

WEATHERPROOFING PROPRIETRY DATA

FV1.1 weather proofing compliance to NCC

1 message

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Hi Doug,

In regard to the performance requirements for weatherproofing to comply to the NCC 2019, I have compiled this email to simplify ASKIN compliance pathway to FP1.4 and FP1.5. To understand the verification methodology of FV1.1, I have attached NCC information and ASKIN AS4284 testing to highlight ASKIN commitment to compliance and support of the Australian Standards and Australian NATA approved testing facilities. Below is information on the requirements of compliance and who is responsible for each stage of the process. Each project has its own unique specification but compliance to FP1.4 is determined based on the below information.

A calculation of the risk score determined in accordance with FV1 (a)(i) and Table FV1.1, to demonstrate that the Verification Method is suitable to use for this scenario.

ASKIN can assist in confirming the panel requirements, however the compliance should be completed by a façade engineer with a Civil Engineering certification as to confirm all components inclusive of walls and windows.

We have had conversations with ABCB and VBA regarding completing the risk assessment within the code (see table below FV1.1), and this is the responsibility of the Builder to obtain.... That said it must be completed by a registered civil engineer. (An installation contractor, product manufacturer or supplier is not considered responsible)

As per the copies of our NATA approved test reports, ASKIN have met the performance requirements of the FV1.1 via our tests to AS4284 and as per the table and clauses referenced below.

The NCC states - Projects that fall under a risk score of 20 or less, not subjected to an ultimate limit state wind pressure of more than 2.5 kPa and include only windows that comply with AS 2047 (this is to be covered via IND), are covered by the test carried out under the provisions of AS4284.

See below cut and paste from NCC....

Verification Methods

FV1.1 Weatherproofing

- (a) Compliance with FP1.4 for weatherproofing of an *external wall* that—
- (i) has a risk score of 20 or less, when the sum of all risk factor scores are determined in accordance with Table FV1.1; and
 - (ii) is not subjected to an ultimate limit state wind pressure of more than 2.5 kPa; and
 - (iii) includes only windows that comply with AS 2047,

is verified when a prototype passes the procedure described below:

- (iv) The test specimen is in accordance with the requirements of (b).
- (v) The test procedure is in accordance with the requirements of (c).
- (vi) The test specimen does not fail the criteria in (d).
- (vii) The test is recorded in accordance with the requirements of (e).

Table FV1.1 Risk factors and scores

Risk factor	Category	Risk severity	Score
Wind region	Region A (AS/NZS 1170.2)	Low to medium	0
	Region B (AS/NZS 1170.2)		
	Region C (AS/NZS 1170.2)	High	1
	Region D (AS/NZS 1170.2)	Very high	2
Number of storeys	One storey	Low	0
	Two storeys in part	Medium	1
	Two storeys	High	2
	More than two storeys	Very high	4
Roof/wall junctions	Roof-to-wall junctions fully protected	Low	0
	Roof-to-wall junctions partially exposed	Medium	1
	Roof-to-wall junctions fully exposed	High	3
	Roof elements finishing within the boundaries formed by the <i>external walls</i>	Very high	5

Risk factor	Category	Risk severity	Score
Eaves width	More than 600 mm for single storey	Low	0
	451-600 mm for single storey; or	Medium	1

	more than 600 mm for two <i>storey</i>		
	101-450 mm for single <i>storey</i> ; or 451-600 mm for two <i>storey</i> ; or more than 600 mm for above two <i>storey</i>	High	2
	0-100 mm for single <i>storey</i> ; or 0-450 mm for two <i>storey</i> ; or less than 600 mm for above two <i>storey</i>	Very high	5
Envelope complexity	Simple shape with single cladding type	Low	0
	Complex shape with not more than two cladding types	Medium	1
	Complex shape with more than two cladding types	High	3
	As for high risk but with fully exposed roof- to-wall junctions	Very high	6
Decks, porches and balconies	None; or timber slat deck or porch at ground level	Low	0
	Fully covered in plan view by roof; or timber slat deck attached at first or second floor level	Medium	2
	Balcony exposed in plan view at first floor level; or balcony cantilevered at first floor level	High	4
	Balcony exposed in plan view at second floor level or above; or balcony cantilevered at second floor level or above	Very high	6

Notes to Table FV1.1:

1. Eaves width is measured horizontally from the external face of any wall cladding to the outer edge of any overhang, including fascia and external gutters.

