

AS 1464.1-2—1984

Australian Standard[®]

**PLASTICS PIPES AND FITTINGS
FOR GAS RETICULATION—
UNPLASTICIZED PVC (UPVC)**

**Part 1—PIPES
Part 2—FITTINGS**

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The following interests are represented on Committee PL/25:

Australian Gas Association
Confederation of Australian Industry
Department of Minerals and Energy, Victoria
Department of Mines, Queensland
Federated Master Plumbers of Australia
Plastics Institute of Australia Inc.
State Energy Commission of Western Australia

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PREFACE

This edition of this standard was prepared by the Association's Committee on Plastics Pipe and Fittings for Gas Reticulation to supersede AS 1464—1974. It sets out dimensional and performance requirements for UPVC pipes and fittings for use in gas reticulation systems. It also takes into consideration specific requirements of the gas industry in respect to terminology and gas pressure classification.

In this standard, pipes and fittings are designated by a nominal size as shown in Table 2.1. Designated sizes are not exact dimensions.

The standard classifies pipe as Type 1—Unmodified UPVC Class 100, and Type 2—Modified (improved impact) UPVC Class 100, for use underground with pressures up to 100 kPa and temperatures up to 40°C. New developments have taken place since the publication of the 1974 edition and an additional type has now been included, viz Type 3—Modified (high ductility) UPVC Class 100 and 450. Class 100 is for use with pressures up to 100 kPa and Class 450 for pressures up to 450 kPa, with temperatures up to 40°C.

It has been recognized that in the low pressure application, long-term hoop stress could no longer be used as the basis of design. Hoop stresses developed in the pipe wall due to internal pressure are quite low, and the predominant design consideration relates to the higher safety factors required by the industry because of the hazardous nature of the material conveyed.

The committee recognizes the need for test(s) of fracture toughness properties of UPVC to assess the likelihood of propagation failure during pressure testing and slow crack growth from notches occurring in the system. However there does not appear to be any positive relationship between resistance to these two forms of failure and further work is necessary to formulate suitable test(s).

A minimum wall thickness of 1.6 mm has been specified in this standard, but the dimensions are otherwise based on those established in AS 1477 for UPVC pipes and fittings for pressure applications.

Because permeability of UPVC to methane is negligible, no requirement for the determination of methane permeability has been included in the standard.

Polyethylene pipes and fittings for gas reticulation are specified in AS 1667, Plastics Pipes and Fittings for Gas Reticulation—Polyethylene—Nominal Size Series*, and AS, Plastics Pipes and Fittings for Gas Reticulation—Polyethylene—ISO Outside Diameter Series†.

* Under revision.

† In course of preparation.

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