BRPELS
BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS & LAND SURVEYORS

Structural Committee

August 1, 2024 | 10:00 a.m.

Virtually via Microsoft Teams:
Join the meeting now
Meeting ID: 218 242 160 498
Passcode: SZfnSM
Dial in by phone
+1 564-999-2000,5405530# United States, Olympia
(833) 322-1218,5405530# United States (Toll-free)
Phone conference ID: 540 553 0#

In-person:
Board of Registration for Professional Engineers and Land Surveyors
605 11th Ave SE, Suite 201
Olympia, WA 98501

Committee:	Dave Peden, PE, SE, Chair Marjorie Lund, PE, SE Chun Lau, PE, SE
Support staff:	Ken Fuller, PE, Director Kristina Horton, PLS, Deputy Director Vonna Cramer, Licensing Lead Shanan Gillespie, Regulatory Program Manager Elizabeth Lagerberg, AAG

Discussion topics

- UK MRA – how it applies in higher seismic regions
- Review of Structural Engineer Registration Application
  - Review of application instructions
  - Review of application experience and verification form
- Review RCW 18.43.020 definition of "Significant Structures"
  - Structural engineering portion of 18.43.040, and WAC 196-12-047
- Seismic Experience for Structural Focus PE
  - CA seismic exam
- NCEES SE exam results

Action Items (from June 10, 2024)

- Staff was asked to look at the application instructions and compare language with WAC 196-12-047 for consistency *(completed)*
- Ms. Lund to reach out to Chun Lau to gather information, Mr. Peden to work on clarification language, and staff to gather all previous email responses and create an FAQ. *(in progress)*
- Mr. Peden will start a definition for different types of breadth of experience requested on applications. *(In progress)*

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Structural Engineer Registration Application

Fees *(check one)*:

☐ By General Application (exam or initial license)–**$65**

☐ By Comity (if you have a current SE license)–**$110**

Licenses are available for self-printing with an online account.

If you want us to print and mail your license add a $5 print fee for each copy to your payment.

☐ $0 self-print license online.

☐ $5 each. DOL print and mail license. Quantity_____ Total $_____

Applicant

TYPE or PRINT Name *(As shown on your PE license)*		Washington PE license number
Mailing address		
City	State	ZIP code
Date of birth *(mm/dd/yyyy)*	Social Security number*	
Military? *(check if applicable)* Current or former: ☐ Military member ☐ Military spouse or domestic partner		
(Area code) Phone number	Email	

*You are not required to have a Social Security Number (SSN) or Individual Taxpayer Identification Number (ITIN or TIN) to apply for or be issued a license. If you do not have an SSN or ITIN, leave that section blank. If you do have a SSN, ITIN or TIN, you are required by federal and state law to provide it on the application (42 U.S.C. 666(a)(13) and RCW 74.20A.320).

Current registration (for comity applicants only)

State where SE exam was taken	SE number	Issue date	Expiration date

Experience record summary

should we ask for date?

You must account for all time from when you applied for your Professional Engineer license to now. You must also include periods while unemployed, or non-engineering work. Attach additional sheets if necessary.

- For full time employment of 32 or more hours/week indicate “FT”. For part time under 32 hours/week indicate “PT”.
- If the work is not to be verified, indicate “No.” Any experience not verified will not be counted toward the experience requirement.

any confusion happening with this table?

Employment	Time period *(begin with most recent)* From *(month-year)* To *(month-year)*	Employer	FT or PT	Project to be verified: 1, 2, or 3 (or leave blank)	When a project is listed Name of person verifying your work
1.					
2.					
3.					
4.					
5.					

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Legal background

Answer the following

If you answer "Yes," attach a detailed explanation.

1. Within the last 5 years, in this state or any other jurisdiction, have you had any action (fine, suspension, revocation, censure, surrender, etc.) taken against any professional or occupational license, certification, or permit held by you? . . . . . ☐ Yes ☐ No

2. Within the last 5 years, in this state or any other jurisdiction, have you defaulted, or been convicted of, or entered a plea of no contest to a gross misdemeanor or felony crime? (Don't include traffic convictions) . . . . . ☐ Yes ☐ No

Professional Responsibility

1. Do you attest that you are knowledgeable of the current Washington State Building Codes and/or Bridge Design Manual, and that you will follow all local jurisdictional requirements for your projects? Yes No

Certification

Answer the following

1. Do you authorize any business associates (past and present) and any governmental agencies (local, state, or federal) to release any information, files, or records which may be required for a background investigation, to BRPELS? . . . . . ☐ Yes ☐ No

2. Do you understand that any false information in this application may constitute cause for the denial, suspension, or revocation of your license to practice in the state of Washington? . . . . . ☐ Yes ☐ No

I declare under penalty of perjury under the law of Washington that the foregoing is true and correct.

