



Project Summary

Liberty University in Lynchburg, Virginia held the first swim meet in its new state-of-the-art natatorium in December, 2017. The 75,000 square-foot facility is unique for college campuses in that it features an Olympic-size pool and Olympic-size diving platform, among other impressive amenities.

It was built to elevate the university's NCAA Division 1 women's swimming and diving team and the men's club swimming and water polo programs; while also hosting regional, state, and national meets for high school, collegiate, YMCA and USA Swimming programs.

The pool itself is 50 meters by 25 yards, fitting nine Olympic-sized lanes or 20 short-course lanes. The diving well features a three-column diving tower with 1, 3, 5, 7.5, and 10-meter platforms. The diving platform is the largest in the U.S. so it not only needs to maintain its structural integrity, but its aesthetic quality for years to come.

Any crack in a pool is detrimental because a pool is meant to contain water. Shrinkage cracks create a path for water to leech into the subgrade. In an in-ground pool, this can cause erosion around the pool. In a pool at the top of a residential building, this can cause water to leak into the units below. And overall, cracking can compromise the high-quality look and feel.

Paddock Pool Equipment Company enlisted PREVent-C to prevent shrinkage cracking that could threaten the structural integrity of the pool and diving platform while requiring costly repairs. PREVent-C was added to the concrete mix for the slabs in both the pool and the dive well, the shotcrete mix used for the walls of both the pool and the dive well, and to the poured concrete mix used for the diving platform.

After 8 months, the use of PREVent-C resulted in zero cracks in two important ways. First, PREVent-C provides controlled expansion resulting in volume stability creating 90 percent fewer cracks on average compared to standard concrete. Second, the admixture is designed to reduce the surface tension of the pore water, reducing drying shrinkage of the concrete.

Owner: Liberty University

Engineer: Water Technology Inc.

Contractor: Paddock Construction Company

Ready-Mix Producer: Lynchburg Ready Mix

CY of Concrete: 450 CY for the slabs, 325 CY for the walls, and 200 CY for the dive tower