



NICET Fire Alarm Systems Level I exam study checklist

Built from the NICET Fire Alarm Systems Level I content outline (dated 18 Dec 2023), exams released from 25 Mar 2024 (read 17 Oct 2026 on NICET's site).

Level I exam: 85 questions in 110 minutes, computer-based.

One line per thing to be able to do, grouped under the three areas NICET lists for Level I. Installation and maintenance carry most of the weight, so start there. Tick a line when you can do it without notes.

Installation

- ☐ Name the parts of a fire alarm system (control unit, initiating devices, notification appliances, power supplies) and what each one does.
- ☐ Tell initiating devices apart (manual pull station, smoke, heat, waterflow) and say where each kind is installed.
- ☐ Describe initiating device, signaling line and notification appliance circuits, and what supervision of each means.
- ☐ Explain Class A and Class B wiring, and what one open or one short does to each.
- ☐ Choose a cable type and conductor size for a run from the job documents.
- ☐ Work safely on a job site: ladders and lifts, lockout, and protecting installed devices from dust and damage.
- ☐ Read plans and device schedules to place, mount and label devices.
- ☐ Terminate and label conductors, and record what you installed.

Maintenance

- ☐ Tell alarm, supervisory and trouble signals apart and say what to do first for each.
- ☐ Narrow down a trouble signal: open circuit, ground fault, missing device or low battery.
- ☐ Test initiating devices and notification appliances, and record the result of each.
- ☐ Check the secondary power supply, and size a battery from standby and alarm currents.
- ☐ Explain how to acknowledge, silence and reset a panel, and why the cause comes before the reset.
- ☐ Say who to tell before a system is taken out of service, and what the records should show.
- ☐ Tell a nuisance alarm from a false alarm and name common causes of each.

Submittal Preparation and System Layout

- ☐ Say what a submittal package holds: drawings, equipment data sheets and calculations.
- ☐ Read a floor plan, a riser diagram and a symbol legend, and match each symbol to a device.
- ☐ Place devices on a plan using the spacing your design documents give.
- ☐ Work a voltage drop and a battery calculation for a submittal.

Formulas to work by hand

L is one-way length in feet and r is one conductor's resistance in ohms per 1,000 ft. Currents are in amps, time in hours.

Notification circuit voltage drop

$$R_{loop} = 2 \times L \times r / 1,000$$

$$\text{drop} = I \times R_{loop}; \text{voltage at the last appliance} = \text{supply voltage} - \text{drop}$$

Battery amp-hours

$$\text{base Ah} = \text{standby current} \times \text{standby hours} + \text{alarm current} \times (\text{alarm minutes} / 60)$$

$$\text{with a margin of } m \text{ percent: } \text{Ah} \times (1 + m / 100); \text{ then pick the next battery size up that the panel allows}$$

Formulas as worked in our fire alarm voltage drop and battery guides, which cite System Sensor's installation instructions, NBS Handbook 100 and a Fire-Lite panel manual. The duty periods and any required factors come from the code edition you are tested on: look them up there.

Check your numbers

[Voltage drop calculator: alarmladder.com/tools/fire-alarm-voltage-drop-calculator](https://alarmladder.com/tools/fire-alarm-voltage-drop-calculator)

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[Battery calculator: alarmladder.com/tools/fire-alarm-battery-calculator](https://alarmladder.com/tools/fire-alarm-battery-calculator)

[Wire size calculator: alarmladder.com/tools/fire-alarm-wire-size-calculator](https://alarmladder.com/tools/fire-alarm-wire-size-calculator)

[Circuit class drill: alarmladder.com/tools/fire-alarm-circuit-class-drill](https://alarmladder.com/tools/fire-alarm-circuit-class-drill)

[Fire alarm symbols quiz: alarmladder.com/tools/fire-alarm-symbols-quiz](https://alarmladder.com/tools/fire-alarm-symbols-quiz)

Read next

[NICET Fire Alarm Level I exam guide: alarmladder.com/guides/nicet-fire-alarm-level-1-exam](https://alarmladder.com/guides/nicet-fire-alarm-level-1-exam)

[Voltage drop formula guide: alarmladder.com/guides/fire-alarm-voltage-drop-formula](https://alarmladder.com/guides/fire-alarm-voltage-drop-formula)

[Battery calculation guide: alarmladder.com/guides/fire-alarm-battery-calculation-method](https://alarmladder.com/guides/fire-alarm-battery-calculation-method)

[Testing and maintenance guide: alarmladder.com/guides/testing-and-maintenance](https://alarmladder.com/guides/testing-and-maintenance)

[Submittals and layout guide: alarmladder.com/guides/submittals-and-layout](https://alarmladder.com/guides/submittals-and-layout)

How to use this checklist

- Take the free 10-question check first and start with the area it shows as weakest.
- Work each formula by hand, then check the answer with the matching calculator.
- The exam is open book: for each line, practice finding the answer in your own copy of the code.

Ready to test yourself? 10 free NICET Fire Alarm Level I questions

Find your weakest topic in minutes. Every answer is explained as you go, and there is no signup.

[Take the free check: alarmladder.com/nicet-fa-1](https://alarmladder.com/nicet-fa-1)

[Level I course: \\$99. Lessons, practice exams and a study plan.](#)