TYPE or PRINT Name

X

Date and place

Applicant signature

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Structural Engineer Experience and Verification

[redacted]

why some bullet points?

Instructions for applicant

Provide complete explanations to describe the time spent on projects where you developed the knowledge, skills and abilities in the tasks typically performed in structural designs of **significant structures or the structural systems integrated within significant structures**. RCW 18.43.020(12).

Design of these projects must have occurred after you became licensed as a PE in the applicable jurisdiction.

- One sentence descriptions are not acceptable.
- The work should be progressive in difficulty and magnitude; demonstrating sufficient breadth and scope, and be reflective of your ability to design and apply engineering principles where your judgments and decisions are trusted and relied upon.
- The work experience should show two of the four common materials used (steel, concrete, wood, and masonry) as the primary lateral force-resisting system with ductile detailing.
- Qualifying experience consists of structural design experience in:
  1. Determination of lateral/gravity forces —seismic and /or wind
  2. Selection of framing systems
  3. Selection of foundation systems
  4. Application of code requirements with emphasis on seismic provisions and ductile detailing
  5. Multi-story buildings or equivalent multi-level structures or bridges over 200ft
  6. Project leadership and design decision management

your personal design of

and design of the primary

and design

If you only have one licensed structural engineer verifier, submit a written letter explaining why and provide a client for the verifier of one of the projects.

Describe your structural design experience of significant structures or the structural systems integrated within significant structures (RCW 18.43.020(12)) by listing a **minimum of three projects.** The experience projects must be submitted as part of your application with different verifiers where possible. Indicate whether you had full or partial responsibility. Provide detailed information for the following:

- Type of building structure or non-building structure and/or bridge with a total span (end to end) of 200 feet.
- Provide a detailed explanation of how the project incorporates the seismic provisions and ductile detailing requirements for Seismic regions similar to Washington State (SDC C or above or AASHTO Zone 3 or above)

Send the completed work experience descriptions and verification form (pages 1-9) to the persons verifying your engineering experience. Each project must be verified. The verifiers must complete their portion and send it directly from their email address to engineers@brpels.wa.gov

- Experience must be gained under the direct supervision of a licensed structural engineer, or a licensed professional engineer with the authority to practice structural engineering in their jurisdiction.
- For work experience to be accepted as satisfactory, each project must be separate and distinct.
- Missing information or poor explanations of structural experience will delay the review and could result in a denial of your application. Do not assume that there is a universal understanding by reviewers on how your experience satisfies Washington State requirements. **Do not use jargon or acronyms or one-line explanations**

NOTE: All items must be completed for each project listed. Each project must be summarized on the forms provided ("See Attached" is not acceptable). Additional sheets may be added, but not substituted for the form.

this whole section should be on the top of each project page so it goes to the verifiers.

Work experience information–Applicant complete this section

Applicant name	
Employed by	
Dates of employment From To	Total hours worked on project
Verifier name and title	

design of this

could move here

(continued on next page)

Applicant name _____

Work experience descriptions–Applicant complete this section

Project 1: One sentence descriptions are not acceptable

in Washington State

Project description. Location, type, size, and define how this is a significant structure or is similar in design complexity to a significant structure. What was the approximate length of time you worked on this project?
General construction type/project description. Explain how your project meets IBC Seismic Design Category C or above or AASHTO Zone 3. If projects are not in these categories, provide a detailed explanation of how the project incorporates the seismic provisions and ductile detailing requirements associated with a project in SDC D or AASHTO Zone 4.
Primary gravity and Lateral force resisting system. Using two of the common construction materials (steel, concrete, wood, and masonry)
Scope of analysis and design responsibilities. Explain your specific responsibilities in the gravity and lateral forces resisting systems listed above. Explain your level of involvement in seismic analysis and detailing for ductility.

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Structural Documentation roles/responsibilities. Explain your role & responsibilities in the project and the decisions you made. The work should be progressive in difficulty and magnitude; demonstrating sufficient breadth and scope and be reflective of your ability to design and apply engineering principles where your judgments and decisions are trusted and relied upon.

Construction phase responsibilities. Explain your construction phase responsibilities.

(continued on next page)

Applicant name _____

why bold, this is less important than the previous statement

Instructions to person verifying work experience of applicant

The competency of licensed engineers in Washington State is based on education, examination, and experience. You are declaring your knowledge of this applicant's experience and your belief of their readiness to seal construction documents for significant structures. **Verifiers must use full descriptions.**

The applicant should have sent you descriptions for 1 to 3 projects. Please refer to these descriptions for the verification below. After completing your verification, please return the project descriptions and your verification of work experience to engineers@brpels.wa.gov. Your email address must match the email address given below.

