

# DINCEL WALL FIRE ASSESSMENT

Warringtonfire have confirmed that the **DINCEL POLYMER PROVIDES BETTER FLAMMABILITY RESISTANCE COMPARED TO PLASTERBOARD**, a material used in almost every residential and commercial building in Australia.

“ As demonstrated from the test results, the lack of ignition and lower peak heat release rates for the Dinzel polymer profile indicate better flammability resistance compared to paper faced plasterboard, a material which may be used wherever a non-combustible material is required under DTS Clause C1.9 (e) of the NCC 2019, Volume One, Amendment One. ”

- Warringtonfire Report RTF200276, Page 4



# WHAT MAKES DINCEL WALLS SAFE IN A FIRE?

A Dintel wall consists primarily of concrete, which is a safe and proven material used within almost all multi-storey buildings.

What makes a Dintel wall unique is that it also contains a stay-in-place polymer shell which is not only used for formwork purposes but also enhances the properties of a conventional concrete wall (such as by providing waterproofing\* and increased durability).

Dintel walls have been meticulously tested and analysed by some of Australia's largest NATA accredited laboratories and renowned fire professionals in order to prove its safety and compliance with the NCC.

The Dintel polymer is a proprietary formulation and is significantly different to common PVC. In the event of a fire, the Dintel material chars and intumesces (it does not form molten droplets or spread fire).



- ✓ AS 5113 Large Scale Facade Test
- ✓ AS ISO 9705 Full Scale Room Test
- ✓ AS 1530.4 Joints Test
- ✓ AS 1530.4 Penetrations Test



AS 5113 Large Scale Facade Test



AS ISO 9705 Full Scale Room Test



AS 1530.4 Joints Test



AS 1530.4 Penetrations Test

## Covered by



The fire compliance of Dincel walling is verified by CodeMark certification.

The CodeMark certificate for Dincel walling confirms that the product can be used as both internal and external loadbearing walls for Class 2-9 buildings.

The CodeMark scheme was developed by the Australian Building Codes Board (ABCB) in order to streamline the approvals process, particularly for new and innovative building materials.

To obtain a CodeMark certificate, a product must be carefully reviewed by independent certification bodies and building professionals.

*"A Certificate of Conformity is one of several options available for meeting the 'Evidence of Suitability' requirements of the BCA. However, unlike other Evidence of Suitability options, Certificates of Conformity receive mandatory acceptance under State and Territory building control legislation".*

- Australian Building Codes Board

## Backed by

# BRAC Accredited

The fire compliance of Dincel walling is further verified by BRAC accreditation. The BRAC Certificate of Accreditation verifies that Dincel can be used where a non-combustible external wall is required.

A BRAC Certificate of Accreditation is proof by the Building Regulations Advisory Committee that a product meets performance requirements of the NCC.

The BRAC is an independent statutory body appointed under Division 4 of Part 12 of the Building Act 1993 - Victoria.

Although being a Victorian based accreditation, the BRAC certificate can be accepted in all states. The ABCB evidence of suitability handbook (pg. 7) confirms this:

*"A certificate of accreditation issued by a state or territory accreditation authority may be used as evidence of suitability in another jurisdiction".*

*"A certificate of building product accreditation is proof that a product meets the performance requirements of the Regulations or the BCA. Once a product is accredited, there is no need to prove its suitability each time building work requires a building permit. A building surveyor must accept the product, method, design, component or system if the use complies with the accreditation."*

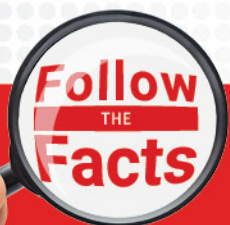
- Building Regulations Advisory Committee



Scan QR Code for CodeMark Certificate:



Scan QR Code for BRAC Certificate:



