

The Texas Board of Professional Engineers and Land Surveyors (Board) proposes amendments to 22 Texas Administrative Code, Chapter 133, regarding the licensing of professional engineers. The proposed amendments are specifically to §133.31, relating to Educational Requirements for Applicants, §133.43, relating to Experience Evaluations, §133.53, relating to Reference Statements, §133.67, relating to Examinations on the Principles and Practice of Engineering, and §133.69, relating to Waiver of Examinations, regarding the licensing of professional engineers. These proposed changes are referred to as "proposed rules."

#### BACKGROUND AND SUMMARY

The rules under 22 Texas Administrative Code, Chapter 133 implement Texas Occupations Code, Chapter 1001, the Texas Engineering Practice Act. The proposed rules address the Board's ability to evaluate education credentials, consider experience of applicants, how the experience is verified by references, how applicants take exams, and qualifications needed to waive exams.

#### SECTION-BY-SECTION SUMMARY

The proposed rules amend §133.31 to remove language that is no longer used by the Board when evaluating education credentials of applicants. The proposed rule also includes non-substantive grammatical changes to the rule title.

The proposed rules amend §133.43 to clarify when a year of experience credit may be granted for post-baccalaureate degree. The proposed rules clarify that experience gained as part of an undergraduate or graduate education is not able to be used for experience credit. The proposed rules clarify that a calendar period claimed as surveying experience cannot also be claimed for engineering experience. Companion amendments to Chapter 134 establish proposed rules to clarify that a calendar period claimed as engineering experience cannot also be claimed as surveying experience.

The proposed rules amend §133.53 to expand the manner the Board can receive reference statements. The practice of only accepting reference statements that have been sealed in an envelope with a signature across the flap is not the only way to convey the statements securely. The proposed language is broad to allow different forms of transmittal, especially electronically (via email or electronically uploading the document to a secure location).

The proposed rules amend §133.67 to expand the manner applicants are qualified to take exams. The proposed rules remove a limitation on the maximum number of exams applicants may take and allow applicants who are approved to take the Principles and Practice of Engineering exam the ability to take the exam until passing. Companion amendments to Chapter 134 establish the same criteria for surveyors taking the Principles and Practice of Surveying exam.

The proposed rules amend §133.69 to clarify the requirements applicants must meet to waive the Principles and Practice of Engineering exam.

## FISCAL IMPACT ON STATE AND LOCAL GOVERNMENT

Mr. Rick Strong, P.E., Director of Licensing and Registration for the Board, has determined that for each year of the first five years the proposed rules are in effect, there are no estimated additional costs or reductions in costs to state or local government as a result of enforcing or administering the proposed rules.

Mr. Strong has determined that for each year of the first five years the proposed rules are in effect, there is no estimated increase or loss in revenue to the state or local government as a result of enforcing or administering the proposed rules.

## LOCAL EMPLOYMENT IMPACT STATEMENT

Mr. Strong has determined that the proposed rules will not affect the local economy, so the agency is not required to prepare a local employment impact statement under Government Code §2001.022.

## PUBLIC BENEFITS

Mr. Strong has determined that for each year of the first five-year period the proposed rules are in effect, the public benefit will be improved clarity of the rules' language for the public and efficiency of Board operations.

## PROBABLE ECONOMIC COSTS TO PERSONS REQUIRED TO COMPLY WITH PROPOSAL

Mr. Strong has determined that for each year of the first five-year period the proposed rules are in effect, there are no anticipated economic costs to persons who are required to comply with the proposed rules because no new requirements are part of the proposed rules.

## FISCAL IMPACT ON SMALL BUSINESSES, MICRO-BUSINESSES, AND RURAL COMMUNITIES

There will be no adverse effect on small businesses, micro-businesses, or rural communities as a result of the proposed rules. Since the agency has determined that the proposed rules will have no adverse economic effect on small businesses, micro-businesses, or rural communities, preparation of an Economic Impact Statement and a Regulatory Flexibility Analysis, as detailed under Texas Government Code §2006.002, is not required.

## ONE-FOR-ONE REQUIREMENT FOR RULES WITH A FISCAL IMPACT

The proposed rules do not have a fiscal note that imposes a cost on regulated persons, including another state agency, a special district, or a local government. Therefore, the agency is not required to take any further action under Government Code §2001.0045.

