effectiveness.

Project Facts:

Location US - Midwest, Kansas	Completion 2011
Vertical markets Higher education	Application categories Plumbing
Project Type Renovation	

Kansas University’s GSP Hall repipe

Mark Baker of Specified Systems, Inc., worked with Saladino and sent the project through Casey Swanson and Mike Rivers of Uponor for the design work. The bid came back right on target. Carl Bachner, foreman at Saladino, had been plumbing with PEX since 2003 and was very familiar with the product.

“I was first introduced to PEX back in 2003 when I was installing the plumbing system for an assisted living complex,” he said. “After that, I installed it in my own home and I’ve never had a problem with it.”

The GSP Hall repipe used nearly 12,000 feet of ½", ¾", 1", 1¼", 1½" and 2" Uponor AquaPEX® for the plumbing system, which included piping for 42 bathrooms, a laundry facility and a large kitchen to accommodate the more than 300 students that will be residing in the newly renovated dormitory.

The system also included Uponor’s ProPEX® engineered polymer (EP) and lead-free (LF) brass fittings. Baker noted that using EP fittings also helped bring the costs down for the plumbing system. “The EP product is helping us get a good leg up on the competition cost-wise compared to brass,” said Baker. “In fact, up to 80 percent of the fittings we do now are EP.”

The cold-expansion ProPEX fitting concept was also a big winner with Bachner and the other installers. The ProPEX connection uses an expansion tool to expand the flexible PEX tubing piping to insert a fitting. Then, as the PEX shrinks back to its original size, it creates the connection around the fitting. “The ProPEX fitting is nice because it doesn't restrict the flow like insert fittings do,” remarked Bachner. “It keeps the same OD like copper does."

Unique system features

The system used multi-port tees and elbows in the bathrooms to supply water to the lavatories and showers. The multi-ports make it faster and easier to distribute water to fixtures in a single grouping and also provide advantages for clustered or consecutive uses of hot water, saving on energy and water usage.

“Once hot water arrives at a multi-port, it is readily available to all fixtures connected to that tee or elbow,” says Rivers Swanson, director, Segment Marketing, at Uponor. plumbing product manager and former design services manager at Uponor. “Essentially, that multi-port’s fixture grouping is ‘charged’ with hot water.”

Energy and water conservation was also a large part of the design process with several runs of Pre-insulated AquaPEX tubing piping to insulate the hot-water lines. Since Pre-insulated AquaPEX uses a closed-cell PEX-foam insulation, which can’t be used in a plenum, the plumbing lines in the plenum areas had to be insulated with ½" fiberglass insulation.

“When installing PEX in a plenum application, you need to cover it with ½" fiberglass insulation if the tubing piping is installed within 18" of the next run of pipe,” Rivers Swanson said. “So, the ¾" pipe run above the kitchen had to have ½" fiberglass insulation installed since the piping was less than 18" apart.”

The design also called for a unique application for the flush-valve water closets. The designers were able to come up with a concept that used PEX along with prefabricated stubouts, instead of traditional copper or another rigid pipe product. This helped to save on costs compared to making them all out of straight copper.

“Because of its flexibility, PEX significantly dampens surge pressure and noise transmission when compared to copper,” said Rivers Swanson. “In fact, surge pressure in PEX is 65 percent less than in copper and noise transmission in copper is 8 times higher than in PEX tubing piping. For these reasons we wanted to supply all the flush-valve water closets with PEX. We used prefabricated 18" x 6" stubouts of 1" copper that was rigidly supported behind the wall to transition from PEX to the flush valve.”

Kansas University

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