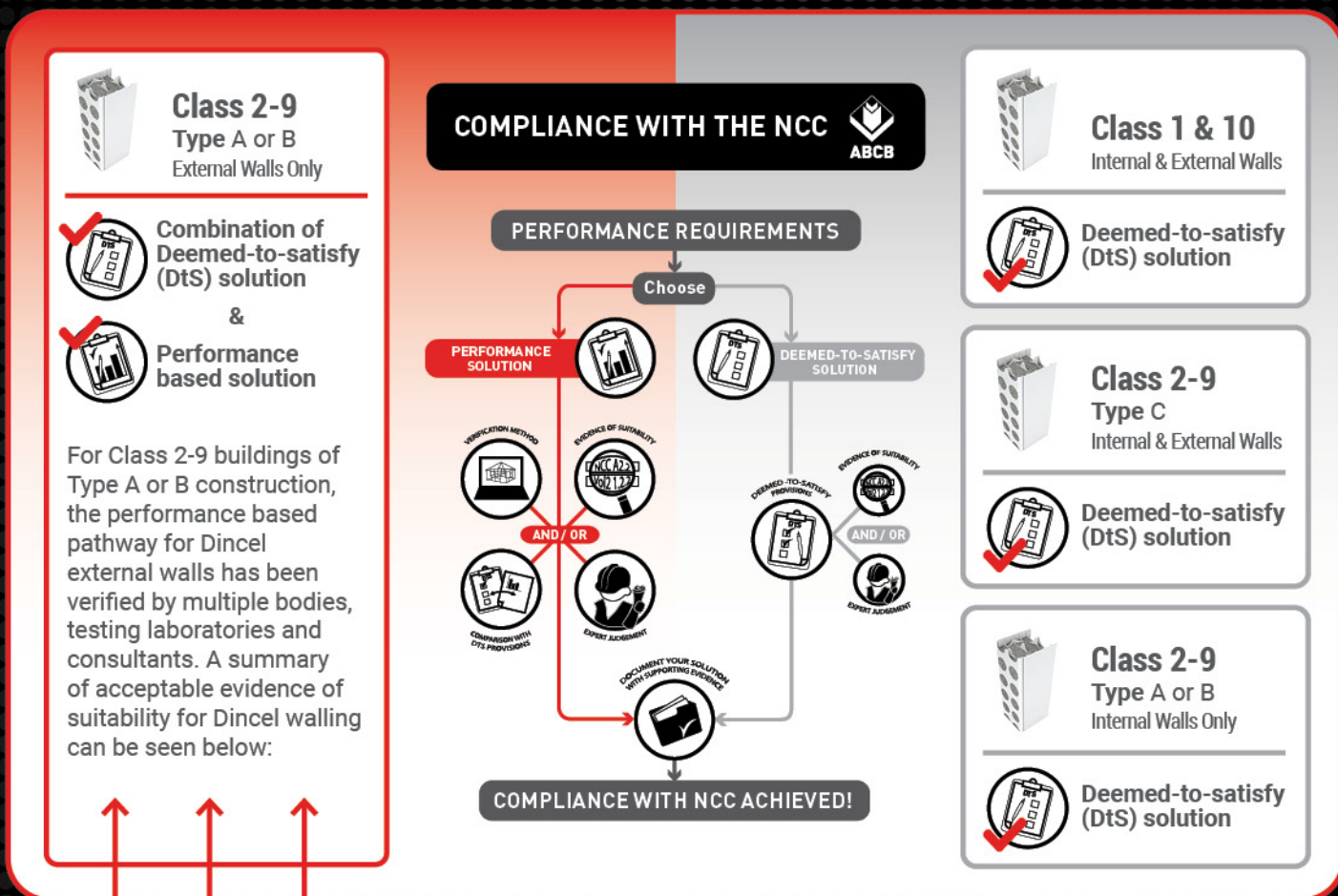
# DINCEL - Fire Compliant Permanent Formwork

# FIRE COMPLIANCE PATHWAY

## For Dintel Walls

A deemed-to-satisfy compliance pathway and performance based pathway are both equally accepted and permitted under the NCC. To learn more about NCC compliance pathways, visit:

