

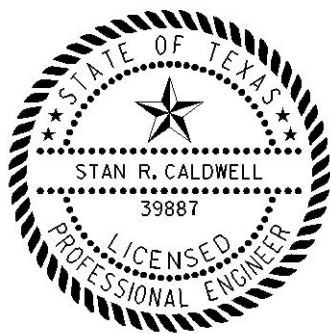


Structural Engineering Licensure ...

The Code of Hammurabi, dated about 1762 BC, had six provisions related to construction, including: "If a builder builds a house for a man and does not make its construction firm, and the house which he has built collapses and causes the death of the owner of the house, that builder shall be put to death." Since then, construction laws have evolved and greatly expanded, building and bridge codes have evolved to address advances in materials and methods, and design has evolved into a series of licensed professions.

In the United States, professional engineers were first licensed in 1907 in Wyoming and, 30 years later, in Texas. They have now been licensed in all states for decades. Structural engineers were first licensed in 1915 in Illinois. Currently, 11 states have some form of structural engineering licensure: Illinois, Hawaii, Alaska, California, Washington, Oregon, Utah, Idaho, Nevada, Nebraska, and Louisiana. Florida should enact structural engineering licensure this year, and several other states are likely to follow within the next few years. In Texas, however, all engineers continue to be licensed generically as professional engineers. Various efforts to enact structural engineering licensure in Texas over the past few years have not been successful. Is this a problem?

My P.E. seal is displayed below:



It attests that, on the basis of education, experience, and examination, I am licensed to practice engineering in Texas. More than 56,000 other engineers hold similar licenses in Texas. They practice in 27 recognized disciplines, but no one would know that by their P.E. seals and the initials "P.E." after their names. Even worse,

Texas allows all of its licensed professional engineers to practice in any discipline or disciplines where they feel that they are competent, regardless of their education, experience, and examination. Their competency is only challenged after a failure or complaint.

Many engineers think that they are competent to occasionally step beyond their normal everyday practice. Like most humans, they tend to overestimate their capabilities, a phenomenon known as the Dunning-Kruger effect. The results can be disastrous when their experimentation extends to structural engineering. There is no such thing as a part-time or occasional structural engineer and there hasn't been for decades. Structural engineering is a full-time, high-liability profession that requires strict compliance with ever-changing codes, active knowledge of the latest technology and products, and sound judgment that comes only with experience.

When a medical doctor makes a mistake, a single patient suffers or dies. When a civil, mechanical, or electrical engineer makes a mistake, there might be some economic loss, but seldom any injury or death. When a structural engineer makes a mistake, however, the consequences can often be severe. A building or bridge collapse can injure or kill hundreds of people, and the economic loss can be enormous. In part, this explains why the structural engineering examination is 16-hours long with detailed essay questions, while the other discipline-specific professional engineering examinations are only 8-hours long with brief multiple-choice questions.

The primary obligation of every engineer is to protect the health, safety, and welfare of the public. When it comes to mistakes, preventative measures are always far superior to remediation efforts. This is the core argument for structural engineering licensure. Such licensure will reduce the likelihood of unqualified structural engineering practice, improve the design of complex structures, enhance the performance of structures subjected to extreme loading conditions, support better standardization and reciprocity of structural engineering licensure nationwide, and demonstrate to the public that structural engineering is a distinguished and specialized profession. The time has come for Texas to enact structural engineering licensure.