## GOVERNMENT GROWTH IMPACT STATEMENT

Pursuant to Government Code §2001.0221, the agency provides the following Government Growth Impact Statement for the proposed rules. For each year of the first five years the proposed rules are in effect, the agency has determined the following:

1. The proposed rules do not create or eliminate a government program.
2. Implementation of the proposed rules do not require the creation of new employee positions or the elimination of existing employee positions.
3. Implementation of the proposed rules do not require an increase or decrease in future legislative appropriations to the agency.
4. The proposed rules do not require an increase or decrease in fees paid to the agency.
5. The proposed rules do not create a new regulation.
6. The proposed rules do not expand, limit, or repeal an existing regulation.
7. The proposed rules do not increase the number of individuals subject to the rule's applicability.
8. The proposed rules do not positively or adversely affect this state's economy.

#### TAKINGS IMPACT ASSESSMENT

The Board has determined that no private real property interests are affected by the proposed rules and the proposed rules do not restrict, limit, or impose a burden on an owner's rights to his or her private real property that would otherwise exist in the absence of government action. As a result, the proposed rules do not constitute a taking or require a takings impact assessment under Government Code §2007.043.

#### ENVIRONMENTAL RULE ANALYSIS

The Board has determined that the proposed rules are not brought with the specific intent to protect the environment or reduce risks to human health from environmental exposure; thus, the Board asserts the proposed rules are not a "major environmental rule," as defined by Government Code §2001.0225. As a result, the Board asserts preparation of an environmental impact analysis, as provided by §2001.0225, is not required.

#### PUBLIC COMMENTS

Any comments or request for a public hearing may be submitted, no later than 30 days after the publication of this notice, to Lance Kinney, Ph.D., P.E., Executive Director, Texas Board of Professional Engineers, 1917 S. Interstate 35, Austin, Texas 78741, faxed to his attention at (512) 440-0417 or sent by email to [rules@pels.texas.gov](mailto:rules@pels.texas.gov).

#### STATUTORY AUTHORITY

The proposed rules are proposed pursuant to Texas Occupations Code §§1001.201 and 1001.202, which authorize the Board to regulate engineering and land surveying and make and enforce all rules and regulations and bylaws consistent with the Act as necessary for the performance of its duties, the governance of its own proceedings, and the regulation of the practices of engineering and land surveying in this state. No other codes, articles, or statutes are affected by this proposal.

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### §133.31. Educational Requirements For Applicants.

(a) Applicants for a license shall have graduated from at least one of the following degree programs or degree program combinations listed in this section:

(1) Approved engineering curriculums under §1001.302(a)(1)(A) of the Act. The following degrees are acceptable to the board for meeting the educational requirements of §1001.302(a)(1)(A) of the Act:

(A) a degree from an engineering program accredited or otherwise approved by:

(i) EAC/ABET;

(ii) Consejo de Acreditacion de la Ensenanza de la Ingenieria, Mexico (Council of Accreditation for Engineering Education, C.A.); or

(iii) The Washington Accord.

(B) A graduate degree in engineering, provided that:

(i) the graduate degree is obtained from a college having an engineering program approved by one of the organizations listed in subparagraph (A) of this paragraph where either the graduate or undergraduate degree in the same discipline is accredited; and

(ii) the combination of the degrees is acceptable to the board as equivalent in EAC/ABET approved curricula content, and the combination of degrees contain sufficient design curricula to provide minimal competency in the use of engineering algorithms and procedures.

(C) a completed degree that has not been accredited or approved by either of the organizations identified in subparagraph (A) of this paragraph but has been evaluated in accordance with §133.33 of this chapter, (relating to Proof of Educational Qualifications-Non-Accredited/Non-Approved Programs), and determined to meet the ABET general and program criteria requirements for an EAC/ABET-accredited or -approved program.

