

Guidance Note

Precast external walls & the NCC

Concerns around design, certification and building standards that have followed the likes of Sydney's Opal and Mascot towers and Adelaide's Kodo apartments, have rightly prompted action by government. One of the fallouts is that building certifiers are increasing their due diligence around compliance to the National Construction Code (NCC). Weatherproofing of external precast concrete walls is but one example seemingly requiring clarification for certifiers.

The relevant part of the NCC 2019 Building Code of Australia - Volume One is Section FP1.4, which discusses requirements of weatherproofing of external walls:

FP1.4 Weatherproofing –

A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause:

- (a) unhealthy or dangerous conditions, or loss of amenity for occupants; and
- (b) undue dampness or deterioration of building elements. [1]

National Precast has consulted with other peak-body industry organisations and several industry technical experts, and determines the following:

In a normal environment – namely, above-ground, not housing liquid and in a non-aggressive environment - a precast walling element satisfies the requirements in Section FP1.4 of the NCC if it is design and manufactured in accordance with the following:

1. AS 3850.1:2015 Prefabricated concrete elements Part 1 : General requirements & AS 3850.2:2015 Prefabricated concrete elements Part 2 : Building construction
2. AS 3600:2018 Concrete structures
3. AS 3610.1 Formwork for concrete Part 1 : Specifications
4. The Precast Concrete Handbook – Published by National Precast

National Precast Master Precasters are audited to verify that their precast concrete elements are manufactured to engineer-approved shop drawings, in accordance with relevant Australian Standards and under strict quality control systems. Precast concrete mixes use high strength concrete, and advanced manufacturing methods ensure appropriate vibration and compaction to minimise porosity and permeability in the finished elements. Because of this, unless there are extenuating circumstances which should be considered by the designer, precast panels which are above ground, in a non-aggressive environment, and which do not contain liquids, generally do not require waterproofing. The waterproofing of panel joints and openings, however, must be carefully considered during the design and construction stages.

1. Australian Building Codes Board, Building Code of Australia 2019 - Volume One, Canberra: Australian Building Codes Board, 2020.

This opinion is supported by the following industry organisations: