

ADVISORY NOTICE 01/20

BUILDING

Advisory Notices are issued to assist in the interpretation of the Planning, Development and Infrastructure Act 2016 and the Development Act 1993

April 2020

TECHNICAL:

DAMP-PROOFING MEMBRANE REQUIREMENTS IN SOUTH AUSTRALIA

The purpose of this Notice is to provide information about the damp-proofing membrane requirements that apply in South Australia, the importance of these membranes complying/conforming with the requirements, and the responsibilities of the parties involved in their manufacture, supply and installation.

This Notice will also address concerns raised by the construction sector about an increasing number of non-compliant and non-conforming products.

The importance of damp-proofing membranes

Buildings in South Australia are prone to rising damp and salt attack if they are not adequately protected from moisture rising from the soil below. Protection against such damage is provided through the installation of a damp proofing membranes (DPM), referred to as a vapour barrier in some States and Territories, which are laid on the ground under the concrete slab prior to the slab being poured. **Diagram A** indicates the location of the DPM in a typical slab-on-ground house. Similar products, referred to as damp-proof courses (DPCs) are also installed in walls to prevent moisture rising, however this Notice does not discuss DPC's.

If the damp-proofing products are absent or faulty, moisture can rise through the concrete slab and may have a serious, detrimental effect on the health of the occupants. As the slab becomes heavily loaded with moisture, the damp lower areas of the building can become populated with bacteria. Mould and other micro-organisms flourish in these environments and can cause allergies, asthma and irritation of the throat, eyes and skin.

A faulty DPM can allow moisture to migrate from underneath the concrete slab or from the edge of the slab into the building. If the dampness breaches the DPC in the walls it may also destroy brick work, mortar joints, internal timber walls and footings. Often the first sign of a problem is damp patches on internal carpet or cupped, warped and twisted flooring or floor boards. This is often referred to as slab edge dampness (**Picture A**).

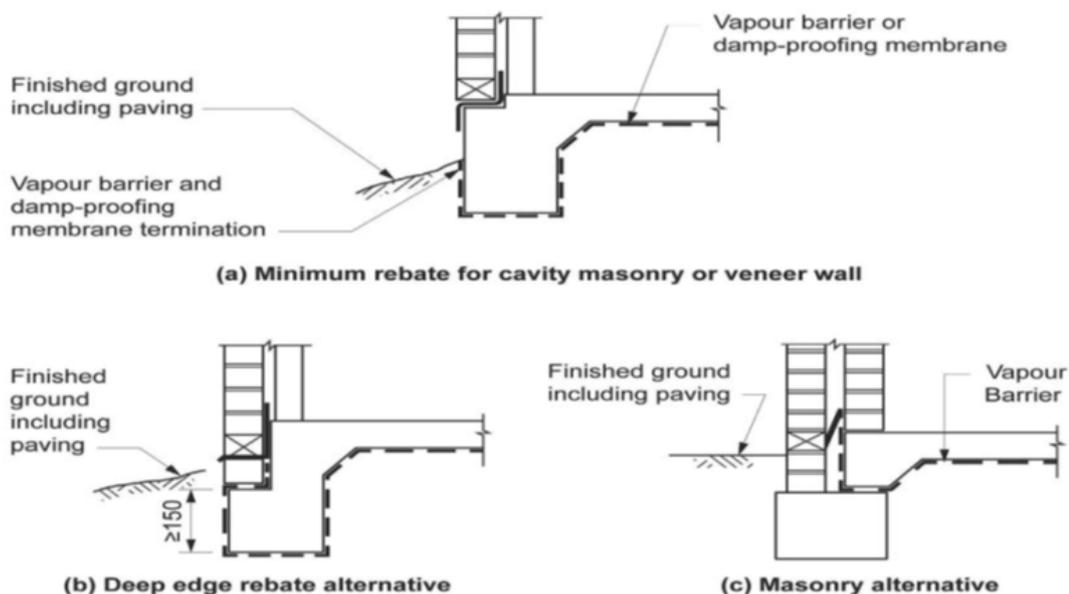


Diagram A: Indicative location of damp-proofing membrane and damp-proof course in a typical house. Image from the National Construction Code Series, courtesy of the Australian Building Codes Board

Damp-proofing membrane requirements

The technical requirements for damp-proofing membrane are detailed in the South Australian Variations to the National Construction Code; SA F1.10 of Volume One of the NCC and SA 3.2.2.6 of Volume Two of the NCC. To comply with the NCC, under slab DPM's must meet all of the following requirements (unless the DPM is laid under a Class 10 building and the slab is not integral with the main building) and be;

- polyethylene film that has a 0.2mm nominal thickness (tested as outlined in AS/NZS 4347.9);
- high impact resistant (tested using the falling dart test outlined in AS/NZS 4347.6);
- resistant to puncture and moisture penetration (using CSIRO methodology);
- continuously branded 'AS 2870 Concrete underlay, 0.2 mm- High impact resistance', together with the manufacturer's or distributor's name, trademark or code.

