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# **Examination Standard for Carbon Dioxide Extinguishing Systems**

**Class Number 5420**

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# 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 examination 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.

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## 1. INTRODUCTION

### 1.1 Purpose

- 1.1.1 This standard states testing and certification requirements for fixed fire extinguishing systems which use carbon dioxide (CO<sub>2</sub>) as the extinguishant.
- 1.1.2 Testing and certification criteria may include performance requirements, marking requirements, examination of manufacturing facility(ies), audit of quality assurance procedures, and a surveillance program.

### 1.2 Scope

- 1.2.1 CO<sub>2</sub> systems are classed in two general categories according to hazard coverage design, total flooding or local application. Either type shall be designed for automatic and manual control to protect single or multiple hazard areas.
- 1.2.2 A basic CO<sub>2</sub> extinguishing system comprises one or more agent supply containers; discharge control valves arranged for automatic (or both automatic and manual) control; lock-out valves; piping; and discharge nozzles. Compatible certified detectors and detection and release controls are required for automatic operation of these systems, but are not included in the scope of this standard.
- 1.2.3 This standard requires the examination of complete systems. Complete systems shall be submitted along with design, installation, operation, and maintenance instructions for certification. However, the manufacturer may, at any time, submit additional separate component parts or auxiliary equipment for use on the system. Purchased devices such as thermostats, releases, and timers must also be submitted by the system manufacturer for evaluation as a part of the system, even though such devices may already be certified and listed by a certification agency.

### 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 CO<sub>2</sub> fire extinguishing systems (hereinafter referred to as "systems") for the purpose of obtaining certification. Systems 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 suitability of the product
  - the performance of the product as specified by the manufacturer and required for certification;
  - the durability and reliability of the product.
- 1.4.2 An examination of the manufacturing facility and audit of quality control procedures may be conducted to evaluate the manufacturer's ability to produce the product which is examined and tested, and the marking procedures used to identify the product. Subsequent surveillance may be required by the certification agency in