

Australian Standard[®]

**Waterproofing membranes for external
above-ground use**

Part 1: Materials



This Australian Standard® was prepared by Committee BD-013, External waterproofing membranes. It was approved on behalf of the Council of Standards Australia on 2 July 2012. This Standard was published on 14 September 2012.

The following are represented on Committee BD-013:

- Australian Building Codes Board
 - Australian Chamber of Commerce and Industry
 - Australian Institute of Waterproofing
 - Australian Tile Council
 - CSIRO Manufacturing and Infrastructure Technology
 - Housing Industry Association
 - Importers Distributors and Sealants Manufacturers Association of Australia
 - Master Builders Australia
 - South Australian Housing Trust
 - TAFE NSW
-

This Standard was issued in draft form for comment as DR AS 4654.1.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

Keeping Standards up-to-date

Australian Standards® are living documents that reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued.

Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting www.standards.org.au

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

Australian Standard[®]

**Waterproofing membranes for external
above-ground use**

Part 1: Materials

First published as AS 4654.1—2009.
Second edition 2012.

COPYRIGHT

© Standards Australia Limited

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 1 74342 225 0

PREFACE

This Standard was prepared by the Standards Australia Committee BD-013, External Waterproofing Membranes, to supersede AS 4654.1—2009, *Waterproofing membrane systems for exterior use—Above ground level, Part 1: Materials*.

This Standard has been prepared in response to numerous requests from industry representatives in the field of external waterproofing, especially in the areas of roofs, decks and balconies.

The objective of this Standard is to provide a consistent and reliable approach to the materials used in the design and installation of external waterproofing membrane systems.

The objective of this revision is to align this Standard with the protocols and requirements as set out by the Australian Building Codes Board (ABCB).

This Standard is Part 1 of a series of Standards on external waterproofing, as follows:

AS

4654 Waterproofing membrane systems for external above-ground use

4654.1 Part 1: Materials

4654.2 Part 2: Design and installation

The term ‘normative’ has been used in this Standard to define the application of the appendix to which it applies. A ‘normative’ appendix is an integral part of a Standard.

CONTENTS

	<i>Page</i>
FOREWORD.....	4
1.1 SCOPE.....	5
1.2 NORMATIVE REFERENCES	5
1.3 DEFINITIONS.....	5
1.4 MEMBRANE SYSTEMS.....	6
1.5 EXPOSED AND PROTECTED SYSTEMS	7
SECTION 2 TESTING	
2.1 SCOPE OF SECTION	8
2.2 CONFORMANCE CONDITIONS	8
2.3 ABRASION RESISTANCE	8
2.4 BOND STRENGTH TO SUBSTRATE	8
2.5 FIELD SEAM STRENGTH.....	8
2.6 TEMPERATURE RESISTANCE	8
2.7 RESISTANCE TO ULTRAVIOLET LIGHT.....	9
2.8 BIORESISTANCE OF MEMBRANES	9
2.9 ROOT RESISTANCE.....	9
APPENDICES	
A CLASSIFICATION AND PROPERTIES	13
B ASSESSMENT OF RESISTANCE OF WATERPROOFING MEMBRANES TO CYCLIC MOVEMENT	16
BIBLIOGRAPHY.....	18

FOREWORD

This Standard sets out the requirements for materials forming part of a waterproofing system on the surface of building materials, to prevent the ingress of water. These requirements are based on the need to identify suitable criteria for the range of waterproofing materials.

Industry research and experience has shown that the design of roofs, decks, balconies and planter boxes contributes to many of the failures of waterproofing mediums used and, by setting a standard for materials design and installation for construction, the failure rate will be dramatically reduced.

The Australian Standard for the design and installation of waterproofing building elements (such as roofs and similar horizontal surfaces and retaining walls and similar vertical surfaces) was first published in 2009 (AS 4654.1).

STANDARDS AUSTRALIA

Australian Standard

Waterproofing membranes for external above-ground use

Part 1: Materials

1.1 SCOPE

This Standard sets out requirements for waterproofing membranes for external above-ground use, installed in accordance with AS 4654.2.

1.2 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

NOTE: Documents referenced for informative purposes are listed in the Bibliography.

AS	
1145	Determination of tensile properties of plastics materials (all parts)
4654	Waterproofing membranes for external above-ground use
4654.2	Part 2: Design and installation
1580.403.2	Paints and related materials—Methods of test—Abrasion resistance
AS/NZS	
4858	Wet area membranes
ASTM	
C794	Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants
D5602	Standard Test Method for Static Puncture Resistance of Roofing Membrane Specimens
D6207	Standard Test Method for Dimensional Stability of Fabrics to Changes in Humidity and Temperature
E96	Standard Test Methods for Water Vapor Transmission of Materials
BS	
EN 12691	Flexible sheets for waterproofing. Bitumen, plastic and rubber sheets for roof waterproofing. Determination of resistance to impact
EN 12310	Flexible sheets for waterproofing. Determination of resistance to tearing (nail shank)
EN12310-1	Part 1: Bitumen sheets for roof waterproofing
CSIRO	Moving Joint Test

1.3 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

1.3.1 Bioresistance

Resistance to degradation by biological attack.

1.3.2 External waterproofing membrane systems

A combination of membrane-associated products used in membrane installation, such as primers, mechanical fasteners, waste outlets and flashings that form a waterproof barrier.