Chapter A–E 5

DESIGNER PERMIT

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Note: Chapter A–E 5 as it existed on February 28, 1987, was repealed and a new chapter A–E 5 was created effective March 1, 1987.

A–E 5.01 Authority and purpose. The rules in this chapter are adopted under authority in ss. 15.08 (5) (b), 227.11 and 443.07, Stats. The purpose of rules in this chapter is to interpret basic experience and examination requirements for obtaining a designer permit as specified in s. 443.07, Stats.

History: Cr. Register, February, 1987, No. 374, eff. 3–1–87.

A–E 5.02 Application for permit. Any applicant who files an application but who does not comply with a request for information related to the application within one year from the date of the request shall file a new application and fee.

Note: Applications are available on the website at dsps.wi.gov or by calling (608) 266 – 2112.

History: Cr. Register, February, 1987, No. 374, eff. 3–1–87; am. Register, January, 1999, No. 517, eff. 2–1–99.

A–E 5.03 General experience requirement. (1) GENERAL. An applicant's experience shall demonstrate that the applicant has a working knowledge of all of the following:

(a) Basic mathematics, physics and mechanics.

(b) Materials and structures.

(c) Administrative codes and other relevant Wisconsin law.

(d) Graphic techniques, including drafting and sketching.

(2) AREAS OF EXPERIENCE. To qualify as satisfactory experience in the design of engineering systems under s. 443.07, Stats., the experience of an applicant for a permit shall be substantially in the field or subfield for which the applicant has applied. Fields and subfield are described in s. A–E 5.06. The experience shall be in areas of design practice designated under subs. (3) and (4), or other areas which, in the opinion of the board, provide the applicant with knowledge or practice at least equivalent to that which is generally acquired by experience in the areas listed. An applicant need not have experience in all areas of practice listed under subs. (3) and (4). However, all applicants shall have experience in those areas listed in sub. (3) (a) and (b). Academic coursework which provides the applicant with knowledge and skills in some of the areas of practice listed under subs. (3) and (4) may be claimed as equivalent to experience.

(3) REQUIRED AREAS OF EXPERIENCE. All applicants shall have experience in the following areas:

(a) *Research and development.* 1. Problem identification, including consideration of alternative approaches to problem solving.

2. Planning, including selecting a theoretical or experimental approach.

3. Execution of plan, including completing design calculations.

4. Interpreting and reporting results.

(b) *Design.* 1. Definition of safety, health and environmental constraints.

2. Selection of materials and components.

3. Production of final designs.

4. Preparation of detailed working drawings.

5. Evaluation of design solution for adherence to laws and codes and obtain approval.

(4) OTHER AREAS OF EXPERIENCE. Qualifying experience includes:

(a) *Other design.* 1. Identification of design objectives.

2. Definition of performance specifications and functional requirements, including materials, energy balances, and environmental considerations.

3. Formulation of conceptual design specifications.

4. Definition of physical properties of all key materials.

5. Preparation of designs, layouts, models and systems diagrams.

6. Preparation of supporting technical information.

7. Preparation of bid documents, including conducting a contract evaluation.

8. Preparation of specifications and data sheets.

9. Interaction with engineers from other areas of work.

10. Consultation with contractors, suppliers and installers.

11. Inspection of purchased equipment and materials for conformity specifications.

(b) *Construction.* 1. Assistance in design implementation during manufacturing or construction.

2. Assistance in design implementation during start up.

3. Revision of design as required including "as built" drawings and specifications.

4. Certification in completing and testing.

5. Provision of field service assistance.

6. Reviewing of completed work.

(c) *Maintenance.* 1. Development of preventive maintenance schedules.

2. Recording of failures, repairs and replacement of equipment.

3. Determination of causes of equipment, structure or schedule failures.

(5) EXPERIENCE LIMITATION. Not more than one year of satisfactory experience may be granted for any calendar year.

History: Cr. Register, February, 1987, No. 374, eff. 3–1–87; am. (2), Register, October, 1991, No. 430, eff. 11–1–91; am. (1) (intro.) to (c), Register, January, 1999, No. 517, eff. 2–1–99.

