AS 2896—1991

Australian Standard®

Medical gas systems—Installation and testing of non-flammable medical gas pipeline systems

STANDARDS AUSTRALIA

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Association of Consulting Engineers, Australia
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Department of Community Services and Health
Department of Health, N.S.W.
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PREFACE

This Standard was prepared by the Standards Australia Committee on Medical Gases and Pipeline Services to supersede AS 2896—1986.

This Standard differs from the 1986 edition in that guidelines for fixed secondary equipment such as pendants and columns are now included, Appendix A has been modified, Figures 1.1, 1.2 and 1.3 have been amended, Table 4.1 has been altered and the use of UPVC pipes for vacuum has been excluded.

In medical establishments it is vital that high safety standards are maintained and also that there is no risk of failure of supply or plant without adequate warning. Thus particular attention is given in this Standard to the following:

(a) Design of equipment to ensure non-interchangeability between services.

(b) Use of correct materials, and cleanness of materials.

(c) Reserve supplies of gas and reserve plant.

(d) Warning systems for gas failure.

(e) Testing and commissioning of pipelines, in particular to detect cross-connections.

(f) Identification of pipelines.

Requirements in this Standard may be used as a guide for piping systems for other non-flammable medical gases and anaesthetic gas scavenging systems but variations in the requirements may be necessary. This Standard will be revised should such a gas come into general use.

Non-flammable medical gas pipeline systems are installed according to all national and local codes and regulations such as building, electrical and safety codes. It should be noted that for installation of a pipeline, a high quality of workmanship and experience is essential. For certain situations, e.g. hyperbaric conditions, special design and performance criteria for pipelines may be required.

Requirements for suction systems are included in this Standard. At this time there are two techniques widely used, namely pipeline vacuum and venturi ejector suction. Each has its particular advantages. This Standard and AS 2120 specify performance and safety aspects to which both should conform. Requirements for a reasonable reserve performance are incorporated in relevant sections of this Standard; further allowances should not be necessary, unless it is intended to extend the pipeline in question in the future. With regard to anaesthetic gas scavenging, currently available evidence suggests that there is no special hazard associated with venting of waste anaesthetic gases into a central suction system.

Many systems in use do not comply with the intent of Clause 3.5 on terminal units. Because the gas specific component of some terminal units can be removed, these units can become a hazard to patients. To obviate this risk it is recommended that panels with multiple terminal outlets be upgraded within 12 months of publication of this Standard, to the intent of Clause 3.5. It is recognized that replacement of single terminal outlet panels is less urgent because of the smaller risk.

A sleeve indexed fitting is given in Figure 3.3 for surgical tool gas. This connection is recommended as it contains a thread, and therefore by its design has a controlled detachment and reduces the risk of 'hose whip'. The use of adaptors with 'quick connect/disconnect' (Schrader) fittings is not advisable.

In the preparation of this Standard, cognizance was taken of ISO 7396—1987, *Non-flammable medical gas pipeline systems*.

CONTENTS