

<sup>Dup.</sup>  
Superseded by AS 2117-1991

AS 2117—1983  
UDC 621.643.3-036.4:665.6/.7

# Australian Standard 2117—1983

---

## HOSE AND HOSE ASSEMBLIES FOR PETROLEUM AND PETROLEUM PRODUCTS— SUCTION AND DISCHARGE



---

**STANDARDS ASSOCIATION OF AUSTRALIA**  
*Incorporated by Royal Charter*



This Australian standard was prepared by Committee RU/1. It was approved on behalf of the Council of the Standards Association of Australia on 30 August 1983 and published on 7 October 1983.

---

The following interests are represented on Committee RU/1:

Australian Gas Association  
Australian Institute of Petroleum Limited  
Confederation of Australian Industry  
Country Roads Board, Victoria  
Department of Industrial Relations, N.S.W.  
Electricity Trust of South Australia  
Government Stores Department, N.S.W.  
Metropolitan Water, Sewerage and Drainage Board, Sydney  
Plastics Institute of Australia, Incorporated  
Plastics and Rubber Institute  
Railways of Australia Committee  
Society of Automotive Engineers—Australia  
State Electricity Commission of Victoria  
The Institution of the Rubber Industry

---

**Review of Australian Standards.** To keep abreast of progress in industry, Australian standards are subject to periodic review and are kept up-to-date by the issue of amendments or new editions as necessary. It is important therefore that standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all SAA publications will be found in the Annual List of Australian Standards; this information is supplemented each month by SAA's journal 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn standards.

Suggestions for improvements to Australian standards, addressed to the head office of the Association, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian standard should be made without delay in order that the matter may be investigated and appropriate action taken.

**AUSTRALIAN STANDARD**

**HOSE AND HOSE ASSEMBLIES  
FOR PETROLEUM AND  
PETROLEUM PRODUCTS--  
SUCTION AND DISCHARGE**

**AS 2111-1983**

First published .....	1977
Revised .....	1980
Revised .....	1983

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

ISBN 0 7262 3122 3



## PREFACE

This edition of this standard was prepared by the Association's Committee on Industrial Hose to supersede AS 2117—1980. It was prepared in order to rectify an omission in respect of burst requirements and to admit plastics components into the hose.

The standard applies to hoses commonly used for transferring crude oil and liquefied petroleum products (other than LP gas and natural gas) to and from marine tankers and bunkering vessels or for similar duties ashore.

Provision is made for classification according to description, working pressure and use.

The committee took into account requirements specified in—

ISO 1823\* Rubber Hoses for Oil Suction and Discharge

BS 1435 Rubber Hose Assemblies for Oil Suction and Discharge Services

Users of this standard are advised to consult the 'International Oil Tanker and Safety Guide' issued by the Institute of Petroleum, London, which has been widely adopted by the oil industry in Australia as a guide for handling petroleum products.

Appendix A presents purchasing guidelines including contractual requirements and directs attention to matters requiring consideration at the time of the enquiry and/or order. The intention is to avoid misinterpretation or other problems and ensure a complete understanding of product requirements by both purchaser and supplier.

\*Published by the International Organization for Standardization (ISO).

## CONTENTS

	<i>Page</i>
<b>SECTION 1. SCOPE AND GENERAL REQUIREMENTS</b>	
1.1 Scope .....	3
1.2 Application .....	3
1.3 Referenced Documents .....	3
1.4 Classification .....	3
1.5 Materials and Construction .....	4
1.6 Marking .....	4
<b>SECTION 2. PERFORMANCE REQUIREMENTS</b>	
2.1 Resistance to Hydrostatic Pressure (Elongation Test) .....	6
2.2 Hydrostatic Burst Pressure .....	6
2.3 Resistance to Vacuum (Types 1 and 2) .....	6
2.4 Resistance of Lining of Liquids .....	6
2.5 Resistance to Ozone .....	6
2.6 Electrical Properties .....	6
2.7 Flexibility (Types 1, 2 and 3 only) .....	6
2.8 Hose and Coupling Compatibility .....	6
<b>APPENDICES</b>	
A Purchasing Guidelines .....	8
B Determination of Resistance of Hose to Hydrostatic Pressure (Elongation Test) .....	9
C Determination of Flexibility of Hose .....	10

©Copyright — STANDARDS ASSOCIATION OF AUSTRALIA 1983

Users of standards are reminded that copyright subsists in all SAA publications. No part of this publication may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing of the Standards Association of Australia.

