NICET Fire Alarm Systems Level II exam study checklist

Built from the NICET Fire Alarm Systems Level II content outline (dated 18 Dec 2023), exams released from 25 Mar 2024 (read 17 Oct 2026 on NICET's site).
Level II exam: 110 questions in 155 minutes, computer-based at a Pearson VUE test center. Open book: the fire alarm code and the electrical code on NICET's list are on screen, the building code is not, so bring it in print if you want it. A basic and scientific calculator is built in.

One line per thing to be able to do, grouped under the four areas NICET lists for Level II. Installation and maintenance carry the most weight, so start there, but give management and supervision its own session: Level I has no such area. Tick a line when you can do it without notes.

Installation

- ☐ Compare the approved drawings with the routing and equipment locations on site, and name what needs clarifying before work goes on.
- ☐ Choose pathways, cable types and supports for a run from the job documents.
- ☐ Follow an input through the control equipment to its intended output, and find the maker's connection instructions.
- ☐ Describe how to install, address and label devices and appliances.
- ☐ Plan a commissioning sequence and say what records it leaves.
- ☐ Explain Class A and Class B pathways and what a single fault does to each.

Maintenance

- ☐ Set out the testing steps for each kind of initiating device and notification appliance.
- ☐ Find the cause of a trouble, supervisory or ground fault signal, and fix it.
- ☐ Show that a repaired function works afterward, and not only that the defect is gone.
- ☐ Keep a service record: symptom, observations, corrective action and result.
- ☐ Say who to tell before a system goes out of service and when it is back.

Submittal Preparation and System Layout

- ☐ Gather project information and survey the conditions that affect the design.
- ☐ Read a floor plan, a riser diagram and a device schedule, and reconcile them.
- ☐ Prepare a layout with device spacing, circuit assignments and pathways.
- ☐ List loads by supply and operating state, and work the standby battery size.
- ☐ Work the voltage at the last appliance on a notification circuit.
- ☐ Say where each load figure came from and which equipment supplies it.

Management and Supervision

- ☐ Write a work sequence that shows access needs, trades, testing and handover.
- ☐ Say who is responsible for what at handover.
- ☐ Tie a coordination plan to the installation or maintenance task it supports.

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

Rloop = 2 x L x r / 1,000
drop = I x Rloop; voltage at the last appliance = supply voltage - drop

Battery amp-hours

base Ah = standby current x standby hours + alarm current x (alarm minutes / 60)
with a margin of m percent: Ah x (1 + m / 100); then pick the next battery size up that the panel allows

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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

Battery calculator: alarmladder.com/tools/fire-alarm-battery-calculator
Voltage drop calculator: alarmladder.com/tools/fire-alarm-voltage-drop-calculator
Level II lookup drill: alarmladder.com/tools/nicet-fa2-lookup-drill
Circuit class drill: alarmladder.com/tools/fire-alarm-circuit-class-drill
Study plan by exam date: alarmladder.com/tools/nicet-study-plan

Read next

NICET Fire Alarm Level II exam guide: alarmladder.com/guides/nicet-fire-alarm-level-2-exam
Battery calculation guide: alarmladder.com/guides/fire-alarm-battery-calculation-method
Voltage drop formula guide: alarmladder.com/guides/fire-alarm-voltage-drop-formula
Submittals and layout guide: alarmladder.com/guides/submittals-and-layout
Testing and maintenance guide: alarmladder.com/guides/testing-and-maintenance

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 the code books you will have.

Ready to test yourself? 10 free NICET Fire Alarm Level II 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-2

Level II course: $149. Lessons, practice exams and a study plan.

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