



# **Examination Standard for Smoke Actuated Detectors for Automatic Alarm Signaling**

**Class Number 3230**

**June 2020**

---

# Foreword

This standard is intended to verify that the products and services described will meet stated conditions of performance, safety and quality useful to the ends of property conservation. The purpose of this standard is to present the criteria for certification of various types of products and services.

Examination in accordance with this standard shall demonstrate compliance and verify that quality control in manufacturing shall ensure a consistent and reliable product.

# TABLE OF CONTENTS

<b>1 INTRODUCTION .....</b>	<b>1</b>
1.1 Purpose.....	1
1.2 Scope.....	1
1.3 Basis for Requirements .....	1
1.4 Basis for Certification.....	1
1.5 Basis for Continued Certification .....	1
1.6 Effective Date .....	2
1.7 System of Units.....	2
1.8 Normative References.....	2
1.9 Definitions .....	2
<b>2 GENERAL INFORMATION.....</b>	<b>4</b>
2.1 Product Information.....	4
2.2 Certification Application Requirements .....	4
2.3 Requirements for Samples for Examination .....	4
<b>3 GENERAL REQUIREMENTS.....</b>	<b>5</b>
3.1 Review of Documentation .....	5
3.2 Physical or Structural Features .....	5
3.3 Markings .....	5
3.4 Manufacturer's Installation and Operation Instructions .....	6
3.5 Calibration .....	6
<b>4 PERFORMANCE REQUIREMENTS.....</b>	<b>7</b>
4.1 Normal Ambient Conditions.....	7
4.2 Open Area Detector .....	7
4.3 Duct Detector.....	7
4.4 Aspirating Detector.....	7
4.5 Smoke Detectors for Freezer Applications .....	10
4.6 Additional Tests.....	10
<b>5 OPERATIONS REQUIREMENTS .....</b>	<b>11</b>
5.1 Demonstrated Quality Control Program .....	11
5.2 Surveillance Audit .....	11
5.3 Manufacturer's Responsibilities.....	12
5.4 Manufacturing and Production Tests .....	12
<b>APPENDIX A: SMOKE ROOM ASPIRATING PIPE INSTALLATION .....</b>	<b>13</b>
<b>APPENDIX B: DUCT ASPIRATING PIPE INSTALL .....</b>	<b>16</b>
<b>APPENDIX C: POLYURETHANE FOAM SMOKE GENERATION.....</b>	<b>17</b>
<b>APPENDIX D: RED OAK SMOKE GENERATION .....</b>	<b>18</b>
<b>APPENDIX E: COTTON WICK SMOKE GENERATION (PARAFIN OIL SMOKE MAY BE SUBSTITUTED) .....</b>	<b>19</b>
<b>APPENDIX F: APPARATUS FOR ASPIRATING DETECTOR SENSITIVITY MEASUREMENTS .....</b>	<b>20</b>

# 1 INTRODUCTION

## 1.1 Purpose

- 1.1.1 This standard states testing and certification requirements for smoke actuated detectors for automatic alarm signaling.

## 1.2 Scope

- 1.2.1 This standard applies to any spot type smoke and beam type detector intended to be employed in indoor locations in accordance with the National Fire Alarm Code, NFPA 72, and ANSI/UL 268.
- 1.2.2 This standard applies to any duct type smoke detector intended to be employed in indoor locations in accordance with the National Fire Alarm Code, NFPA 72, and ANSI/UL 268A.
- 1.2.3 This standard applies to any aspirating type smoke detector intended to be employed in indoor locations in accordance with the National Fire Alarm Code, NFPA 72.
- 1.2.4 This standard specifically does not apply to video based smoke detector systems.

## 1.3 Basis for Requirements

- 1.3.1 The requirements of this standard are based on experience, research and testing, and/or the standards of other organizations. The advice of manufacturers, users, trade associations, jurisdictions and/or loss control specialists was also considered.
- 1.3.2 The requirements of this standard reflect tests and practices used to examine characteristics of smoke actuated detectors for automatic alarm signaling for the purpose of obtaining certification. Smoke actuated detectors for automatic alarm signaling having characteristics not anticipated by this standard may be certified if performance equal, or superior, to that required by this standard is demonstrated.

## 1.4 Basis for Certification

Certification is based upon satisfactory evaluation of the product and the manufacturer in the following major areas:

- 1.4.1 Examination and tests on production samples shall be performed to evaluate:
- the performance of the product as specified by the manufacturer and required for certification; and as far as practical,
  - the durability and reliability of the product.
- 1.4.2 An examination of the manufacturing facilities and audit of quality control procedures may be made to evaluate the manufacturer's ability to consistently produce the product which is examined and tested, and the marking procedures used to identify the product. Subsequent surveillance may be required by the agency in accordance with the certification scheme to ensure ongoing compliance.

## 1.5 Basis for Continued Certification

The basis for continual certification may include, but is not limited to, the following based upon the certification scheme and requirements of the certification agency:

- production or availability of the product as currently certified;
- the continued use of acceptable quality assurance procedures;