(2) Other programs under §1001.302(a)(1)(B) of the Act. The following degrees are acceptable to the board for meeting the educational requirements of §1001.302(a)(1)(B) of the Act:

(A) a bachelor degree from an engineering technology program that is accredited by the ETAC/ABET;

(B) A bachelors or graduate degree in engineering, engineering technology, mathematical, physical, or related science that has not been accredited or approved by any of the organizations identified in paragraphs (1)(A) or (2)(A) of this subsection but has been obtained from a recognized institution of higher education as defined in Chapter 131 of this title. Such degree programs must include, as a minimum, the courses listed in clauses (i) and (ii) of this subparagraph or these courses must be taken in addition to the bachelor or graduate degree program:

(i) eight semester hours (12 quarter hours) of mathematics beyond trigonometry, including differential and integral calculus; and

(ii) 20 semester hours (30 quarter hours) of related engineering sciences including subjects such as mechanics, thermodynamics, electrical and electronic circuits, and others selected from material sciences, transport phenomena, computer science and comparable subjects depending on the discipline or branch of engineering. Course work should incorporate hands-on laboratory work as described in the EAC/ABET criteria, and shall contain a sufficient design program to provide minimal competency in the use of engineering algorithms and procedures.

(3) Degree programs submitted to the board by the conferring institutions and determined by the board as meeting or exceeding the criteria of either of the accrediting organizations referred to in this section.

(A) The following programs have been reviewed by the board and determined to be eligible for licensure under §1001.302(a)(1)(A) of the Act:

(i) The engineering programs at the University of Texas at Tyler for those who graduated in 1999.

(ii) Biosystems engineering program at the University of Texas A&M at College Station for those who graduated between 1999 and 2003.

(B) The following programs have been reviewed by the board and determined to be eligible for licensure under §1001.302(a)(1)(B) of the Act and eligible for taking the examination on the fundamentals of engineering, effective the date listed:

(i) Tarleton State University, Accepted Programs: Hydrology (1992) and Engineering Physics (2001);

(ii) West Texas State A&M, Accepted Program: Mechanical Engineering (2003).

(b) Degree programs that have not been accredited or approved by any of the organizations identified in subsection (a)(1)(A) or (2)(A) of this section are not acceptable for fulfilling the educational requirements of the Act if they do not meet the definition of a recognized institution of higher learning as defined in Chapter 131 of this title and:

(1) give credit for life experience; or

(2) consist primarily of engineering, mathematical, physical, or engineering sciences courses that are correspondence courses that are self-taught outside a formal classroom setting.

[(c) Applicants who have graduated from a degree program that is accredited by the jurisdictional authority in the Canadian or European community that have been evaluated pursuant to §133.33 of this chapter (relating to Proof of Educational Qualifications/Non-Accredited/Non-Approved Programs) and contain sufficient course hours to meet the requirements of subsection (a)(2)(B) of this section but not found to have sufficient course hours to be deemed equivalent or comparable to a Bachelor of Science degree as would be issued by a recognize institution of higher education in the United States may apply for licensure solely through the examination process.]

(c)[(d)] An applicant holding a verified Canadian P.Eng. or ing. License shall be considered to have academic qualifications substantially equivalent to an accredited engineering program.

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#### §133.43. Experience Evaluation.

(a) The board shall evaluate the nature and quality of the experience found in the supplementary experience record or the NCEES record experience information and shall determine if the work is satisfactory to the board for the purpose of issuing a license to the applicant. The board shall evaluate the supplementary experience record for evidence of the applicant's competency to be placed in responsible charge of engineering work of a similar character.

(1) Engineering work shall be satisfactory to the board and, therefore, considered by the board to be creditable engineering experience for the purpose of licensure if it is of such a nature that its adequate performance requires engineering education, training, or experience. The application of engineering education, training and experience must be demonstrated through the application of the mathematical, physical, and engineering sciences. Such work must be fully described in the supplementary experience record. Satisfactory engineering experience shall include an acceptable combination of design, analysis, implementation, and/or communication experience, including the following types of engineering activities:

(A) design, conceptual design, or conceptual design coordination for engineering works, products or systems;

(B) development or optimization of plans and specifications for engineering works, products, or systems;

(C) analysis, consultation, investigation, evaluation, planning or other related services for engineering works, products, or systems;

- (D) planning the use or alteration of land, water, or other resources;
- (E) engineering for program management and for development of operating and maintenance manuals;
- (F) engineering for construction, or review of construction;
- (G) performance of engineering surveys, studies, or mapping;
- (H) engineering for materials testing and evaluation;
- (I) expert engineering testimony;
- (J) any other work of a mechanical, electrical, electronic, chemical, hydraulic, pneumatic, geotechnical, or thermal nature that requires engineering education, training or experience for its adequate performance; and
- (K) the teaching of engineering subjects by a person who began teaching prior to September 1, 2001.

