

Foundation 101

Several methods exist for pre-stressing concrete, with post-tensioning being a very common one. Before a post-tension slab is poured, high-strength steel strands or cables, called tendons, are laid in a tight grid. These help support and give strength to the slab once it has cured. The tendons are sheathed in plastic so that they do not directly touch the concrete. After the grid is made, the concrete is poured, with extra care taken to make sure that the tendons remain at the correct depth.

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The concrete is allowed to cure to about 75% of the way, at which point post-tensioning occurs. Each of the tendons in the post-tension slab is pulled tight, using a hydraulic jack. The tensing of the cables occurs after the concrete has mostly cured, hence the term "post-tension." The tendons are usually pulled to a tension of 25,000 pounds per square inch (4503 kg per square cm). Once the cables have reached the designated tension, they are anchored in the concrete, and the slab is allowed to fully cure.



Many modern homes are built on a post-tension slab, which serves as an excellent foundation. This method of prestressing concrete is especially useful in areas where the soil expands and contracts relative to weather conditions. Apart from residential applications, post-tension concrete opens up the possibility of many construction techniques that otherwise would be impossible.

