POST-TENSIONED

post-tensioned concrete courts | running tracks | clay courts | play courts | resurfacing | acrylic coatings

Tennis and Track Co.

athletic surfaces | done right

The post-tensioned construction process

The Tennis and Track Company specializes in post-tensioned concrete tennis court construction with 350+ courts built over the last 15 years.

Post-tensioning concrete was originally developed in France during the 1930's when it was realized that placing concrete in compression greatly increased its strength. Post-tensioning involves encasing sheathed cables in a concrete slab, then stressing and locking the cables after the concrete has set up. The technology was introduced to the United States in 1950.

In 1981, post-tensioned concrete tennis courts were introduced into the Inter-Mountain Region as a means of combating weather extremes and temperamental soil conditions. This method of construction provided a more structurally sound substrate, one that increased longevity and resisted the most common problems associated with tennis courts: heaving, settling and large structural cracks.

Post-tensioned concrete tennis courts have become the preferred method for new construction, rebuilding and overlay renovations.

New or re-building construction process:

1. laser grading

After the rough grade is established, the fine grade is achieved with a laser-controlled machine to provide a true plane with tolerances to ± 3/8".

2. beam and cables

An enlarged perimeter beam is excavated for anchoring the stressing cables and fence posts. Engineered cable spacing is determined by tendon length and soil conditions.

3. concrete placement

Concrete is placed using a laser-controlled or A-frame screed to achieve precise slope.

4. concrete finishing

Equipment designed for finishing large slabs is used to insure uniform planarity and texture.

The advantages of this construction **greatly reduce annual and long-term maintenance costs** when compared to conventionally reinforced concrete or old-technology asphalt courts:

- **Span unstable soils and resist settling and heaving**
- **Minimize cracking and limit crack growth**
- **Enable a more precise planarity for drainage and play**
- **Provide a more durable, longer lasting slab**

"The use of post-tensioned concrete in the construction of tennis, basketball, multi-purpose and other exposed and covered sport courts around the country has resulted in slabs with less cracking, reduced maintenance cost, and a longer service life."

Post-tensioning Institute:
Design and Construction of Post-tensioned Sport Courts 2006, p. 15.

Design/Build Capabilities

The Tennis and Track Company has designed and can assist in the design of post-tensioned concrete courts. We can provide drawings, cross-sections and non-proprietary specifications for specific sites that meet USTA, PTI and ASBA standards.

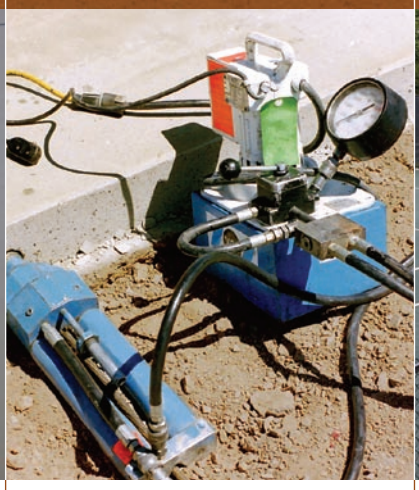
Design/build means **single-source** responsibility from inception to completion and saves on design costs, saves on change order increases and saves time. With a design/build project, we can give a 5-year warranty of no cracks growing to greater than 1/8" in width.

We employ Post-tensioning Institute *Certified Installers* and American Sports Builders Association *Certified Tennis Court Builders* to insure the quality of the installation.

5. fence posts

Fence posts are installed into wet concrete in the perimeter beam to eliminate adjoining cold joints.

6. tendon stressing



Once the concrete has reached the specified compressive strength, the cables are tensioned.

7. fencing

Fencing may be of various heights, galvanized chain-link, vinyl-clad, wood or customized. It can be designed for windscreen/backdrop curtains.

8. surfacing

The final surface can range from a 3/8" cushioned surface to color coats textured for slow play.

Post-tensioned concrete overlay

Post-tensioned concrete courts can be placed over existing courts—with new fencing or by using the old fencing if it is in good condition.

Building post-tensioned slabs over badly cracked courts or even poor substrates can be accomplished.

Building over an old court saves demolition costs, landfill fees and the risk of uncovering subsurface instabilities. (old court in foreground, ready to place in middle and freshly placed in back)

A perimeter beam is excavated inside the existing fence line for anchoring the cables. A 3' wide filler strip is needed to allow for tensioning of the cables.

Other play courts

In addition to tennis courts, other multi-use courts benefit from post-tensioned concrete construction.

Post-tensioned concrete basketball courts resist abuse such as skateboarding better than asphalt ones and without the necessary expansion joints of conventionally reinforced courts.

Volleyball and pickleball courts can be combined by installing adjustable net posts.

In-line hockey rinks mandate joint-less, close-tolerance slabs for play.

Ice rinks can be created from flat tennis or basketball courts with or without cooling tubes.

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