(2) In the review of engineering experience, the board may consider additional elements including:

- (A) whether the experience was sufficiently complex and diverse, and of an increasing standard of quality and responsibility;
- (B) whether the quality of the engineering work shows minimum technical competency;
- (C) whether the experience was gained in accordance with the provisions of the Act;
- (D) whether the experience was gained in one dominant branch;
- (E) whether non-traditional engineering experience such as sales or military service provides sufficient depth of practice;
- (F) whether short engagements have had an impact upon professional growth;
- (G) whether the applicant intends to practice or offer engineering services in Texas; and
- (H) whether the experience was supplemented by training courses or participation in engineering organizations or societies that contribute to the applicant's competence and readiness for licensure (consistent with the requirements listed in §137.17 of this title (relating to Continuing Education Program)).

(3) Engineering experience may be considered satisfactory for the purpose of licensing provided that:

- (A) the experience is gained during an engagement longer than three months in duration;
- (B) the experience, when taken as a whole, meets the minimum time;

(C) the experience is not anticipated and has actually been gained at the time of application;

(D) the experience includes at least two years of experience in the United States, not including time claimed for educational credit, or otherwise includes experience that would show a familiarity with US codes and engineering practice; and

(E) the time granted for the experience claimed does not exceed the calendar time available for the periods of employment claimed and the calendar time has not been claimed for surveying experience in a surveying application.

(b) Experience credit may be granted for experience gained prior to an applicant's receiving a conferred degree per §133.31 of this chapter (relating to Educational Requirements [Requirement] for Applicants). Effective January 1, 2009, experience gained in this manner is limited to a total of two years, and must:

(1) be substantiated in the supplementary experience record and a reference statement provided for the experience;

(2) be accounted for proportionally to a standard 40-hour work week, if it was part-time employment; and

(3) reflect that, at the time the experience was gained, the applicant had passed junior and/or senior level engineering or related engineering science courses and applied relevant engineering knowledge in the claimed experience.

(c) One year of experience credit may be granted for each post-baccalaureate engineering degree earned by an applicant, provided:

(1) the applicant has a baccalaureate or other post-baccalaureate degree in engineering meeting the requirements of §133.31 (a) (1) of this chapter (concerning Educational Requirements for Applicants); and

(2) the post-baccalaureate degree is from an engineering program where either the graduate or undergraduate degree in the same discipline is accredited or approved by one of the organizations listed in §133.31(a)(1) of this chapter [(concerning Educational Requirements for Applicants)]. Experience credit for all post-baccalaureate degrees is limited to a total of two years.

(d) Engineering Educators applying for a waiver of examinations under §133.69 of this chapter (relating to Waiver of Examinations) will not receive additional experience credit pursuant to subsection (c) of this section.

(e) Experience that has received educational credit or has been gained as part of an education [in conjunction with or in relation to earning a post-baccalaureate degree, such as research or teaching assistant work,] will not be credited as experience [in addition to experience credited pursuant to subsection (c) of this section].



(f) For Engineering Educator applicants applying under §133.25 of this chapter (relating to Applications from Engineering Educators), other acceptable creditable engineering experience may include, but is not limited to, scholarly activity such as publishing papers in technical and professional journals; making technical and professional presentations; publishing books and monographs; performing sponsored research; reporting on research conducted for sponsors; supervising research of undergraduate and graduate students, postdoctoral fellows, or other employees; providing counseling, guidance, and advisement for engineering students; and performing certain other types of formal or informal functions in higher education.

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### §133.53. Reference Statements.

(a) The applicant shall make available to each reference provider, the board's reference statement form and a complete copy of the applicable portion(s) of the supplementary experience record.

