

Concrete Pressure Pipe

AWWA MANUAL M9

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**American Water Works
Association**

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Chapter 1

Purpose and Scope

The use of concrete pressure pipe for conveying water and other liquids under pressure has dramatically increased in recent years. Its rugged construction and the natural corrosion resistance provided by embedment of the ferrous components in concrete or cement mortar offer the design engineer solutions to a wide range of structural and environmental problems (Figure 1-1).

The manufacture of four basic types of concrete pressure pipe are covered by the following American Water Works Association (AWWA) standards:

ANSI/AWWA C300 Standard for Reinforced Concrete Pressure Pipe,
Steel-Cylinder Type

ANSI/AWWA C301 Standard for Prestressed Concrete Pressure Pipe,
Steel-Cylinder Type



Figure 1-1 A typical installation in rugged terrain

ANSI/AWWA C302 Standard for Reinforced Concrete Pressure Pipe,
Noncylinder Type

ANSI/AWWA C303 Standard for Concrete Pressure Pipe, Bar-Wrapped,
Steel-Cylinder Type

Preparing pipeline project plans and specifications, however, requires many pipe-related decisions that are not covered by the respective AWWA standards.

This manual provides supplemental information to assist engineers and designers in achieving optimum field performance of concrete pressure pipelines. Information and guidelines are provided covering hydraulics, surge pressure, external loads, bedding, and backfilling; designing reinforced concrete pressure pipe, fittings and appurtenances, thrust restraints, pipe on piers, and subaqueous installations; design considerations for corrosive environments; transportation of pipe; trench and tunnel installation; and other pertinent subjects.

The information in this manual is not intended to supersede, nor should be regarded as superseding, any portion of any AWWA standard.

NOTE: This manual uses US customary units of measurement. Metric equivalents have been added where deemed appropriate.