Below Ground Compliance Under NCC 2025

How Performance Requirement F1P1 Captures Below-Ground Waterproofing Obligations

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Abstract

The National Construction Code Volume 1 2025 (NCC 2025) will introduce a fundamental restructure to the regulation of waterproofing in Australia. Through the consolidation of five previously separate Performance Requirements into a revised and comprehensive clause F1P1 and the introduction of a new defined term, "water", in Schedule 1, the code now unambiguously requires that below-ground structures be protected against all relevant water types, including sub-surface water, surface water seepage, and rising damp.

This paper explains the mechanism by which F1P1 captures below-ground waterproofing obligations for Class 2-9 structures, demonstrates that no Deemed-to-Satisfy pathway exists for below-ground compliance, examines the removal of the Class 7 and 8 building limitation and sets out the practical implications for certifiers, designers, builders, and material suppliers.

The paper concludes that the industry must prepare for a compliance landscape in which below-ground waterproofing construction projects, that are required to comply with NCC 2025, will require a Performance Solution and that building this awareness and capability is an urgent priority before the code takes effect.

Keywords: *NCC 2025, F1P1, below-ground waterproofing, basement, Performance Solution, sub-surface water, Australian building code, compliance, Performance Requirement*

1. Introduction

The National Construction Code Volume 1 2025 (NCC 2025) will introduce a fundamental restructure to the way waterproofing is regulated in Australia. For the first time, a single Performance Requirement, F1P1 will govern the management of water that can affect a building, both above and below ground.

This is a significant development from the NCC 2022 Volume 1 framework, which treated surface water management, rising damp, and external weatherproofing as separate regulatory concerns across different Parts and Performance Requirements. The purpose of this paper is to explain the mechanism by which F1P1 captures below-ground waterproofing obligations, what this means for achieving compliance for basements and other substructures, and how the compliance pathways operate in this new framework.

2. Background: The NCC 2022 Framework

Under NCC 2022, the requirements for the management of water affecting buildings are distributed across two separate Parts of Section F (Health and Amenity):

2.1 Part F1: Surface Water Management, Rising Damp and External Waterproofing

Part F1 contains four Performance Requirements:

- **F1P1 - Managing rainwater impact on adjoining properties:** Requires that surface water from a 5% AEP storm, collected or concentrated by a building or sitework, be disposed of to avoid damage or nuisance to other property.
- **F1P2 - Preventing rainwater from entering buildings:** Requires that surface water from a 1% AEP storm be prevented from entering the building.
- **F1P3 - Rainwater drainage systems:** Requires that a drainage system be capable of conveying surface water from a 5% AEP event to an appropriate outfall, and prevent entry of surface water from a 1% AEP event.
- **F1P4 - Rising damp:** Requires that moisture from the ground be prevented from causing undue dampness or deterioration of building elements, and unhealthy or dangerous conditions for occupants.

2.2 Part F3: Roof and Wall Cladding

Part F3 contains another Performance Requirement:

- **F3P1 - Weatherproofing:** Requires that a roof and external wall (including openings around windows and doors) prevent the penetration of water that could cause unhealthy conditions or deterioration of building elements.

2.3 The “Fragmentation” Problem

This structure has a regulatory landscape where:

1. Surface water management (F1P1–F1P3) is separate from weatherproofing (F3P1), despite both dealing with the same fundamental problem, keeping water out of buildings.

2. Rising damp (F1P4) is the only Performance Requirement that explicitly addresses water from the ground, but its scope is limited to "moisture from the ground" causing dampness and deterioration, it does not comprehensively address the range of water types that can affect a below-ground structure.

3. Below-ground structures such as basements, retaining walls, lift pits, service pits and the like occupy an ambiguous regulatory position. Hydrostatic pressure from groundwater, for example, is not clearly captured by any Performance Requirements.

4. NCC 2022 does not include a defined term for "water" in the context of Section F. The word appears throughout the code but the various forms in which water can manifest or affect the serviceability and amenity of a structure are not clarified.

For some practitioners dealing with below-ground structures, this fragmentation means that compliance arguments often result in reference to multiple Performance Requirements, because the regulatory intent is not clear to them.