(b) Persons providing reference statements verifying an applicant's engineering experience shall:

(1) complete and sign the reference statement in a format prescribed by the board; and

(2) review, evaluate, and sign all applicable portions of the supplementary experience record(s). The reference provider's signature indicates that he has read the supplementary experience record(s), that the record(s) are correct to the best of his knowledge, and that the experience is relevant to licensure. If the reference provider disagrees with or has comments or clarification to the information provided by the applicant, the reference provider should submit written comments or concerns to the board.

(3) for the purposes of this section, a reference statement and associated portions of the applicant's supplementary experience record submitted directly to the board through a secure method prescribed by the board will be considered "signed" as required in this subsection.

(c) The reference provider shall submit to the board both the reference statement and the supplementary experience record.

(d) For any reference statement to meet the requirements of the board, the reference statement must be securely submitted in a manner acceptable to the board-secured. Any tampering of the reference statements by the applicant could result in denial of the application. [For a reference statement to be considered secure, the reference provider shall:]

[(1) place the completed reference statement and reviewed supplementary experience records in an envelope;]

[(2) seal the flap of the envelope;]

[(3) after sealing the envelope, the reference provider shall sign across the sealing edge of the flap of the envelope and cover the signature with transparent tape; and]

[(4) the reference provider shall return the sealed envelope to the applicant or transmit the documents directly to the board.]

(e) Secured reference envelopes shall be submitted to the board by applicant or reference provider.

(f) Reference documents submitted directly to the board by the reference provider in a method prescribed by the board will meet the requirements of subsection (d) of this section.

(g) Evidence of retaliation by an applicant against a person who provides reference material for an application may be considered in the application process as described in §133.81 of this chapter (relating to Receipt of Applications).

(h) The NCEES record reference documentation may be accepted as reference statements as specified in this section.

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§133.67. Examination on the Principles and Practice of Engineering.

(a) The examination on the principles and practice of engineering is open only to licensed engineers who wish to take the examination for record purposes and to applicants who have received board approval to take it. Applicants who are granted certification as an Engineer-in-Training in accordance with §133.1 of this chapter (relating to Engineer-in-Training Designation) or submit equivalent qualifications at the time of application for licensure shall be approved to take the examination on the principles and practice of engineering.

(b) An applicant approved to take the examination on the principles and practice of engineering:

(1) shall be advised of the date he or she is eligible.

(2) shall schedule to test in any area of competency appropriate to his or her experience or education.

(3) shall be solely responsible for timely scheduling for the examination and any payment of examination fees.

[(4) shall have no more than three examination attempts within a four year period starting with the date of the first exam taken by the applicant. No extensions shall be granted except as

provided for in §133.61(i) of this chapter (relating to Engineering Examinations Required for a License to Practice as a Professional Engineer).]

[(5) shall have no more than three attempts for each component if taking the Structural Engineering examination and must receive acceptable results for all components of the exam within a four year period starting with the date of the first exam taken by the applicant.]

[(6) shall have no more than eight years from the date of approval to complete the allowed exam attempts.]

[(c) For the purposes of this section, exam attempt means a unique administration of an examination or exam component of any discipline for which attendance is documented.]

[(d) An applicant who does not pass the examination on the principles and practice of engineering within the approved examination period described in subsection (b) of this section is considered not approved and may not re-apply for approval until he or she has obtained at least one (1) year of additional engineering experience as described in Subchapter E of this chapter (relating to Experience) or until the applicant has completed at least six (6) additional semester hours of formal college level classroom courses relevant to the applicant's dominant branch or discipline of experience. The time period to obtain additional engineering experience or enroll in additional college courses commences on the date of the last exam attempt or when the approved examination period expired. Applicants meeting the additional experience or education requirements must apply in accordance with §133.21 of this chapter (relating to Application for Standard License) and receive approval for additional exam attempts.]

[(e)] The examination on the principles and practice of engineering shall be offered according to the schedule determined by the NCEES or by the board.

[(f) Applicants approved to take the examination on the principles and practice of engineering as of August 20, 2020, will have a one year extension to the exam deadline as set out in subsections (b)(4) and (5) of this section.]

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#### §133.69. Waiver Of Examinations.

