1-198
Superseded by AS 1687 - 1991.
Under revision see DR 88138

AS 1687—1981
UDC 614.846.1

Australian Standard 1687—1981

KNAPSACK SPRAY PUMPS FOR FIRE FIGHTING

[Title allocated by Defence Cataloguing Authority—
Sprayer Knapsack (Fire fighting)]

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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL ORGANIZATIONS and departments were officially represented on the committee entrusted with the preparation of this standard:

Commonwealth Fire Board

Confederation of Australian Industry

Department of Defence

Fire brigades

Forestry Commission of N.S.W.

Forests Commission, Victoria

Telecom Australia

This standard, prepared by Committee BD/18/6, Knapsack Spray Pumps, was approved on behalf of the Council of the Standards Association of Australia on 31 March 1981, and was published on 1 July 1981.

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AUSTRALIAN STANDARD

KNAPSACK SPRAY PUMPS FOR FIRE FIGHTING

AS 1687—1981

First issued (as AS A73) 1966
Revised and issued as AS 1687 1974
Second edition 1981

PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA
STANDARDS HOUSE, 80 ARTHUR ST, NORTH SYDNEY, N.S.W.

ISBN 0 7262 2246 1

2 JUL 1981

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PREFACE

This edition of this standard was prepared by the Association's Committee on Knapsack Spray Pumps.

In preparing this edition, the committee gave consideration to the problem of ultraviolet degradation of plastics.

There is at present no accelerated weathering test which can be applied to plastics to determine actual behaviour in service. Although work is proceeding in this area, the accelerated tests which are available can only be used for comparison purposes and may have no relation to the degradation which could be experienced in the field.

For this reason, a UV degradation test has not been included. Because of the range of UV stabilizers available and the problems of nominating a quantity of any specific stabilizer, it was not possible to specify the amount or type of UV stabilizer which would result in a satisfactory performance. The committee is aware of this shortcoming in the standard and will keep the matter under review.

The performance test with the nozzle in the jet position has been redrafted to clarify the intent.

This standard requires reference to the following standards:

AS 1722	Pipe Threads of Whitworth Form Part 2—Fastening Pipe Threads
AS 2001	Methods of Test for Textiles 2001.2.3—Part 2—Physical Tests—Determination of Breaking Load and Extension of Textile Fabrics
BS 5119	General Purpose Rubber Water Hoses

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
KNAPSACK SPRAY PUMPS FOR FIRE FIGHTING

1 SCOPE. This standard specifies requirements for hand-operated knapsack spray pumps of the rigid water-container type for fire fighting. It specifies the materials and construction details of the container and pump and includes a standard test for the appliance.

NOTE: For specific directives regarding the use of this standard by the Department of Defence, see Appendix A.

2 DEFINITION. For the purpose of this standard, the following definition applies:

Knapsack spray pump—an appliance comprising a rigid water container for carriage on a person's back to which is attached a hand-operated pump fitted with a short hose and nozzle.

3 CAPACITY OF CONTAINER. The capacity of the container shall be not more than 22 L.

4 MATERIALS.

4.1 Metal Container. A metal container shall be constructed of sheet brass or other approved corrosion-resistant material not less than 0.5 mm thick.

4.2 Plastics Container. A plastics container shall be moulded from a high density polyethylene or other plastics material with strength, thermal resistance, flammability and ageing characteristics at least equal to high density polyethylene. The plastics material shall incorporate a suitable ultraviolet stabilizer.

NOTE: Acceptable UV stabilization is performance equivalent to the inclusion of 2 percent carbon black in polyethylene.

5 CONSTRUCTION OF CONTAINER.

5.1 General. A metal or plastics container shall be suitably shaped so as to provide adequate comfort when carried on the back, and shall be designed to stand in an upright position without support.

5.2 Metal Container.

5.2.1 *Seams.* The seams of the container shall be made mechanically secure and watertight and shall be constructed by one of the following methods:

(a) The top seam shall be flanged and sweated.

(b) The side seam shall be lock-jointed and sweated, or welded.

(c) The bottom seam shall be welded, or riveted and sweated.

5.2.2 *Baffle.* Where required by the purchaser, the container shall be fitted with a baffle along the short axis of the container with adequate clearance at the top and bottom. The baffle shall be of sheet metal, of the same material as the container and not less than 0.9 mm thick.

5.2.3 *Bottom of container.* The container shall be provided with a skirt projecting not less than 25 mm below the bottom of the container. The skirt shall be not less than 0.9 mm thick.

5.2.4 *Filler opening.* A filler opening not less than 100 mm in diameter shall be fitted to the top of the container. The joint between the neck of the filler opening and the top shall be mechanically secure and watertight. If the neck of the filler fitment extends into the tank, two drain holes, each not less than 3 mm in diameter, shall be drilled in the neck immediately below the neck joint with the top of the tank.

5.2.5 *Lid.* The filler opening shall be fitted with a quick-action lid which will make an effective water-seal and which can be easily removed with one hand. The lid shall be securely attached to the container by a connection having a minimum breaking strength of 50 N.

An air vent shall be provided in the lid.

5.2.6 *Hose connection.* The hose connection and fittings shall be of brass, gunmetal or stainless steel.

The hose connection shall be fixed in the container in a position that corresponds to the lay of the hose in service. The connection shall project not more than 15 mm beyond the external profile of the container. The method of attachment of the connection to the container shall be such as will give a mechanically secure and watertight joint.

The location of the connection in the container shall be such as will provide a clearance of not less than 5 mm and not more than 15 mm between the bottom of the container and the outlet strainer (see Clause 7.1).

A threaded hose connection shall be internally screwed with a G¼/8 thread complying with AS 1722, Part 2.

5.3 Plastics Container.

5.3.1 *Filler opening.* A filler opening not less than 100 mm in diameter shall be located at the top of the container and shall be integral with the top.

5.3.2 *Lid.* The filler opening shall be fitted with a quick-action lid which will make an effective water-seal and which can be easily removed with one hand. The lid shall be securely attached to the container by a connection having a minimum breaking strength of 50 N.

An air vent shall be provided in the lid.

5.3.3 *Hose connection.* The hose connection and fittings shall be of brass, gunmetal or stainless steel.

The hose connection shall be fixed in the container in a position that corresponds to the lay of the hose in service. The connection shall project not more than 15 mm beyond the external profile of the container. The method of attachment of the connection shall be such as will give a mechanically secure and watertight joint.

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