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Guide to Understanding Smoke Control Systems

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Foreword

This guide is intended to offer a general understanding of smoke control systems to individuals who have a need or desire for solid basic information, but who do not need the in-depth knowledge necessary to design smoke control systems.

Proposed or recommended revisions should be submitted to:

NEMA Technical Operations Department
National Electrical Manufacturers Association
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About the National Electrical Manufacturers Association (NEMA):

Founded in 1926 and headquartered near Washington, D.C., NEMA represents 325 member companies that manufacture products used in the generation, transmission and distribution, control, and end use of electricity. These products are used in utility, industrial, commercial, institutional, and residential applications. The association's Medical Imaging & Technology Alliance (MITA) Division represents manufacturers of cutting-edge medical diagnostic imaging equipment, including MRI, CT, x-ray, and ultrasound products. Worldwide sales of NEMA-scope products exceed $140 billion.

About the NEMA Fire, Life Safety, Security and Emergency Communication Section:

The objective of the section is to be the principal source of technical, training, and educational materials essential for the specification and manufacture of reliable life safety products, their installation, performance, inspection, and maintenance.

The section currently represents 17 manufacturers in support of the automatic fire detection and alarm industry and the healthcare communications industry. Fire detection and alarm products include life safety/fire alarm systems and devices that provide early warning of an impending or actual fire, heat, or gaseous hazard. The products detect, notify, and initiate control functions in case of hazard to life or property.

For more information on NEMA and the Fire, Life Safety, Security and Emergency Communication Section, go to http://www.nema.org/Products/Pages/Signaling-Protection-and-Communications.aspx or http://www.lifefiresafety.org.

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Section 1
General

1.1 Scope

This guide covers activation, operation, and testing requirements for smoke control systems in all types of buildings.

1.2 Purpose

This document was developed to provide readers with an understanding of the purpose and general operational requirements for smoke control systems and to allow the reader to identify appropriate test methods based on the specific design objectives of each system. It should also provide an understanding of how smoke control systems deliver the reliability necessary for a life safety system, using an approach that is different from what readers might be familiar with from other types of life safety systems.

1.3 Standards That Apply

Several important documents define the requirements concerning performance, application, and installation of smoke control systems:

National Fire Protection Association (NFPA)
1 Batterymarch Park
Quincy, MA 02169

NFPA 92	*Standard for Smoke Control Systems,* 2021

Underwriters Laboratories Inc. (UL)
333 Pfingsten Road
Northbrook, IL 60062

UL 864	*Standard for Control Units and Accessories for Fire Alarm Systems*, 10th edition

International Code Council (ICC)
200 Massachusetts Ave, NW
Suite 250, Washington, DC 20001

International Building Code, 2021