Medical Gas and Vacuum Systems Handbook

THIRD EDITION

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With extracts from Chapters 1 through 5, Chapter 15, and Annexes A and B of the 2018 edition of NFPA® 99, *Health Care Facilities Code*



NATIONAL FIRE PROTECTION ASSOCIATION

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Preface

This third edition of the *Medical Gas and Vacuum Systems Handbook* gives readers specific information about the medical gas and vacuum requirements of NFPA 99, *Health Care Facilities Code*, along with accompanying explanatory material. The handbook is developed to provide a convenient reference for persons responsible for installing, designing, verifying, or maintaining medical gas and vacuum systems.

As health care delivery continues to change, it is no longer useful to look at the occupancies in which health care is delivered to determine the types of medical gas and vacuum systems that are applicable. Many procedures that were once performed only in hospitals are now performed in doctor's offices, clinics, nursing homes, and other types of occupancies. Because of this, the 2012 edition of NFPA 99 transformed the document from occupancy-based to a risk-based code and the 2018 edition continues to build on that approach. To determine the type of protection needed for a medical gas system, one must first determine the risk to the patient, regardless of occupancy. This handbook provides information from NFPA 99 to those in the field as they navigate these and other issues.

NFPA 99 is generally accepted as one of the most widely used standards on best-practice requirements for the installation and use of equipment and on the daily operation of medical gas and vacuum systems in health care facilities. The *Medical Gas and Vacuum Systems Handbook* extracts pertinent information from NFPA 99 on medical gases and vacuum systems and consolidates it in a concise handy reference. While these extracts should prove highly useful, they are not intended to be a substitute for the full text of NFPA 99, which should always be consulted to ensure full understanding of and compliance with the code.

In addition to the extracted provisions of NFPA 99, this handbook provides ancillary artwork and explanation in the form of commentary. The explanatory material, which represents the views of the editor and contributors, is not intended to change or modify the code. In any dispute between the commentary and the code, the code prevails.

For the reader's convenience, this handbook contains two parts: Part One covers important code material from the first five chapters and Chapter 15 of NFPA 99, and Part Two contains three supplements that provide additional information, but are not part of NFPA 99. Supplement 1 provides information on qualifications for personnel and general brazing procedures. Supplement 2 provides information on cleaning for oxygen service and preparing joints for brazing. Supplement 3 covers installation testing and documentation.

The gas and vacuum system portions of NFPA 99 were previously collected in a separate publication, NFPA 99C, *Gas and Vacuum Systems*, which is no longer published. NFPA sought to recognize NFPA 99C's unique audience by creating a handbook that provides relevant portions of NFPA 99 and other useful information for professionals concerned with medical gas and vacuum systems. Hopefully users will find this handbook to be a valuable reference tool.

The purpose of this handbook is to provide the user with insight as to why the code requirements are included and how compliance with them can be achieved. NFPA 99 is developed by experts representing the many varying interest categories involved with medical gas and vacuum systems. The better the requirements of the code are understood, applied, and enforced, the better protected patients, caregivers, and visitors will be in health care facilities.

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