<https://www.abcb.gov.au/Resources/Publications/Education-Training/Compliance-with-the-NCC>



### EVIDENCE OF SUITABILITY FOR DINTEL EXTERNAL WALLS



SAI Global  
CodeMark Certificate  
of Conformity



Evidence of suitability:  
A2.2 (2)(a) & A5.2 (a)



BRAC  
Accreditation for  
External Walls



Evidence of suitability:  
A2.2 (2)(a) & A5.2 (b)



Warringtonfire  
Dintel polymer comparison  
to plasterboard (a material  
listed under C1.9 (e)  
of the NCC)



Evidence of suitability:  
A2.2 (1)(b) & A5.2 (d)



Omnii Consulting Fire Engineers  
Evidence of Suitability  
Report for External Walls



Evidence of suitability:  
A2.2 (2)(c) & A5.2 (e)

## AS1530.1 Testing

AS1530.1 is a small-scale test which is used to demonstrate compliance only when a deemed-to-satisfy pathway is used for external walls of Types A & B construction of Class 2-9 buildings.

The specimens used in this test are just 45mm x 50mm. To put this into perspective, it is approximately the same size as three match stick boxes stacked on top of each other.

This test is not appropriate for composite materials (such as Dincel walling) as the material must be homogeneous throughout. AS1530.1 states this within the standard:



*"The test method is not applicable to products which are coated, faced or laminated".*

*"the performance of coated, faced or laminated products may be determined by other reaction to fire tests".*

*"The test results relate only to the behaviour of the test specimens of the material under the particular conditions of the test, and are not intended to be the sole criteria for assessing the potential fire hazard of the material in use".*

- AS1530.1-1994, Clause 1.4

For a composite walling system such as Dincel, a more suitable and holistic test method is a large scale AS5113/ BS8414 façade test. This test has been carried out on Dincel walling and following a thorough assessment of the results, Dincel walling has been confirmed to comply with the performance requirements of the NCC, as verified by the Dincel CodeMark Certificate of Conformity and BRAC Certificate of Accreditation.

## C1.9 of the NCC

C1.9 is a deemed-to-satisfy provision of the NCC. For external applications, Dincel Structural Walling utilises a performance-based pathway to demonstrate compliance, as permitted under the NCC. Performance requirements are the mandatory requirements of the building code, not deemed-to-satisfy provisions.



### PERFORMANCE REQUIREMENTS

PERFORMANCE SOLUTION

and/or

DEEMED-TO-SATISFY SOLUTION

Page 4 of the CodeMark certificate for Dincel Structural Walling clarifies this topic.

