

NFPA 72-1999 National Fire Alarm Code®

Summary of electrical requirement review completed 1/12/02

Chapter 1 Fundamentals of Fire Alarm Systems

~~1-1 Scope~~

~~1-2 Purpose~~

1-3 General

1-3.3 Reference to NFPA 70.

1-4 Definitions

Labeled.

Listed.

Maintenance.

1-5 Fundamentals

1-5.1.2 Equipment to be listed for its purpose.

1-5.1.3 Fire alarm system designer qualifications and identification.

1-5.1.4 Qualified supervision of system installation with examples.

1-5.2.2 Power supplies installed IAW requirements of NFPA 70.

1-5.2.3 Power sources IAW NFPA 70 700, 701, 702.

1-5.2.5.1 Light & power service.

1-5.2.5.2 Dedicated branch circuit, protected, & identified (red).

1-5.2.5.3 Overcurrent protection NEC 230-84(4).

1-5.2.5.4 FACP not to share power with lighting or elevators.

1-5.2.9.1 Storage batteries NEC 480.

1-5.2.9.3 Storage battery overcurrent protection.

1-5.5.1 Allowed variation from nameplate voltage.

1-5.5.2.2 Device installation requirements.

1-5.5.2.4 Points to limits in 1-5.5.1.

1-5.5.3 Follow NEC 800.

1-5.5.4 Wiring IAW NEC 760, 770, & 800.

1-5.5.5 System shall be free of grounds except ...

~~1-6 Documentation~~

Chapter 2 Initiating Devices

2-1 Introduction

2-1.3.2 Devices supported independent of the connection to circuit.

2-1.3.3 Devices installed IAW NEC (readily accessible).

2-1.3.4 Duplicate terminals, connectors, or leads except ...

~~2-2 Heat Sensing Fire Detectors~~

~~2-3 Smoke Sensing Fire Detectors~~

~~2-4 Radiant Energy Sensing Fire Detectors~~

~~2-5 Other Fire Detectors~~

~~2-6 Sprinkler Waterflow Alarm Initiating Devices~~

~~2-7 Detection of the Operation of Other Automatic Extinguishing Systems~~

~~2-8 Manually Actuated Alarm Initiating Devices~~

~~2-9 Supervisory Signal Initiating Devices~~

~~2-10 Smoke Detectors for Control of Smoke Spread~~

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Chapter 3 Protected Premises Fire Alarm Systems

~~3-1 Scope~~

~~3-2 General~~

~~3-3 Applications~~

3-4 System Performance and Integrity.

3-4.2.2.2 Exception 1(b) 2-hour rated cable assembly NEC 760.

~~3-5 Performance of Initiating Device Circuits (IDC)~~

~~3-6 Performance of Signaling Line Circuits (SLC)~~

~~3-7 Performance of Notification Appliance Circuits (NAC)~~

3-8 System Requirements

3-8.1.1 Electrical interconnection using listed devices and methods.

3-8.4.1.1.4(1) 2-hour rated cable assembly.

3-8.4.1.3.3.3(3b) 2-hour rated cable assembly.

3-9 Protected Premises Fire Safety Functions

3-9.2.1 Listed relay installed within 3 ft. of controlled device or ckt.

3-9.2.3 Interconnection IAW NEC 760.

~~3-10 Special Requirements for Low-Power Radio (Wireless) Systems~~

Chapter 4 Notification Appliances

~~4-1 Scope~~

4-2 General

4-2.1.2 Nameplate requirements and volt-drop calculations.

4-2.2 Physical construction, listed for application.

4-2.4 Mounted independent of attachment to circuit conductors.

4-2.5 Terminals or leads provided for connection.

~~4-3 Audible Characteristics~~

~~4-4 Visible Characteristics, Public Mode~~

~~4-5 Visible Characteristics, Private Mode~~

~~4-6 Supplementary Visible Signaling Method~~

~~4-7 Textual Audible Appliances~~

~~4-8 Textual Visible Appliances~~

Chapter 5 Supervising Station Fire Alarm Systems

~~5-1 Scope~~

~~5-2 Fire Alarm Systems for Central Station Service~~

~~5-3 Proprietary Supervising Station Systems~~

~~5-4 Remote Supervising Station Fire Alarm Systems~~

5-5 Comm. Methods for Supervising Station Fire Alarm Systems

5-5.2.2.2 Radio receivers installed IAW NEC 810.

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Chapter 6 Public Fire Alarm Reporting Systems

~~6-1 Public Fire Alarm Reporting systems~~

~~6-2 General Fundamentals~~

~~6-3 Management and Maintenance~~

~~6-4 Equipment and Installation~~

6-5 Publicly Accessible Fire Service Boxes (Street Boxes)

6-5.10 Street boxes grounded IAW NEC 250.

6-5.11 Street boxes inside connected via EMT IAW NEC Ch. 3.

~~6-6 Location~~

~~6-7 Power Supply~~

6-8 Requirements for Metallic Systems & Metallic Interconnections

6-8.1.4 Public box inside connected via EMT IAW NEC Ch. 3.

6-8.2.1.1.2 Interior cables installed IAW NEC.

6-8.2.1.2 Paper or pressed pulp insulation shall not be permitted.

6-8.2.1.5 Signaling wire able to introduce a hazard follow NEC 760.

6-8.2.1.6 Cable insulation at least 200 M-ohm per mile.

6-8.2.4.2 Leads to box have 600v insulation rated for wet location.

6-8.2.5.2 Conductors in buildings shall be in conduit IAW NEC.

6-8.2.5.3 Conductors have flame retardant moisture resistant insul.

6-8.2.5.4 Splices only in listed enclosures IAW NEC.

6-8.2.5.5 Riser conductors shall be flame retardant.

6-8.2.5.8 Signal conductors separate from light & power by 2".

6-9 Facilities for Signal Transmission

6-9.1.4 Prot. of comm. ckts, surge suppressors, lightning arresters.

6-9.1.4.1.3 Surge suppressors connected to ground IAW NEC.

6-9.1.4.1.4 Fuses rated over 2 amps shall be of the enclosed type.

6-9.1.4.1.6 Each aerial cond. entering fire stn has lightning arrestor

6-9.1.4.2.1 All conductors entering comm. ctr protected.

6-9.1.4.3 Protection on aerial construction.

~~6-10 Power~~

~~6-11 Receiving Equipment – Facilities for Receipt of Box Alarms~~

6-12 Remote Receiving Equipment – Facilities for Receipt for Box Alarms at a Remote Communications Center

6-12 All equipment installed IAW NEC.

~~6-13 Coded Wired Reporting Systems~~

6-14 Coded Radio Reporting Systems

6-14.3 Antenna lead in EMT IAW NEC ch. 3.

~~6-15 Telephone (Series) Reporting Systems~~

6-16 Auxiliary Fire Alarm Systems

A-6-16.4.1(b) Shunt type restrictions.

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Chapter 7 Inspection, Testing, and Maintenance

7-1 General

7-1.2.2 Qualification requirements of technicians.

~~7-2 Test Methods~~

~~7-3 Inspection and Testing Frequencies~~

~~7-4 Maintenance~~

~~7-5 Records~~

Chapter 8 Fire Warning Equipment for Dwelling Units

~~8-1 Primary Function~~

~~8-2 Optional Functions~~

~~8-3 Reliability~~

~~8-4 Performance Criteria~~