A–E 5.04 Examination. (1) WRITTEN EXAMINATION FOR DESIGNER OF ENGINEERING SYSTEMS; SCOPE OF EXAMINATION. (a) The written examination in each field and subfield shall include questions and problems applying to the following basic content areas:

1. Basic mathematics, physics and mechanics.

2. Materials and structures.

3. Graphic techniques, including drafting and sketching, reading and interpreting blueprints and preparing specifications.

4. Administrative code and other relevant Wisconsin laws.

(b) The examination for a permit in the field of heating, ventilating and air conditioning systems requires an applicant to demonstrate competency in all of the following:

1. User requirements for maintenance of temperature.

2. Humidity and ventilation systems.

3. Energy sources.

4. Heating, ventilating and air conditioning systems, including ducted, piped, unitary, steam and hot water systems.

5. Manual, electric and pneumatic control systems, including air distribution, heat transfer, energy conservation and air changing systems.

(c) The examination for a permit in the field of plumbing systems requires an applicant to demonstrate competency in all of the following:

1. User requirements for water supply, drainage and disposal, including private septic systems.

2. Gaseous distribution systems, including processing piping, oxygen, air and other gases, heating and utilities.

(d) The examination for a permit in the subfield of private sewage systems as defined in s. 145.01 (12), Stats., requires an applicant to demonstrate competency in:

1. Knowledge of soils;

2. Design of private sewage systems;

3. Applicable administrative code and statutory provisions;

4. Knowledge of applications and reports, including but not limited to soil boring and percolation reports;

5. Mapping skills and interpretation;

6. Knowledge of all systems in the subfield and design of the systems; and

7. Environmental issues.

(e) The examination for a permit in the field of electrical systems requires the applicant to demonstrate competency in all of the following:

1. User requirements for both primary and secondary distribution, illumination, controls and switches and communication systems.

2. Power, including resistance heating, signals and motors.

(f) The examination for a permit in the field of fire protection systems requires the applicant to demonstrate competency in all of the following:

1. User requirements for fire protection of life and property, life safety requirements, methods of fire prevention, wet and dry standpipes, use of fire retardants and fire proof materials.

2. Suppression.

3. Fire characteristics.

4. Smoke.

5. Gases.

(2) REQUIREMENTS FOR ENTRANCE TO EXAMINATIONS. To be eligible to take a written examination for a permit as a designer of engineering systems, an applicant shall have 7 years of approved experience in specialized engineering design work, up to 4 years of which may be equivalent academic training or apprenticeship as provided in s. 443.07 (2), Stats.

(3) APPLICATION FOR EXAMINATION. An application for examination must be filed with the board no later than 2 months before the scheduled date for the examination.

Note: An otherwise qualified applicant with a disability shall be provided with reasonable accommodations.

(4) EXAMINATION AND REFUND FEES. The fee for a designer examination and requirements for refund of fees are specified in s. 440.05, Stats., and ch. SPS 4.

(5) TIME, DATE AND SITE OF EXAMINATIONS. The examinations shall be held at a time, date and site specified by the board.

(6) GRADING OF WRITTEN EXAMINATIONS. The passing scores set by the board represent the minimum competency required to protect public health and safety. An applicant's experience rating is not considered by the board in grading the applicant's written examination.

(7) REEXAMINATION PROCEDURE. An applicant for a designer examination who fails an examination or any part of an examination may retake any part of the examination failed at a regularly–scheduled administration of the examination. If an applicant fails to pass on reexamination of the parts failed, or the current examination parts equivalent to the parts failed, within 4 years from the date of receipt of the results of the first failure of the examination or any part of the examination, the applicant is required to take and pass the entire examination. If the applicant retakes the entire examination, the applicant shall pay the original examination fee under s. 440.05 (1), Stats. The board shall determine which parts of a current examination are equivalent to the examination parts failed by an applicant.

Note: Examination fees are available on the website at dsps.wi.gov or by calling (608) 266 – 2112.

(8) EXAMINATION REVIEW. (a) *One–year limitation.* An applicant for a designer examination may review questions on any part of an examination failed by the applicant within one year from the date of the examination, as specified in s. 443.09 (6), Stats. An applicant may review the examination only once.

