

CANADIAN ELECTRICAL CODE

SUBJECT: Section 32 - Fire Alarm Systems, Fire Pumps and Carbon Monoxide Alarms

Rule 32-110 Installation of Smoke Alarms and Carbon Monoxide Alarms in Dwelling Units

The Alberta Building Code sets the requirements for the location of smoke alarms within dwelling units. Consequently, electrical installations are required to include provisions for smoke alarms, including their interconnection, on each floor level of a dwelling unit, including basements. Where more than one smoke alarm is installed in a residence, the Alberta Building Code requires that they must be interconnected.

Where a smoke alarm circuit in a combustible building is supplied from a Class 2 power supply, the interconnection of the smoke alarms is permitted to be an approved Class 2 wiring method. However, extra-low-voltage control cable (such as Type LVT, rated 30 V maximum) is not permitted to enter boxes, fittings or enclosures containing conductors connected to circuits of a higher voltage.

Regular residential smoke detectors normally require a 120V connection from a 15A circuit. Rule 32-100 requires that the conductors be of copper with an ampacity adequate to carry the maximum current provided by the circuit; therefore #14 AWG or larger.

Interconnection of Smoke Alarms with Carbon Monoxide Detectors

Some manufactures supply smoke alarms and carbon monoxide detectors that can be interconnected. Although the Canadian Electrical Code does not specifically address this practice, the installation may be permitted provided certain precautions are taken:

1. Each device is approved.
2. Each device is suitable for interconnection with each other (consult manufacturers' literature for each device).
3. Each device is installed according to rule 32-110 and the manufacturers' instructions.

Fire Pumps

Definition of Fire Pump

All pumping equipment used in sprinkler and hose and standpipe systems that are required by the Alberta Building Code to either boost the pressure or pump from a standing water source are considered to be “fire pumps”. This includes pumps used at various levels in high rise buildings, but does not include maintenance pumps (jockey or makeup).

Rule 32-204 Service Box for Fire Pumps

When separate supply services are installed for fire pumps, the installation should be coordinated with the electric utility concerned.

For further information pertaining to the electrical installation of fire pumps, reference should be made to the current Alberta Building Code which references NFPA Standard #20 Centrifugal Fire Pumps.