

TECHNICAL NOTE

USING WOOD-BASED FLOORING MATERIALS IN WET AREAS (NCC 2022)

RELEASED: 25 May 2023

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Summary

The National Construction Code (NCC) 2022 and AS 3740 *Waterproofing of domestic wet areas* released in 2021 have revised the requirements for the design and waterproofing of wet areas in buildings. The changes reflect modern design and construction practice and improve the level of protection and reliability of wood-based panels used as a structural floor in wet areas.

The key requirements for structural flooring materials under the deemed-to-satisfy (DTS) methods, for NCC 2022 Volume 2 (Class 1 and most Class 10 buildings), are:

- Timber and wood-based panel floors in shower areas, outside shower areas, and adjacent to baths and spas are required to be waterproof.
- Waterproofing of shower areas, walls, floors, junctions, penetrations, and other parts of wet areas can be achieved via AS 3740:2021 or the ABCB Housing Provisions.
- Structural plywood and particleboard flooring are no longer considered water resistant by themselves under Volume 2. Fibre-cement sheeting can be overlaid where water-resistant flooring is required (sealing of joints is recommended), or a compatible waterproof membrane can be applied when a waterproof floor is required.

And for NCC 2022 Volume 1 (Class 2 to 9 buildings):

- Specification 26 details the areas that are required to be waterproof or water resistant in Class 2 and 3 buildings and Class 4 parts of buildings. Areas that are required to be waterproof or water resistant must comply with AS 3740:2021.
- Structural plywood flooring installed in accordance with AS 1684 is considered a water-resistant substrate under AS 3740:2021. Compressed fibre-cement sheeting installed on top of a structural floor (including particleboard flooring) is considered a water-resistant substrate. A compatible waterproof membrane can be applied on plywood or particleboard flooring when a waterproof floor is required.

Background

NCC 2019 relied on the 2010 version of AS 3740 for the design of wet areas as the deemed-to-satisfy pathway. The updated NCC 2022 Volume 2 now provides two (2) deemed-to-satisfy methods of compliance for Class 1 and 10 buildings:

1. Australian Standard AS 3740:2021 *Waterproofing of domestic wet areas*; or,
2. Part 10.2 of the new *ABCB Housing Provisions*.

For Class 2 to 9 buildings, the wet area requirements in Volume 2 have also been restructured but remain similar to previous versions of the Code. Specification 26 in Volume 2 replaces the table layout seen in NCC 2019 and prescribes the areas in Class 2 and 3 buildings, and a Class 4 part of the building, that must be water-resistant or waterproof, and must comply with AS 3740. Building elements in a bathroom or shower room, a slop hopper or sink compartment, laundry or sanitary compartment within Class 5 to 9 buildings must also be water-resistant or waterproof as prescribed in Specification 26, and comply with AS 3740:2021, as if they were in a Class 2 or 3 building, or a Class 4 part of a building.

Waterproofing requirements

The requirements for waterproofing of wet areas have been increased when using timber and wood-based flooring materials, particularly in bathrooms and around shower areas. In general, for all classes of buildings, when using timber or wood-based flooring material in shower areas, areas outside showers, and areas adjacent to baths or spas, the floor is required to be waterproof.

A waterproof floor can be achieved with the options listed in AS 3740:2021 or ABCB Housing Provisions, including the commonly used wet area membranes meeting the requirements of AS/NZS 4858. Wet area membranes compatible with structural wood flooring products can be installed directly on particleboard flooring or plywood flooring, as directed by the membrane manufacturer.

Water Resistant Substrates

In the revised AS 3740:2021 and ABCB Housing Provisions, particleboard flooring is no longer recognised as water-resistant substrate when used alone. AS 3740:2021 still recognises plywood flooring installed in accordance with AS 1684 as a water-resistant flooring substrate, while the ABCB Housing Provisions does not. However, this does not preclude the use of particleboard flooring or plywood flooring in wet areas as part of a water-resistant substrate. A structural floor such as particleboard flooring or plywood can support fibre-cement sheeting to achieve a water-resistant substrate as follows.

ABCB Housing Provisions

10.2.9 Materials – water resistant substrates

The following materials are deemed to be water resistant:

(b) *For floors:*

(iii) *Compressed fibre-cement sheeting manufactured in accordance with AS/NZS 2908.2 and supported on a structural floor*

This is also reflected in AS 3740:2021 and therefore applies to wet areas in Class 2 to 9 buildings as well.

Whilst not specified, it is highly recommended that joints between fibre cement sheets laid over timber or wood panel flooring are sealed for added protection of the substrate.

The list of acceptable water-resistant substrates in AS 3740:2021 differs slightly from the ABCB Housing Provisions, in that in addition to fibre-cement supported by a structural floor, AS 3740 also recognises plywood flooring installed in accordance with AS 1684 as a water-resistant substrate.

NCC 2022 Transition Arrangement

- NCC 2022 is available from **1 October 2022** for voluntary adoption.
- States and Territories will adopt NCC 2022 on **1 May 2023**.
- Transitional arrangements have been agreed for the new livable housing, energy efficiency and condensation mitigation requirements, which will commence on **1 October 2023**.

Further reading

- NCC 2022 information on the changes and dates are available: <https://ncc.abcb.gov.au/>
- Victorian Building Authority webinar and factsheet: <https://www.vba.vic.gov.au/building/PES-previous-sessions>
- The Housing Industry Association (HIA) has summarised the changes to waterproofing more broadly: <https://hia.com.au/resources-and-advice/building-it-right/building-codes/articles/alternate-compliance-options-for-waterproofing>
- Forest and Wood Products Australia (FWPA) has summarised NCC 2022 effects on timber products: <https://www.woodsolutions.com.au/blog/how-do-2022-ncc-changes-affect-timber>

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