3. What Changes in NCC 2025

NCC 2025 restructures the Section F water management provisions in three interconnected ways:

3.1 Consolidation of Performance Requirements

The ABCB has consolidated the previously separate Performance Requirements into a unified and encompassing Performance Requirement:

NCC 2022	NCC 2025	CHANGE
F1P1 (surface water — adjoining property)	F1P1 (consolidated)	Absorbed into new F1P1
F1P2 (preventing rainwater entry)	F1P1 (consolidated)	Absorbed into new F1P1
F1P3 (rainwater drainage systems)	F1P1 (consolidated)	Absorbed into new F1P1
F1P4 (rising damp)	F1P1 (absorbed)	Absorbed via "water" definition
F3P1 (weatherproofing — roof/wall)	F1P1 (consolidated)	Part F3 relocated to Part F1

3.2 Introduction of the Defined Term "Water"

This is a pivotal change. NCC 2025 introduces a new defined term in Schedule 1:

> ***Water:*** *For the purposes of Section F of Volume One, includes—*
> *(a) surface water; and*
> *(b) sub-surface water; and*
> *(c) rainwater; and*
> *(d) stormwater; and*
> *(e) rising damp; and*
> *(f) water services overflow; and*
> *(g) surface water seepage.*

Every italicised instance of Water in F1P1 links to this definition, noting the liquid runoff from condensation is excluded.

3.3 Restructure of Part F1

Part F1 will be renamed and restructured. The old Part F3 (Roof and Wall Cladding) in NCC 2022 will be absorbed into Part F1, and verification method F3V1 in NCC 2022 will be relocated to F1V1. The DtS provisions will be renumbered and expanded (F1D1 through F1D15).

4. The Definition of "Water”

4.1 Why This Definition Matters

In NCC interpretation, an italicised word triggers its Schedule 1 definition. When F1P1(1) states:

> *"Water, including water on the surface of the allotment that is collected by a building or associated sitework, must be redirected to a drainage system to prevent—"*

The word Water (italicised) carries the full weight of the Schedule 1 definition. It does not only mean "rainwater." It does not only mean "surface water." Rather, it means all seven types listed in the definition, including sub-surface water, rising damp, and surface water seepage.

The effective result is that F1P1 will apply to every type of external (to the building) water source that can affect a building, including those acting on below-ground elements. The defined term "water" will demand a higher level of consideration be given to the scope of water management.

4.2 Water Types Relevant to Below-Ground Structures

For below-ground structures, the following water types from the definition are directly relevant:

Sub-surface water (b): Water present in the ground below the surface, groundwater, perched and permanent water tables. This is typically the primary water type affecting basements and other

substructures, although temporary water accumulation caused by rainfall infiltration or water from other sources is also included in the definition of sub-surface water.

Rising damp (e): Moisture migrating upward through building elements by capillary action from the ground. This is relevant to walls and floors in contact with the ground, including basement walls that extend above ground level.

Surface water seepage (g): Water that seeps through/under the ground surface or water which seeps through an adjacent element of the building. This is relevant to basement walls and floors, where surface water migrates through adjacent soil and acts on the structure.

Surface water (a): Typically, in the context of below-ground structures, surface water is rainwater which is collected on the roof of the basement, including at window wells, stairwells to basements, or areas where surface grading directs water toward the structure.

Stormwater (d): This is relevant where stormwater drainage interacts with below-ground structures, or where stormwater systems must manage water that would otherwise act on substructures.

4.3 Reading F1P1 Through a Below-Ground Lens

F1P1(1): This sub-clause requires that water must be redirected to a drainage system to prevent unhealthy or unsafe conditions, damage to internal surfaces, and damage to other property. For a basement, this means sub-surface water, surface water seepage, hydrostatic, and rising damp will all have to be managed.

F1P1(2), (3), (4): These sub-clauses are a function of rain events with specific AEP criteria (5% AEP, 1% AEP, 4% AEP wind). From a practical perspective, these sub-clauses are focused on the roof of the basement, including above ground openings to the basement.

It is worth noting that the various water types in the Schedule 1 definition are not independent of one another. For example, rainfall at ground level that infiltrates the soil becomes sub-surface water or surface water seepage. Practitioners should recognise the relationship between above-ground rain events and the resulting below-ground water conditions.

Critical Point: F1P1(1) stands on its own as a Performance Requirement for all water types. Sub-clauses (2), (3), and (4) provide specific criteria for rain events, but they do not limit the scope of (1). For below-ground structures, compliance with F1P1(1) is assessed against the full range of water types in the Schedule 1 definition.

