VAPOUR BARRIERS - ARE YOU USING THE CORRECT MATERIAL?

A vapour barrier is required by the National Construction Code (NCC) Volume Two under slab-on-ground construction for all Class 1 buildings and Class 10 buildings where the slab is a continuation of the Class 1 slab.

The NCC has specific requirements in relation to the material you must use for a vapour barrier and damp-proofing membrane, but are you aware of the requirements and does the product you are using, meet these requirements?

This information sheet has been prepared to assist practitioners to understand the requirements related to vapour barriers and damp proofing membranes and what product technical information you should be looking for to ensure the products you are using comply with the NCC and relevant Australian Standards.

NCC requirements related to vapour barriers and damp-proofing membranes

As stated above, a vapour barrier is required by the NCC under slab-on-ground construction for all Class 1 buildings and Class 10 buildings where the slab is a continuation of the Class 1 slab.

The NCC nominates the required material and thickness, the impact resistance level for the barrier and the resistance to puncture and moisture penetration and also requires that the barrier be continuously branded for easy identification.

The NCC also references AS 2870 the Australian Standard for residential slabs and footings which also provides information in relation to the required impact resistance, thickness of the vapour barrier and moisture penetration resistance.

The standard goes on to provide methods to determine the required properties of the material including the average thickness of the film and how to determine the required impact resistance for medium and high impact and the vapour permeance test.

There is also a requirement to determine the resistance to puncture and moisture penetration which relates to penetration resistance to falling aggregate that will occur when the slab is poured.

Vapour barriers

The NCC requires a vapour barrier be a nominal 0.2mm thick (or 200 µm, which is the thickness in microns) polyethylene film, be medium impact resistant and be branded continuously "AS 2870 Concrete underlay, 0.2mm Medium impact resistance".

It may not always be possible to determine this just by looking at the packaging on the vapour barrier and damp-proofing membrane, if indeed it does have packaging.

South Australia and NSW variations

South Australia and NSW have variations to the NCC provisions that require a damp-proofing membrane as described in the variation, and to have ‘high impact resistance’ rather than the medium impact resistance required in other States and Territories.

It also must be branded continuously “AS 2870 Concrete underlay, 0.2mm high impact resistance”.

This is most important to consider if you work ‘cross border’. You should not just assume that the requirements are the same everywhere or that all products are the same.

In areas prone to rising damp and salt attack, AS 2870 recommend the use of damp-proofing membranes also under slabs.
NCC materials compliance requirements

Compliance with the NCC is required not only for the installation of vapour barriers and damp-proofing membrane but also the materials must comply. It’s not the case that you can do one and ignore the other you, must comply with both to satisfy building legislation.

Manufactures and suppliers generally have an obligation to supply materials that are to be used in the residential building industry that are fit for purpose and where required comply with the NCC.

Even so, you should understand what is required under the NCC and to ensure the products you use comply. This is set out in the evidence of suitability provisions of the NCC, these provisions are listed at A5.0 - A5.2 (formerly A2.1-A2.2) in Volume Two.

NCC evidence of suitability provisions

Part A5 of each Volume of the NCC contains the documentation of design and construction provisions.
A5.2 lists the types evidence that can be used to demonstrate that the materials, products, forms of construction and design are fit for their intended purpose and meet the requirements of the NCC.

One such method is a product technical statement. This statement provided by the manufacturer will specify the product, how and when it can be used and the performance requirements that it satisfies and limitations or conditions on the use of the product and testing data or certification information.

In purchasing vapour barrier materials and damp-proofing membranes, it is important to access and check the technical data sheet that should accompany the product for the properties of the material, compliance with relevant requirements of AS 2870 and ensure that you check the suitability of the impact resistance rating.

These technical data sheets can generally be sourced directly from the product suppliers or manufacturer or you can do an internet search to check.

The relevant building surveyor or certifier may also request this information as part of the building approval documents.

Also talk to your supplier to ensure you are receiving the correct material and ask them to provide the documentation that should accompany the product, such as a technical data sheet.

Be aware that in most circumstances, the builder will have responsibility obligations to the home owner, should a product that is installed not meet the requirements of the standard. Therefore if there is any doubt about the compliance of a product that has been supplied, you should ask further questions about its compliance prior to purchase or installation.

Further information

For further information on the required materials and installation of vapour barriers refer to the BCA part 3.2.2.6 Vapour barriers and/or AS 2870 clause 5.3.3.

For further information on the NCC evidence of suitability provisions, the ABCB have produced an information handbook that can be accessed from their website.

For further information on NCC and Australian Standards requirements HIA members can contact HIA’s Building Services team on 1300 650 620 or email hia_technical@hia.com.au