There are six different types of evidence that can be used to verify that a product conforms and/or complies with the NCC:

1. CodeMark Certificate of Conformity,
2. Certificate of Accreditation from a State or Territory accreditation authority,
3. Certificate from an appropriately qualified person such as an engineer,
4. Certificate from a product certification body accredited by Joint Accreditation Scheme of Australia and New Zealand (JAS-ANZ),

5. Report issued by a registered testing authority,
6. Other documentary evidence.

Further information can be found in the Australian Building Codes Board's [Evidence of Suitability Handbook](#), which includes a suitability framework and a decision flow chart to assist in the correct use of the evidence of suitability provisions of the NCC.



Picture A: Slab edge dampness

Responsibilities of parties in the construction sector

With regard to damp-proofing membranes:

- Designers, assessors and approval authorities should ensure that products selected and documented meet the requirements of the NCC and that appropriate evidence of conformity and compliance is provided. Don't approve products where the required compliance and conformance is not demonstrated.
- Builders and inspectors should check that the product or material supplied and installed is what is nominated in the approved plans and specifications. Check that the product to be installed is continuously branded as required by the NCC.
- Suppliers should check that regular batch testing of the material has been undertaken by the manufacturer and request the manufacturer supply the test data from the batch material being supplied to verify that it meets the requirements.
- Builders, inspectors and suppliers should consider undertaking testing if appropriate evidence is not available or the product appears suspect.

It is a breach of the *Development Act 1993* if any items or materials incorporated into any building do not comply with the Building Rules and if the failure to comply can be attributed to an act or omission of a person who **designed, manufactured, supplied or installed** the items or materials and it was reasonable to rely on the advice, skills or expertise of that person legal action may result. These provisions can be found in Section 45 and carry a maximum penalty of \$60 000. Item includes any component, fitting, connection, mounting or accessory. These provisions have been transferred to the *Planning, Development and Infrastructure Act 2016*.

Builders, certifiers and suppliers can also be responsible for the costs of rectifying non-compliant building work. In the case of damp-proofing membranes, these costs could be considerable. **Recent allegations of non-compliance / non-conformance**

Department of Planning, Transport and Infrastructure (DPTI) has recently been made aware of particular brands of damp-proofing membranes (polyethylene film) that appear to be falsely advertised and sold as compliant with the Building Rules. They are unbranded and deteriorate rapidly when exposed to UV light (**Pictures B and C** below). Industry testing indicates that they have failed both the AS4347.6 and AS4347.9 tests. If the quality of these materials is not up to standard moisture ingress through the building fabric is likely to occur.



Picture B



Picture C

Next Steps

DPTI have sourced damp-proofing membrane from various outlets in metropolitan Adelaide and have sent them to a testing laboratory to determine their compliance or otherwise with the relevant Australian Standards. When the results have been received DPTI will notify interested parties and the construction sector more broadly if appropriate.

In the interim, all parties in the supply chain should be vigilant when ordering, advertising and selling DPM. Builders and owners should retain approved documentation and where possible samples and photographs of the DPM that has been used during each development.

General Advice - Non-Conforming and Non-Complying Building Products

Risks and problems associated with the use of non-conforming and non-complying building products can affect the entire building and construction industry. This includes issues relating to health, safety, cost remediation and legal action. Most importantly, this issue can have significant impacts on the health and safety of the people who occupy buildings.

All those involved in the building and construction industry have a responsibility to be vigilant and to comply with legal requirements. Further information can be found on the [Non-Conforming and Non-Complying Building Products](#) page of the SA Planning Portal.

This Advisory Notice is for general information only and should not be relied upon as legal advice or an accurate statement of the relevant legislation provisions. If you are uncertain as to your legal obligations you should obtain independent legal advice.

Further information**Department of Planning, Transport and Infrastructure**

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**Government
of South Australia**

Department of Planning,
Transport and Infrastructure