(a) Examinations are considered an integral part of the licensing process; all applicants are expected to have passed the examinations or to offer sufficient evidence of their qualifications in the absence of passage of the examinations. The board may waive one or both of the examinations on the fundamentals of engineering or the principles and practice of engineering for applicants who:

(1) do not pose a threat to the public health, safety, or welfare;

(2) request a waiver in writing at the time the application is filed; and

(3) meet the requirements of subsections (b) or (c) of this section.

(b) Waiver of Fundamentals of Engineering Examination. Applications for a waiver of the fundamentals of engineering examination will only be accepted from persons who meet the requirements of paragraphs (1) or (2) of this subsection.

(1) Standard Application:

(A) meet the educational requirements of §1001.302(a)(1)(A) of the Act and have eight or more years of creditable engineering experience, as evaluated by the board under §133.43 of this chapter (relating to Experience Evaluation); or

(B) meet the educational requirements of §1001.302(a)(1)(B) of the Act and have twelve or more years of creditable engineering experience, as evaluated by the board under §133.43 of this chapter.

(2) Engineering Educator: meet the requirements of §133.25(a) and (b) of this chapter (relating to Applications from Engineering Educators).

(c) Waiver of Principles and Practice of Engineering Examination. Applications for a waiver of the principles and practice of engineering examination will only be accepted from persons who meet the requirements of this subsection.

(1) Currently Licensed in U.S. State or Territory or Former Standard Texas License Holder: An applicant who is applying for a standard license and is currently licensed and in good standing in any U.S. state or territory, or a former Texas license holder applying under §133.23 of this chapter (relating to Applications from Former Texas License Holders), shall:

(A) meet the educational requirements of §1001.302(a)(1)(A) of the Act and have 12 or more years of creditable engineering experience, two of which must be practicing as a registered or licensed engineer in that U.S. State or Territory, as evaluated by the board under §133.43 of this chapter (relating to Experience Evaluation); or

(B) meet the educational requirements of §1001.302(a)(1)(B) of the Act and have 16 or more years of creditable engineering experience, two of which must be practicing as a registered or licensed engineer in that U.S. State or Territory, as evaluated by the board under §133.43 of this chapter;

(2) Engineering Educator:

(A) meet the requirements of §133.25(a) and §133.25(b)(1) of this chapter (relating to Applications from Engineering Educators) and have:

(i) taught in an EAC/ABET-accredited or -approved program for at least six years and began teaching engineering prior to September 1, 2001;

(ii) at least six years of experience consisting of a combination of EAC/ABET teaching experience or other creditable engineering experience, as evaluated by the board under §133.43 of this chapter and began teaching engineering prior to September 1, 2001; or

(iii) at least four years of creditable engineering experience, as evaluated by the board under §133.43 of this chapter; or

(B) meet the requirements of §133.25(a) and §133.25(b)(2) of this chapter and have:

(i) taught in an EAC/ABET-accredited or -approved program for at least eight years and began teaching engineering prior to September 1, 2001;

(ii) at least eight years of experience consisting of a combination of EAC/ABET teaching experience or other creditable engineering experience, as evaluated by the board under §133.43 of this chapter and began teaching engineering prior to September 1, 2001; or

(iii) at least six years of creditable engineering experience, as evaluated by the board under §133.43 of this chapter.

(d) An applicant is not eligible to request a waiver of the examination on the fundamentals of engineering if the applicant has taken and failed any examination on the fundamentals of engineering in any jurisdiction within the previous two years. An applicant is not eligible to request a waiver of the examination on the fundamentals of engineering if the applicant has taken and failed any examination on the fundamentals of engineering in any jurisdiction three or more times.

(e) An applicant is not eligible to request a waiver of the examination on the principles and practice of engineering if the applicant has taken and failed any examination on the principles and practice of engineering in any jurisdiction within the previous four years.

(f) Applicants requesting a waiver from any examination(s) shall file any additional information needed to substantiate the eligibility for the waiver with the application, as provided in §133.51 of this chapter (relating to Reference Providers), and §133.53 of this chapter (relating to Reference Statements). The board shall review all elements of the application to evaluate waiver request(s) and may grant a waiver(s) to qualified applicants.

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