5. Compliance Pathways for Below-Ground Structures

5.1 No Deemed-to-Satisfy Pathway Exists

Key Finding: There is no Deemed-to-Satisfy pathway for new-build below-ground waterproofing. Every below-ground waterproofing project must therefore be substantiated as a Performance Solution.

The DtS provisions in Part F1 (F1D1 through F1D15) address:

- stormwater drainage (F1D3),
- falls and drainage to external areas (F1D4),
- substrate materials (F1D5),
- waterproof membranes referencing AS 4654.1 and AS 4654.2 (F1D6, F1D7),
- damp-proofing (F1D8),
- damp-proofing of floors on the ground (F1D9),
- and roof coverings, sarking, glazed assemblies, and wall cladding (F1D12–F1D15).

None of these provisions address below-ground waterproofing. F1D8 deals with damp-proof courses (preventing rising damp in walls above ground), and F1D9 addresses vapour barriers for floors on the ground, but neither addresses the waterproofing of basement walls, below-ground slabs or substructures exposed to sub-surface water.

AS 4654.2-2012 "Waterproofing membranes for external above-ground use" referenced in F1D6 and F1D7 is applicable to above-ground elements only. In context of a basement, one would use AS4654.2 to demonstrate DtS compliance for the roof slab (usually the ground floor or podium of a building) only. There is no equivalent Australian Standard for the below-ground elements of the basement.

5.2 Performance Solutions - The Only Route

Under A2G2, a Performance Solution must demonstrate compliance with the relevant Performance Requirements through one or a combination of:

- evidence of suitability (A5G2/A5G3),
- expert judgement,
- comparison with DtS provisions,
- verification methods, or testing.

For below-ground structures, the designer or waterproofing consultant must prepare a Performance Solution that demonstrates how the proposed waterproofing system satisfies F1P1(1)(2)(3)(4), that is, how it prevents water from causing:

- unhealthy or unsafe conditions for occupants,
- undue damage to internal surfaces and building elements,
- loss of amenity for building occupants,
- undue damage or nuisance to other buildings and property.

5.3 The Role of BS 8102:2022

In the absence of an Australian Standard for below-ground waterproofing, ***BS8102:2022 Protection of below ground structures against water ingress, code of practice***, provides a robust and internationally recognised framework for developing Performance Solutions.

BS 8102 offers a classification system for water management grades (Grade 1a through 3), design guidance for three types of waterproofing protection (barrier, structurally integral, and drained cavity), risk assessment methodology, material selection and installation guidance, and maintenance and inspection frameworks.

BS 8102 is a British Standard, not directly referenced by any edition of the NCC. Nevertheless, its guiding principles are widely accepted in the Australian industry and is almost exclusively used as the basis upon which waterproofing design is undertaken and upon which a Performance Solution is developed and assessed.

5.4 The Absence of a Reference Standard - An Industry Gap

The absence of an Australian Standard for below-ground waterproofing is a significant gap in the regulatory framework. AS 4654.2 covers above-ground external membranes. AS 3740 covers internal wet areas. Neither addresses the specific challenges of below-ground construction: hydrostatic pressure, permanent immersion, limited access for maintenance and remediation, soil chemistry and groundwater conditions, or construction sequence constraints (positive-side vs negative-side application).

This gap has existed for decades and the NCC 2025 changes will bring this into sharper focus. F1P1 will capture below-ground water management through the defined term "water," the absence of a DtS pathway and a reference standard means every below-ground waterproofing project requires a bespoke Performance Solution. This is not optional, and it is not a technicality. Practitioners (certifiers, designers, and contractors alike) must plan for the cost, time, expertise, documentation, and quality verification that Performance Solutions demand.

6. The Removal of the Class 7 and 8 Limitation from NCC 2022

Under NCC 2022, each of the water-related Performance Requirements F1P2, F1P4, and F3P1 includes a limitation:

> *"[This Performance Requirement] does not apply to a Class 7 or 8 building where in the particular case there is no necessity for compliance."*

This is frequently misunderstood to mean that Class 7 or 8 structures do not need to comply with F1P2, F1P4 and F3P1. NCC 2025 aims to remove this common misunderstanding by removing the limitation. The absence of the Class 7/8 limitation is a deliberate tightening. Combined with the NCC 2025 preface note that F1D8 has been “amended to remove concession for certain Class 7 and 8 buildings”, the regulatory intent is clear; there will no longer be any exemptions to the rule, all structures, including below ground structures, will be required to satisfy the relevant performance requirement.