(b) *Review procedure.* Failing candidates shall be notified of the procedure to schedule a review of the appropriate examination parts. The applicant may take notes on the examination questions reviewed. No notes may be retained by the applicant following the review. The review may not take place within 30 days prior to a scheduled examination. If the section confirms the failing status following its review, the application shall be deemed incomplete, and the applicant may be reexamined under sub. (7).

Note: Subsection (8) was invalidated by the repeal of s. 443.09 (6), Stats., in 2009 Wis. Act 350 and will be removed in future rule–making by the board.

(9) CHEATING. Any applicant for registration who receives aid or cheats in any other manner in connection with the examination shall be barred from completing the examination or shall not be given a passing grade, or both.

History: Cr. Register, February, 1987, No. 374, eff. 3–1–87; am. (1) (a) (intro.), renum. (1) (d) and (e) to be (1) (e) and (f), cr. (1) (d), Register, October, 1991, No. 430, eff. 11–1–91; am. (7), Register, June, 1994, No. 462, eff. 7–1–94; am. (8) (b), Register, March, 1996, No. 483, eff. 4–1–96; am. (8), Register, October, 1996, No. 490, eff. 11–1–96; am. (1) (a) 1. to 3., (b) (intro.) to 4., (c) (intro.) and 1., (e) (intro.) and 1., (f) (intro.) to 4. and (6), cr. (9), Register, January, 1999, No. 517, eff. 2–1–99; correction in (4) made under s. 13.92 (4) (b) 7., Stats., Register November 2011 No. 671.

A–E 5.05 Application contents. An application shall include all of the following:

(1) Transcripts or apprenticeship records verifying the applicant's education and training.

(2) References from 3 individuals who have personal knowledge of the applicant's work involving the preparation of plans and specifications, one of whom shall be a registered architect, professional engineer or designer.

(3) A chronological history of the applicant's employment.

(4) Any additional data, exhibits or references showing the extent and quality of the applicant's technological experience that may be required by the designer section.

History: Cr. Register, February, 1987, No. 374, eff. 3–1–87; am. (2), Register, October, 1991, No. 430, eff. 11–1–91; am. (1), Register, January, 1993, No. 445, eff. 2–1–93; am. (intro.) to (3), Register, January, 1999, No. 517, eff. 2–1–99.

A–E 5.06 Designer permit limitation. (1) Design services which may be performed by designers are the preparation of plans and specifications, consultation, investigation and evaluation in connection with the preparation of plans and specifications in those fields and subfield set forth in sub. (2).

(2) Permits for the design of engineering systems shall be issued in the following fields and subfield:

(a) The field of heating, ventilation and air conditioning systems.

(b) The field of plumbing systems.

(c) The subfield of private sewage systems.

(d) The field of electrical systems.

(e) The field of fire protection systems.

(3) Permit numbers shall designate the fields or subfield to which permits are restricted.

(4) Designers may not perform design services in those fields or subfield for which they do not hold a permit, unless the designer or building involved is exempt under ss. 443.14 and 443.15, Stats.

(6) (a) A master plumber's license restricted to private sewage systems issued pursuant to s. 145.14, Stats., shall be deemed equivalent to 4 years of approved experience in designing private sewage systems. The mathematics and mechanical science portions of the examination for the subfield of private sewage systems may be waived for an applicant who holds such license. An applicant who does not hold such license shall take the mathematics, mechanical science and practice portions of the examination for the subfield of private sewage systems.

(b) A plumbing design permit in the subfield of private sewage systems shall be limited to the design of septic tanks for private sewage disposal systems, drain fields designed to serve such septic tanks, and the sewer service from the septic tank or sewer extensions from mains to the immediate inside or proposed inside foundation wall of the building.

History: Cr. Register, February, 1987, No. 374, eff. 3–1–87; am. (1), (2) (intro.), (a) and (b), (3) and (4), renum. (2) (c) and (d) to be (2) (d) and (e) and am., cr. (2) (c) and (6), Register, October, 1991, No. 430, eff. 11–1–91; am. (2) (a), (b) and (d), r. (5), Register, January, 1999, No. 517, eff. 2–1–99.