Work experience verification–Supervisor/verifier complete this section. **All sections must be completed.**

TYPE or PRINT Name of person completing this verification		Title	
Address			
City		State	ZIP code
(Area code) Phone number	Email address		Project numbers being verified
Professional registration number	Expiration date	State	Branch of engineering

Describe your level of supervision over the applicant's work. Have you personally seen and reviewed the Applicant's structural engineering work? If you are not the applicant's supervisor, please explain your working relationship to the applicant and how you are able to provide this verification.

?

If you are not licensed as a structural engineer in Washington State, please describe your substantial structural experience and the jurisdictions where you have lawfully practiced. If you are not a WA SE and the project was in WA that you are verifying, how are you able to provide this verification?

this sentence is awkward

During this time of employment, how long has the applicant been in a position of making structural engineering judgments and decisions?

years/months

(continued on next page)

Applicant name _____

How does the applicant's descriptions of experience, including the scope and complexity of the work match your evaluation? Describe how the applicant's roles/responsibilities are progressive in difficulty and magnitude; demonstrating sufficient breadth and scope and is reflective of their ability to design and apply engineering principles where their judgments and decisions are trusted and relied upon.
Provide any additional information that will assist in the determination of this applicant's eligibility for licensure as a structural engineer:

I declare that the statements and answers contained in this verification regarding the person named as applicant are true and correct to the best of my knowledge and the statements given regarding myself are true and correct.