## STANDARDS ASSOCIATION OF AUSTRALIA

## Australian Standard

for

## HOSE AND HOSE ASSEMBLIES FOR PETROLEUM AND PETROLEUM PRODUCTS—SUCTION AND DISCHARGE

## SECTION 1. SCOPE AND GENERAL REQUIREMENTS

**1.1 SCOPE.** This standard specifies requirements for hose and hose assemblies for conveying petroleum and petroleum products at product temperatures up to 65°C and in ambient temperatures ranging from -20°C to 65°C.

**1.2 APPLICATION.** This standard is intended for hose applications for transferring liquid petroleum products to and from marine tankers or bunkering vessels or for similar duties ashore.

**1.3 REFERENCED DOCUMENTS.** The following documents are referred to in this standard:

AS 1180	Methods of Test for Hose Made from Elastomeric Materials
1180.1	Dimensions
1180.5A	Hydrostatic Pressure—Burst Test
1180.5B	Hydrostatic Pressure—Proof Test
1180.7A	Resistance of Lining and Cover to Liquids
1180.7F	Resistance of Lining and Cover to Ozone
1180.7J	Resistance to Vacuum
1180.11	Hose and Coupling Compatibility
1180.13A	Determination of Electrical Resistance of Hose and Hose Components
1180.13B	Determination of Electrical Resistance of Hose Assembly
1180.13C	Determination of Electrical Continuity of Hose Assembly with Reinforcing Wire(s)
SAA MP19	Report on Pressure Numbers and Their Use

**1.4 CLASSIFICATION.**

**1.4.1 General.** Hose shall be classified in terms of—

- its type and its class or working pressure as detailed in Clauses 1.4.2 and 1.4.3;
- the grade of its internal surface according to its intended use as detailed in Clause 1.4.4 and
- its electrical kind as detailed in Clause 1.4.5.

**1.4.2 Type.** The type of hose, according to its description, shall be as follows:

*Type Description*

- Heavy duty hose, suction and discharge, for submarine and other offshore use, non-collapsible.
- Hose, suction and discharge, for dockside and onshore use, non-collapsible.

3 Lightweight hose, discharge only, for dockside and onshore use, non-collapsible under normal use.

4 Lightweight hose, discharge only, for dockside and onshore use, collapsible.

**NOTES:**

- The thickness of the cover of a Type 1 hose is commonly twice that of a Type 2 hose. The flanges can be heavy, hot-dip galvanized and the tail-piece can be completely covered right up to the flange.
- Hoses, when derrick-handled, need to be supported in a saddle or cradle to avoid point loading stresses.

**1.4.3 Class.** Hoses shall be classified on the basis of maximum working pressure (WP) in megapascals gauge, i.e. pressure above ambient, as follows:

Class	Working pressure MPa (max.)
A	0.7
B	1.0
C	1.5

**1.4.4 Grade.** The material for the internal surface of the hose shall be selected in accordance with its intended use, designated by a grade number as follows:

*Grade Use*

- For all grades of petroleum and petroleum products having an aromatic hydrocarbon content of 50 percent or less.
- For all grades of petroleum and petroleum products having an aromatic hydrocarbon content greater than 50 percent.
- For specific grades of petroleum products including petrochemicals having the compositions stated by the purchaser. (See Appendix A, Paragraph A3.1(a).)

**1.4.5 Electrical kind.** Hose shall be categorized in accordance with its electrical characteristics as follows:

*Kind Characteristics*

- Conducting. (The integral conductor(s) is the conducting medium. This conductor(s) may also provide reinforcement.) See Clause 2.6.1.
- Intrinsically conducting. (The compound material is the conducting medium.) See Clause 2.6.2.
- Anti-static. (The conductance of the external surface is sufficient to prevent the accumulation of static charges.) See Clause 2.6.3.
- Insulating. See Clause 2.6.4.

NOTE: For each kind, the hose may or may not embody signalling cable(s).