

## QUALIFYING YOUR EXPERT

By John McKinney

**A**fter Daubert and subsequent clarifying cases, an attorney must ask... "How do I go about Qualifying My Expert?" So he sets about the time-consuming process of reviewing the expert's CV in depth and possibly interviewing the potential expert. In some cases this may require technical knowledge on the attorney's part. Allow me to offer at least one quick pre-qualifier of a potential expert in the field of engineering.

Is your expert a Licensed Professional Engineer? Every state in the union has an act that regulates and licenses the practice of engineering. All of the various state engineering and surveying licensing boards belong to the National Council of Examiners for Engineering and Surveying (NCEES). Every state engineering act includes investigation as part of The Practice of Engineering. To become a licensed engineer is not as simple as filling out forms and paying a fee. All state boards grant licenses based on education, examination and experience (the "Three E's"). Each of the Three E's present a challenge to the "would-be engineer."

The first "E" is education. The engineer must graduate from a four year (no Associate degrees) engineering curriculum with an adequate quantity of mathematics, basic science and engineering courses (no engineering minors). Many states require official transcripts be sent.. Foreign applicants go through a second review to evaluate curriculums. Additionally, they must pass tests in both spoken and written English.

Assuming that the applicant has successfully obtained an accredited engineering degree, he/she qualifies to take the first of two rigorous eight-hour examinations. All the examinations are prepared by the NCEES, so there is no difference from state to state. This ex-

amination is called the Fundamentals Examination.

Assuring that our applicant has successfully passed the Fundamentals Examination (about 65-75% pass), he/ she qualifies to practice but only under the watchful eye of an already licensed engineer. Our applicant then is required to gain four years of progressive verifiable experience (sidewalk superintendents don't count). This experience is then reviewed by licensing boards to see if our applicant qualifies for yet another more difficult exam.



Assuming our applicant meets the approval of the licensing board, he/she must now take the Principles and Practice exam. With a national pass rate average of around 50%, we find that we have separated many from the ranks. This does not count those that didn't try to take the examinations to qualify for (what I feel are) the prestigious letters P .E. after their name.

All of the state licensing boards have disciplinary authority. (Some go as high as felonies for repeat offenders.) All states maintain the disciplinary history of licensees. So you can check to see if your potential expert

has had any disciplinary actions. It should be noted that disciplinary activity of the various states has been increasing over recent years due to in- creased investigation. The most frequent offense is unlicensed practice.

What does all this mean? To be blunt, the amount of care practiced by licensed engineers is higher primarily due to the possibility of permanent loss of license for blatant, poor engineering.

As for the engineering cases that I have investigated over the past two years, approximately 75% have had a violation of some state's Engineering Act. One of the key points I always look for is who is the Engineer of Record (Building Permit) or in Responsible Charge (signed and sealed the drawing). He/she ultimately is the responsible party. If he/she takes advice and incorporates the advice in his/her work, he/she is responsible for that advice. This usually ends the argument over who told who what.

I must make note that there is a difference between engineering and science. For example, if a person studies the effect of lightning passing through soil after it hits the ground, that is science. If a person takes that same lightning bolt information and designs a grounding and lightning arrest system for a building, he/she is practicing engineering.

For those attorneys who would employ a licensed engineer as an expert, you should expect that the engineer will apply appropriately the scientific method and will rely on his/her education and experience in developing his/ her work product. For those who would consider engineers for design, the standard of care employed will include knowledge of applicable standards and

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codes. (In industrial applications this can be quite complex). One can also expect that the engineer will employ proper risk and safety analysis techniques.

I don't think that the value of licensure has been properly explained to engineering students. Primarily this is due to the so-called "manufacturers exemption", in many state acts. First, the exemption has been eliminated or modified in many states. Second, many in manufacturing management are not aware of the requirements of the Engineering Act until it is too late and they are facing sobering regulatory and/or civil penalties.

I personally have seen the difference, in overseas countries, in the respect one receives with a "P .E." after his name. This is because the "Three E" process of the United States is the toughest in the world. Thus a young engineer wishing to enhance his credentials can not do better than licensure as a first step. Ninety-five percent (95%) of United States' graduates change jobs at least once. Those actively pursuing a career in engineering greatly increase their mobility and promotability with licensure. You should feel confident that a licensed professional engineer's credentials will be readily able to withstand the opposition's challenge. The quality of the "Three E" qualification always will survive attack. Engineers, your professional career will definitely be enhanced by licensure and your opinion be respected because you have survived the test of the "Three E's". Those seeking design professionals can rest assured that the licensed engineer is knowledgeable of the codes, standards and proper practice required for a project.

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