NCEES
advancing licensure for engineers and surveyors

Principles and Practice of Engineering Examination
FIRE PROTECTION Exam Specifications

Effective Beginning April 2027

- The PE Fire Protection exam is computer-based. It is closed book with an electronic reference. Codes and standards applicable to the exam are listed on the last page.
- Examinees have 9.5 hours to complete the exam, which contains 85 questions. The 9.5-hour time includes a tutorial and an optional scheduled break. Examinees work all questions.
- The exam uses both the International System of units (SI) and the U.S. Customary System (USCS).
- The exam is developed with questions that will require a variety of approaches and methodologies, including design, analysis, and application.
- The knowledge areas specified as examples of kinds of knowledge are not exclusive or exhaustive categories.

		Number of Questions
1.	**Fire Protection Analysis**	**10–15**
	A. Performance-based design and fire risk assessment (e.g., process, tools, hazard analysis, failure mode analysis, fire scenarios)	
	B. Fire models (e.g., assumptions, limitations, input data)	
	C. Energy storage systems (e.g., prevention and protection, characteristics, test reports)	
2.	**Fire Science**	**10–15**
	A. Heat transfer (e.g., conduction, convection, radiation)	
	B. Fire chemistry (e.g., combustion reactions, thermophysical properties)	
	C. Fire dynamics (e.g., fire growth, development, size, fuel load, enclosure fires)	
3.	**Smoke Control Systems**	**6–9**
	A. Basis of design (e.g., system types, components, design criteria)	
	B. Calculations (e.g., plumes, venting, pressure, exhaust)	
	C. Inspection, testing, and commissioning	
4.	**Fire Alarm and Signaling Systems**	**8–12**
	A. System selection (e.g., addressable, emergency communication systems, releasing, mass notification systems, emergency responder communication systems)	
	B. Design criteria (e.g., location of devices, system interfaces, sequence of operations)	
	C. Selection of principal components	
	D. Calculations (e.g., voltage drop, battery, notification, detector response)	
5.	**Water-Based Fire Protection Systems**	**12–18**
	A. System Selection (e.g., wet pipe, dry pipe, preaction, deluge, water mist, standpipes, water spray)	
	B. Design criteria (e.g., water supply, densities, pressure requirements, design areas, hose stream)	
	C. Selection of principal components (e.g., sprinklers, fire pumps, water storage, valves)	

D. Calculations (e.g., hydraulics, equipment sizing, supports)

6. Special Hazard Systems **7–11**

A. System selection (e.g., CO_2, inert gas, clean agent, wet and dry chemical, foam, oxygen reduction, ignitable liquid drainage floor assemblies)
B. Design criteria (e.g., system controls, enclosure integrity, agent storage, system parameters, testing)
C. Selection of principal components (e.g., valves, discharge devices, support)
D. Calculations (e.g., LFL, concentrations, flow rates)

7. Passive and Structural Fire Protection **8–12**

A. Building materials (e.g., fire resistance rating, testing, material assessment)
B. Building geometry and compartmentalization
C. Structural fire protection (e.g., fire resistance equivalency, alternate protection approaches, structural fire analysis, char)
D. Protection of openings and penetrations (e.g., dampers, doors, firestopping)

8. Human Behavior and Evacuation **9–14**

A. Prescriptive egress and life safety design concepts (e.g., occupant load calculations, arrangement and sizing, components, egress lighting and illumination, exit signage and pathway marking)
B. Performance-based egress and life safety design concepts (e.g., evacuation time, egress scenario, occupant density)
C. Psychological and physiological response to fire (e.g., tenability, decision making)

NCEES
advancing licensure for engineers and surveyors

NCEES Principles and Practice of Engineering Examination
FIRE PROTECTION Codes and Standards

Effective Beginning April 2027

In addition to the *PE Fire Protection Reference Handbook*, the following codes and standards will be supplied to examinees on exam day as an electronic pdf file in the exam if they are required to answer an exam question. Solutions to exam questions that reference a standard of practice are scored based on this list and the revision year shown. Solutions based on other standards will not receive credit.

NCEES does not sell design standards or printed copies of the NCEES handbook. The NCEES handbook is accessible for free from your MyNCEES account.

NFPA STANDARD	TITLE
11-2024	Standard for Low-, Medium-, and High-Expansion Foam
13-2022	Standard for the Installation of Sprinkler Systems
20-2022	Installation of Stationary Pumps for Fire Protection
30-2024	Flammable and Combustible Liquids Code
72-2022	National Fire Alarm and Signaling Code
92-2024	Standard for Smoke Control
101-2024	Life Safety Code
400-2022	Hazardous Materials Code
855-2023	Standard for the Installation of Stationary Energy Storage Systems
2001-2022	Standard on Clean Agent Fire Extinguishing Systems