_____
TYPE or PRINT Name

_____ **X** _____
Date and place Signature

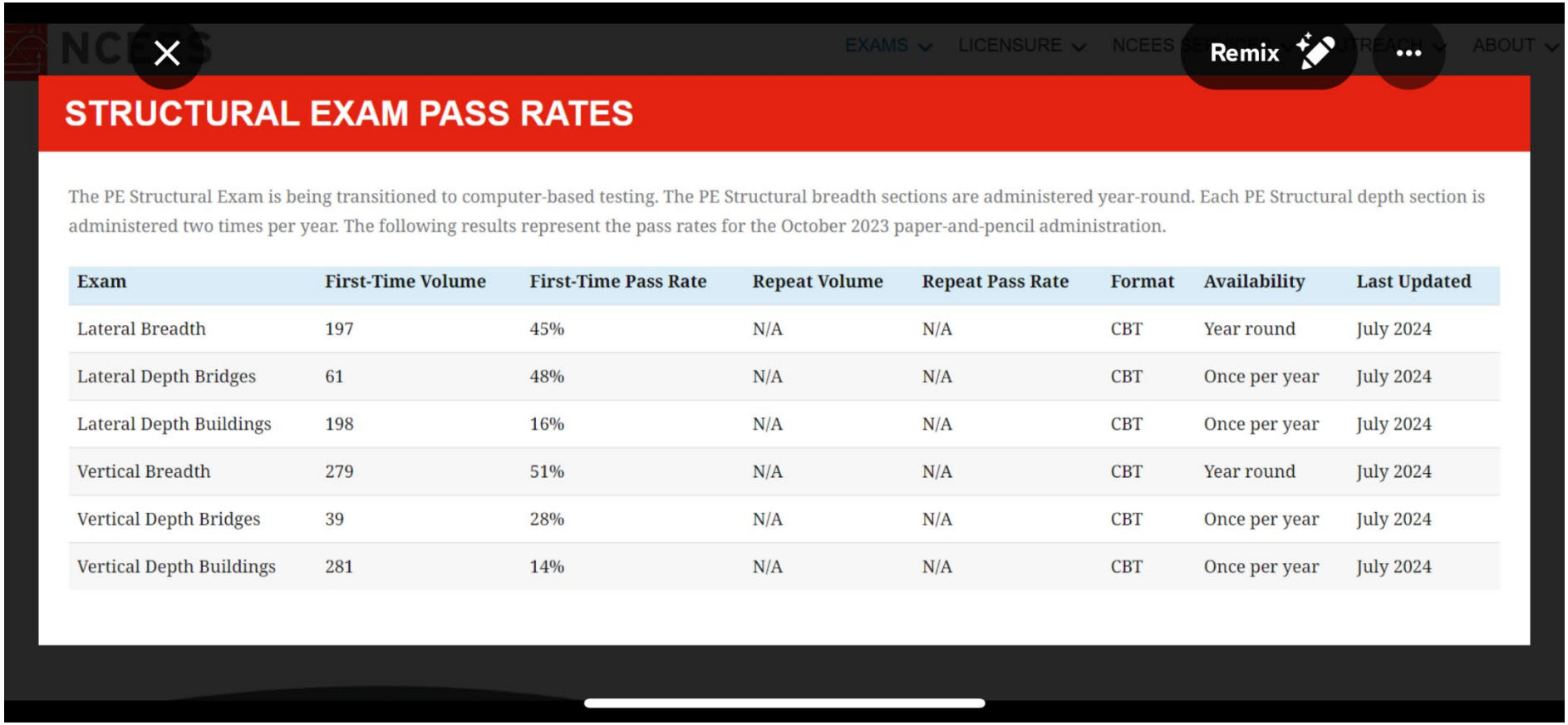
Affix Seal Here

WAC	WAC language	Application instruction language	Verification – Instructions for applicant
196-12-047(1)	Be currently licensed as a professional engineer in Washington state	Have a current Washington State Professional Engineer (PE) license	
196-12-047(2)	Have at least two years of progressive responsibility in structural engineering experience in addition to the eight years of engineering experience required to be registered as a professional engineer.	Demonstrate 2 years of progressive structural design experience in addition to the 8 years of experience required for registration as a professional engineer in Washington State.	
The structural experience should:			
196-12-047(2)(a)	Demonstrate the applicant's ability to design building structures or nonbuilding structures integrated within "significant structures" as defined in RCW **18.43.020**(12)	Provide complete explanations to describe the time spent on projects where you developed the knowledge, skills, and abilities in the tasks typically performed in structural designs including; Significant structures or the structural systems integrated within significant structures. RCW 18.43.020(12)	Provide complete explanations to describe the time spent on projects where you developed the knowledge, skills and abilities in the tasks typically performed in structural designs of **significant structures or the structural systems integrated within significant structures**.
196-12-047(2)(b)	Be progressive in difficulty and magnitude		*The work should be progressive in difficulty and magnitude;
196-12-047(2)(c)	Demonstrate breadth and depth of seismic design and detailing experience for projects in seismic regions similar to those located in Washington state	Provide complete explanations to describe the time spent on projects where you developed the knowledge, skills, and abilities in the tasks typically performed in structural designs including: Detailing requirements for Seismic regions similar to Washington State (International Building Code (IBC) SDC C or above or American Association of State Highway and Transportation Officials (AASHTO) Zone 3 or above)	*demonstrating sufficient breadth and scope, Provide a detailed explanation of how the project incorporates the seismic provisions and ductile detailing requirements for Seismic regions similar to Washington State (SDC C or above or AASHTO Zone 3 or above)

*Verification Instructions, second bullet says “The work should be progressive in difficulty and magnitude; demonstrating sufficient breadth and scope, and be reflective of your ability to design and apply engineering principles where your judgments and decisions are trusted and relied upon.” WAC 196-12-047(2)(b),(c) & (e).

196-12-047(2)(d)	Incorporate two of the four common construction materials (steel, concrete, wood, and masonry)		The work experience should show two of the four common materials used (steel, concrete, wood, and masonry) as the primary lateral force-resisting system with ductile detailing.
196-12-047(2)(e)	Reflect ability to design and apply structural engineering principles that show sound judgment on projects involving public health, safety, and welfare		*and be reflective of your ability to design and apply engineering principles where your judgments and decisions are trusted and relied upon.
196-12-047(2)(f)	Be supervised by a licensed professional engineer in the branch of structural engineering or a licensed professional engineer with substantial structural engineering work experience for projects in seismic regions similar to those located in Washington state		Experience must be gained under the direct supervision of a licensed structural engineer, or a licensed professional engineer with the authority to practice structural engineering in their jurisdiction.
			Qualifying experience consists of structural design experience in: 1. Determination of lateral/gravity forces — seismic and /or wind 2. Selection of framing systems 3. Selection of foundation systems 4. Application of code requirements with emphasis on seismic provisions and ductile detailing 5. Multi-story buildings or equivalent multi-level structures or bridges over 200ft

*Verification Instructions, second bullet says “The work should be progressive in difficulty and magnitude; demonstrating sufficient breadth and scope, and be reflective of your ability to design and apply engineering principles where your judgments and decisions are trusted and relied upon.” WAC 196-12-047(2)(b),(c) & (e).



STRUCTURAL EXAM PASS RATES

The PE Structural Exam is being transitioned to computer-based testing. The PE Structural breadth sections are administered year-round. Each PE Structural depth section is administered two times per year. The following results represent the pass rates for the October 2023 paper-and-pencil administration.

Exam	First-Time Volume	First-Time Pass Rate	Repeat Volume	Repeat Pass Rate	Format	Availability	Last Updated
Lateral Breadth	197	45%	N/A	N/A	CBT	Year round	July 2024
Lateral Depth Bridges	61	48%	N/A	N/A	CBT	Once per year	July 2024
Lateral Depth Buildings	198	16%	N/A	N/A	CBT	Once per year	July 2024
Vertical Breadth	279	51%	N/A	N/A	CBT	Year round	July 2024
Vertical Depth Bridges	39	28%	N/A	N/A	CBT	Once per year	July 2024
Vertical Depth Buildings	281	14%	N/A	N/A	CBT	Once per year	July 2024