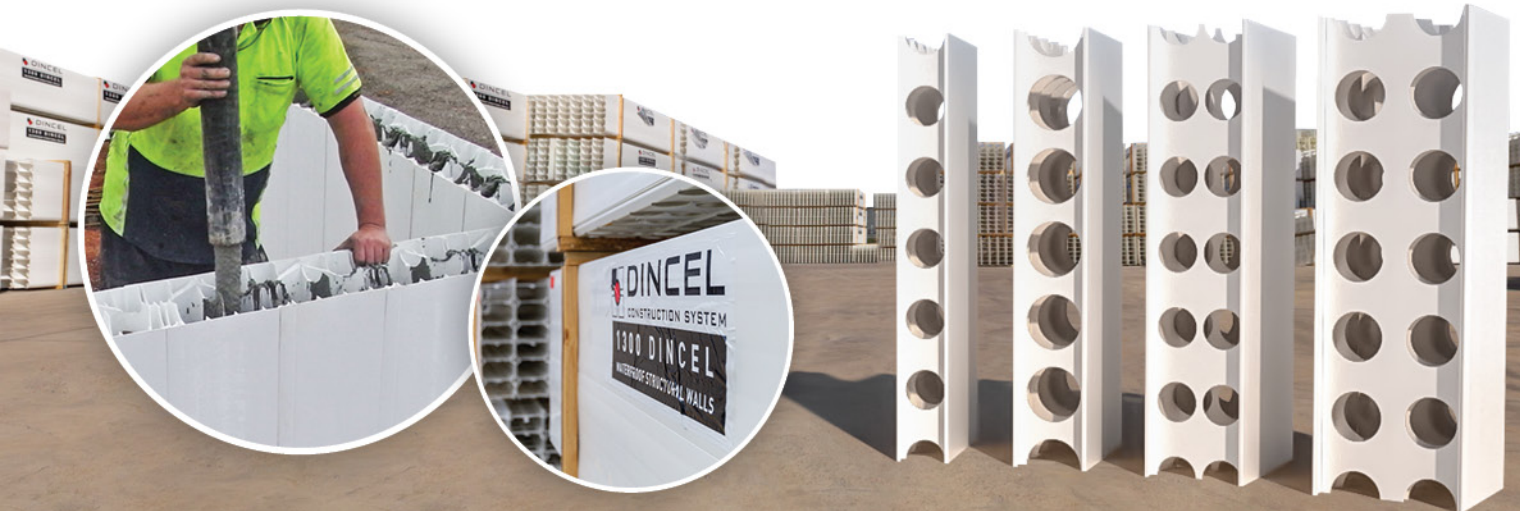


*"Note:*

*As compliance with Performance Requirement CP2 – Spread of fire*

*has been demonstrated for external walls, there is no need to certify against the corresponding deemed-to-satisfy provision C1.9(a)(i) for the Dincel Wall itself. All building elements and their components that are added to a Dincel wall must comply with limitation/condition 7 of this certificate."*

- Page 4, Dincel CodeMark





# THE CONCRETE WALL with Benefits

## Australia's Own Dincel Structural Walling

- ✔ Lightweight "SNAP-LOCK" panels do not rely on the use of cranes, improve site safety and reduce potential accidents.
- ✔ Reduced risk of concrete cancer. Waterproof\* stay-in-place protective skin protects the concrete and steel within from the environment.
- ✔ Fire-safe polymer does not spread fire. Compliant with the NCC (National Construction Code) and backed by CodeMark and BRAC certification.
- ✔ Withstands the pressures of using Self-Compacting Concrete (SCC), ensuring no air-voids within fully concrete filled walls.
- ✔ Super durable, heavy metal and stabiliser free, non-toxic and recyclable polymer shell enhances flexural and compressive strength of concrete infill.
- ✔ Offers greater design flexibility, and is maintenance free.
- ✔ Quicker project turnaround, reducing build costs.
- ✔ A range of modern finishing options available - natural, paint, render or clad.
- ✔ Readily available stock and custom length supply.

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The information and any diagrams in this document is provided for general information purposes only, and is necessarily subject to assumptions and qualifications. It should not be relied upon for specific advice. We make no representation concerning the suitability or appropriateness of using our products on particular projects including because we do not have project-specific knowledge to assess particular uses of our products. Rather, you should consult qualified professionals such as engineers, certifiers and architects on a project by project basis to determine whether our products are appropriate for use on your project having regard to any applicable laws, regulations, standards, codes and other legislative requirements and authority approvals. We accept no liability should you fail to consult other necessary qualified professionals, or otherwise take reasonable steps so as to verify the suitability of our product. Copies of test results and the latest Dincel Construction Manual in respect of our products can be found at [www.dincel.com.au](http://www.dincel.com.au).

### \*Waterproof

Dincel products are waterproof, subject to certain qualifications and conditions. Refer to Dincel Waterproof Wall Conditions and Qualifications for details of waterproof qualities, the results of the testing that has been performed, and the qualifications, conditions and limitations on those waterproof qualities.

The clauses and page numbers referenced within this document were correct as at June 2021.

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Invented, Owned  
& Manufactured**



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