2. Barriers to prevent falling and parapets are considered as 0 mm eaves.

(b) Test specimen

The test specimen must incorporate—

- (i) representative samples of openings and joints, including—
 - (A) vertical and horizontal control joints; and
 - (B) wall junctions; and
 - (C) *windows* or doors; and
 - (D) electrical boxes; and
 - (E) balcony drainage and parapet flashings; and
 - (F) footer and header termination systems; and
- (ii) for a *cavity wall*—
 - (A) a transparent material for a proportion of the internal wall lining (to provide an unobstructed view of the *external wall* cladding) with sufficient structural capability and similar air tightness to resist the applied wind pressures; and
 - (B) a 15 mm diameter hole in the internal wall lining below a *window*.

(c) Test procedure

- (i) The test procedure for a *direct fix cladding wall* or *unique wall* must be as follow

- (A) Apply 100% positive and negative serviceability wind pressures to the external face of the test specimen for a period of not less than 1 minute each.
- (B) Apply static pressure of either 300 Pa or 30% serviceability wind pressure, whichever is higher, in accordance with the water penetration test procedure at clause 8.5.2 of AS/NZS 4284.
- (C) Apply cyclic pressure in accordance with— (aa) the three stages of Table FV1.2; and

(bb) the water penetration test procedure at clause 8.6.2 of AS/NZS 4284.

Table FV1.2

Stage number	Serviceability wind pressure
1	15% to 30%
2	20% to 40%
3	30% to 60%

- (ii) The test procedure for a *cavity wall* must be as follows:
 - (A) Apply 100% positive and negative serviceability wind pressures to the external face of the test specimen for a period of not less than 1 minute each.
 - (B) Apply static pressure of either 300 Pa or 30% serviceability wind pressure, whichever is higher, in accordance with the water penetration test procedure at clause 8.5.2 of AS/NZS 4284.
 - (C) Apply cyclic pressure in accordance with— (aa) stage 3 of Table FV1.2; and

(bb) the water penetration test procedure at clause 8.6.2 of AS/NZS 4284.

(D) To simulate the failure of the primary weather-defence or sealing, the following procedure must be applied to the test specimen:

(aa) Insert 6 mm diameter holes through the external face of the *cavity wall* in all places specified below: (AA) Wall/window or wall/door junctions at $\frac{3}{4}$ height.

(BB) Immediately above the head flashing.

(CC) Through external sealing of the horizontal and vertical joints. (DD) Above any other penetration detail not covered by (AA) to (CC).

(bb) Repeat the static and cyclic pressure tests of (B) and (C).

(cc) Within 30 minutes of the completion of (bb), remove the internal lining of the *cavity wall* and check for compliance with (d).

(dd) With the internal lining removed, apply a final static pressure test at 50 Pa for a period of 15 minutes.

(d) Compliance

(i) A *direct fix cladding wall* and *unique wall* are verified for compliance with FP1.4 if there is no presence of water on the inside surface of the facade.

(ii) A *cavity wall* is verified for compliance with FP1.4 if there is no presence of water on the removed surface of the cavity, except that during the simulation of the failure of the primary weather-defence or sealing, water may—

(A) transfer to the removed surface of the cavity due to the introduced defects (6 mm holes);
and

(B) contact, but not pool on, battens and other cavity surfaces.

(e) Test report

The test report must include the following information:

(i) Name and address of the person supervising the test.

(ii) Test report number.

(iii) Date of the test

(iv) Cladding manufacturer's name and address.

(v) Construction details of the test specimen, including a description, and drawings and details of the components, showing modifications, if any.

(vi) Test sequence with the pressures used in all tests.

For each of the static and cyclic pressure tests, full details of all leakages, including position, extent and timing

Best Regards,

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 **16. NCC VERIFICATION METHOD FV1.1 AND V2.2.1 AS4284.pdf**
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 **Acronem ASKIN Weatherproofing Test Report 2017-094-S1NCC 2016 vs NCC 2019 200310.pdf**
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