This has significant implications for:

- **Basement car parks**: Under NCC 2025, a basement car park must demonstrate compliance with F1P1 for exposure to all relevant water types.

- **Below-ground storage and plant rooms**: Similarly, these can no longer claim exemption.
- **Mixed-use buildings**: Where a Class 7a basement supports Class 2 residential above.

This change aligns with sound building practice. Water damage to below-ground structures can affect structural durability, occupant health (mould, air quality), and the integrity of services and finishes. The often misunderstood limitation for Class 7 and 8 structures permitted significant water ingress issues in buildings where the long-term consequences were borne by owners and occupants.

7. Practical Implications

The NCC 2025 changes have direct consequences for every party involved in the design, certification, construction, and supply of below-ground structures.

7.1 For Building Certifiers

- **F1P1 becomes the relevant Performance Requirement** for below-ground waterproofing. There is no separate below-ground clause, the obligation is embedded in F1P1 through the defined term "water."
- **A Performance Solution will be required for every below-ground structure.** There is no DtS pathway. Certifiers will have to ensure that a Performance Solution has been prepared, that it addresses the relevant water types from the Schedule 1 definition, and that it is verified through one of the methods in A2G2.
- **The Class 7/8 limitation will no longer be a possibility.** Certifiers will no longer be able to accept that a basement car park or storage area is exempt from waterproofing Performance Requirements.
- **Expert documentation becomes essential.** In the absence of a DtS pathway, certifiers will have to assess the adequacy of the Performance Solution on its merits, including scrutinising the expertise of its author.

7.2 For Designers and Consultants

- **Every below-ground waterproofing design will require a Performance Solution.** It must demonstrate of how the proposed system will satisfy the requirements set out in F1P1(1)(2)(3)(4).
- **BS 8102:2022 provides a credible framework** for structuring Performance Solutions. Its water management grades, protection types, and risk assessment methodology are well-suited to the requirements of F1P1.
- **Design must account for all relevant water types**. Surface water seepage, rising damp, and the relationship between rainfall and sub-surface water conditions should all be addressed.
- **Evidence of suitability for materials and systems** must be provided under A5G3. In the absence of a referenced Australian Standard, evidence may include manufacturer technical data, independent testing, or certification against international standards.

7.3 For Builders and Subcontractors

- **Waterproofing of below-ground structures will not be discretionary.** For projects constructed under the NCC 2025 consideration of water/moisture protection will be mandatory for below ground structures to demonstrate and achieve compliance.
- **Installation must be in accordance with the Performance Solution.** If a Performance Solution nominates a particular system, substrate preparation, protection, or drainage arrangement, any departure from that will be a departure from the compliance pathway.
- **Quality assurance and inspection become critical.** Below-ground waterproofing is typically concealed permanently so inspection and hold points should be established and documented.

7.4 For Material Suppliers

- **The absence of a referenced Australian Standard for below-ground products** means suppliers must provide robust evidence of suitability. This may include accredited testing to international standards, product technical statements, or CodeMark certification.
- **Product literature must address below-ground conditions**, including hydrostatic pressure resistance, chemical resistance to soil conditions, long-term durability under permanent immersion, impact resistance, moist substrates and compatibility with protection and drainage systems.

8. Conclusion

NCC 2025 will introduce a fundamental shift in the regulatory treatment of below-ground waterproofing in Australia. Through the consolidation of Performance Requirements into F1P1 and the introduction of the defined term "water" in Schedule 1, the code will require that below-ground structures be protected against all relevant water types including sub-surface water, surface water seepage, and rising damp.

This is not a minor amendment. It is a much needed structural change to the compliance framework with three significant consequences:

1. **F1P1 will become the sole Performance Requirement** governing both above-ground and below-ground water management. The mechanism will be the Schedule 1 definition of "water," which encompasses seven water types including those specific to below-ground conditions.

2. **Deemed-to-Satisfy pathways will still not exist** for below-ground waterproofing, as is the case in NCC 2022. The DtS provisions in Part F1 do not address below-ground structures, and AS 4654.2 is limited to above-ground parts of the structure. Every below-ground waterproofing project constructed under NCC 2025 will need to be delivered via a Performance Solution.

