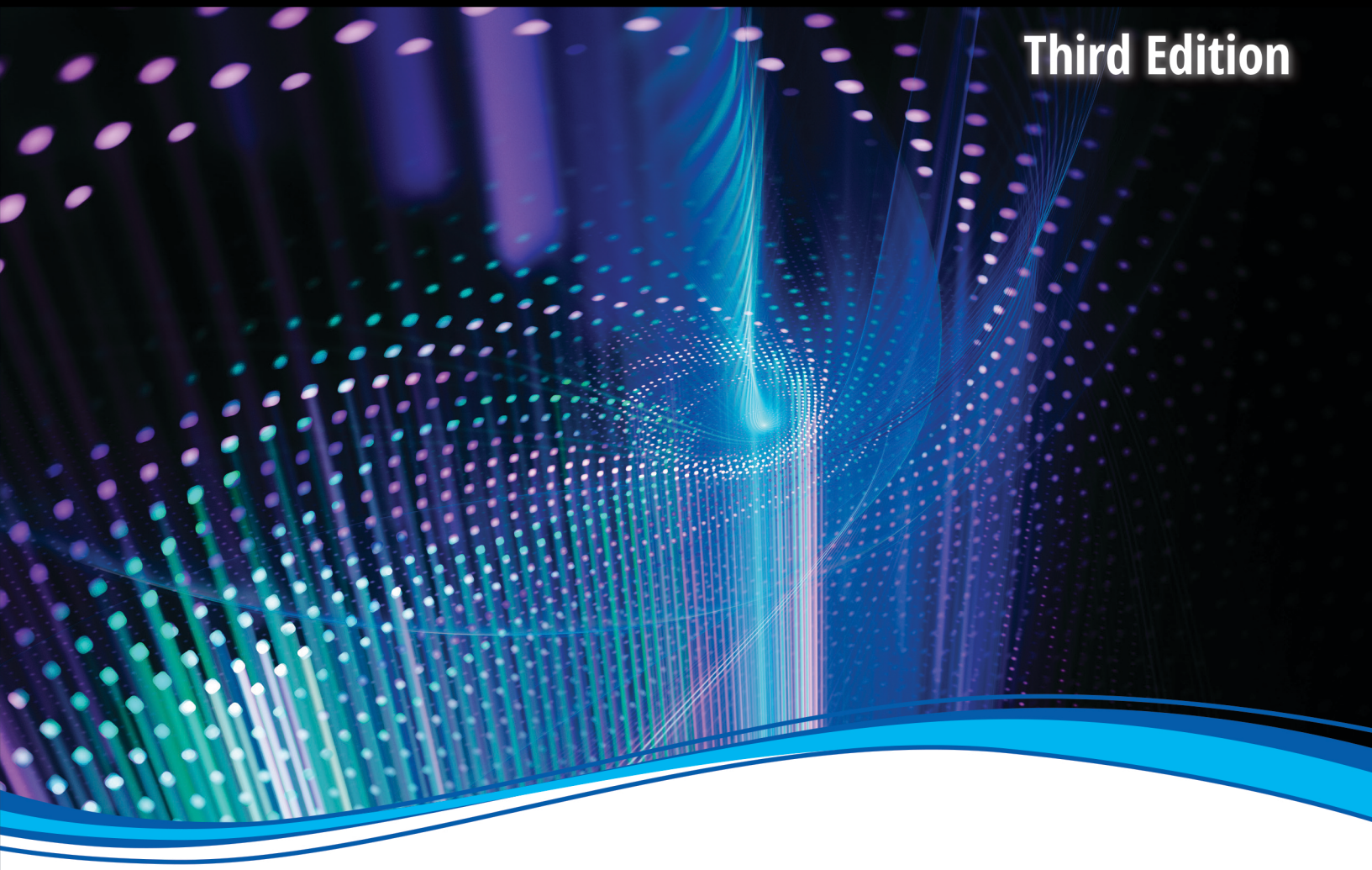
Manual of Water Supply Practices

M23

PVC Pipe—
Design and Installation



Third Edition

American Water Works Association

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Manual of Water Supply Practices—M23, Third Edition

PVC Pipe—Design and Installation

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Preface

This is the third edition of AWWA M23, *PVC Pipe—Design and Installation*. This manual provides the user with both general and technical information to aid in design, procurement, installation, and maintenance of PVC pipe and fittings.

This manual presents a discussion of recommended practices. It is not intended to be a technical commentary on AWWA standards that apply to PVC pipe, fittings, and related appurtenances.

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Chapter 1

General Properties of Polyvinyl Chloride Pipe

Polyvinyl chloride (PVC)* was discovered in the late nineteenth century. Scientists at that time found the new plastic material unusual in that it appeared nearly inert to most chemicals. However, it was soon discovered that the material was resistant to change, and it was concluded that the material could not be easily formed or processed into usable applications.

In the 1920s, scientific curiosity again brought PVC to public attention. In Europe and America, extended efforts eventually brought PVC plastics to the modern world. Technology, worldwide and particularly in Germany, slowly evolved for the use of PVC in its unplasticized, rigid form, which today is used in the production of a great many extruded and molded products. In the mid-1930s, German scientists and engineers developed and produced limited quantities of PVC pipe. Some PVC pipe installed at that time continues to provide satisfactory service today. Molecularly oriented polyvinyl chloride (PVCO) pressure pipe has been installed in Europe since the early 1970s and in North America since 1991. Fusible PVC pipe has been installed in North America since 2004.

MATERIAL PROPERTIES OF PVC PIPE COMPOUNDS

Polyvinyl chloride pipe and fabricated fittings derive properties and characteristics from the properties of their raw material components. Essentially, PVC pipe and fabricated

* Unless otherwise noted in this manual, "polyvinyl chloride pipe" or "PVC" refers to PVC bell-and-spigot pipe and PVC fusible pipe; "PVCO" refers to molecularly oriented PVC pipe.

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