3. **The Class 7/8 limitation will be removed.** Below-ground structures will no longer have the potential of being exempted from waterproofing Performance Requirements based on building classification. This will close a regulatory gap that has historically permitted the omission of waterproofing in certain basement car parks, storage areas, and plant rooms.

The industry must prepare for these changes. Certifiers must recognise that F1P1 captures below-ground obligations and that Performance Solutions are mandatory. Designers must document their below-ground waterproofing as Performance Solutions with reference to the relevant water types. Builders must understand that below-ground waterproofing will not be discretionary. And suppliers must provide evidence of suitability that addresses the specific demands of below-ground application.

The NCC 2025 will bring clarity to a currently fragmented regulatory landscape. This clarity will bring increased responsibility for every party in the construction chain, and this is a good thing. The time to build industry awareness and capability in below-ground waterproofing is now, before the code takes effect.

Appendix A: Comparison Table — NCC 2022 vs NCC 2025

ASPECT	NCC 2022	NCC 2025
Performance Requirements for water	F1P1, F1P2, F1P3, F1P4, F3P1 (5 separate)	F1P1 (single consolidated)
Defined term "water"	Not defined for Section F	Defined: 7 water types incl. sub-surface water, rising damp, surface water seepage
Below-ground coverage	Ambiguous - F1P4 addressed "moisture from the ground" only	Explicit - F1P1 captures all below-ground water types via definition
Class 7/8 limitation	Possible under F1P2, F1P4, F3P1	Removed
DtS for below-ground	None	None
Referenced standard (below-ground)	None	None
Compliance pathway (below-ground)	Unclear - multiple Performance Requirements, ambiguous scope	Clear - F1P1 via Performance Solution
Part F3 (weatherproofing)	Separate Part with F3P1, F3V1, F3D2–D5	Absorbed into Part F1 (F1V1, F1D12–F1D15)

Appendix B: About the Authors

David Previte

David Previte is National President of the Australian Institute of Waterproofing, leading industry engagement and advocacy with government, regulators and stakeholders to raise practitioner education and technical standards. He sits on Standards Australia committee BD-038, cofounded the Construction Connect training series, and is an expert witness on NCC compliance, performance solutions and remedial works. He holds a Bachelor of Construction Management (Honours) and RICS Expert Witness Certification.

With 18 years of construction waterproofing experience, David is Founder and Principal of Waterproofing Integrity, a specialist consultancy based in Sydney, Newcastle, Brisbane and Melbourne. His team of 60 provides design, compliance, inspection and testing for new builds, below-ground structures and remedial works on existing assets. His experience spans multi-residential, commercial, hotels and hospitality, healthcare, education, aged care, aquatic and leisure, arts and culture, and major transport infrastructure.

Sam Parker

Sam Parker is an Executive Director, Service Leader, and Senior Principal at ACOR, specialising in remedial engineering and waterproofing. With over 34 years in construction and degrees in civil and structural engineering, he is a Fellow of IEAust, a Registered Design Practitioner, and member of the ASBC, Concrete Institute of Australia, MBA, and ACRA. He has previously held senior positions including Operations Manager and Managing Director of leading remedial contractors.

Sam sits on Standards Australia committees BD-038 (AS3740, AS4858, AS4654.1/.2) and BD-113, and on the ABCB review panel for BCA Section F. He co-authored and delivers ACRA's NSW waterproofing training, regularly presents for industry bodies, and is widely published. He consults to government and Tier 1 and 2 contractors on waterproofing, corrosion, and building defects, and has won multiple awards.

Stan Giaouris

Stan Giaouris is Principal of The Construction Adviser (TCA), a Sydney-based building consultancy specialising in defect investigations, waterproofing design, and remedial construction. A licensed builder, registered practitioner, and certifier with over 25 years' experience, he leads forensic inspections, expert witness reporting, and complex construction delivery for clients across the industry.

A recognised authority on waterproofing and building compliance, Stan chairs the Master Builders NSW Waterproofing Technical Committee, sits on Standards Australia committees shaping national waterproofing standards, and lectures at UTS on the National Construction Code and Australian Standards. He is also an undertaking manager appointed by the NSW Building Commission. Through TCA, he advises universities, developers, builders, strata managers, and legal teams on NCC compliance, the Design and Building Practitioners Act, performance solutions, QA inspections, and expert reports for litigation.