

Determination 2006/83

Refusal of a code compliance certificate for a building with a monolithic cladding system at 64 Village Park Drive, Tauranga



1. The dispute to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ (“the Act”) made under due authorisation by me, John Gardiner, Determinations Manager, Department of Building and Housing, for and on behalf of the Chief Executive of that Department. The applicants are the owners, Mr and Mrs Hewson (“the applicants”) and the other party is the Tauranga District Council (“the territorial authority”).
- 1.2 The dispute for determination is whether the territorial authority’s decision to decline to issue a code compliance certificate for a 5-year-old house because it was not satisfied that the monolithic cladding to the walls of the house complied with clauses B2 “Durability” and E2 “External Moisture” of the Building Code² (First Schedule, Building Regulations 1992) is correct.
- 1.3 The question to be determined is whether I am satisfied on reasonable grounds that the monolithic wall cladding as installed to the walls of the building (“the cladding”), complies with the Building Code (see sections 177 and 188 of the Act). By “the monolithic wall cladding as installed” I mean the components of the system (such as the backing materials, the flashings, the joints and the coatings) as well as the way the components have been installed and work together.

¹ The Building Act 2004 is available from the Department’s website at www.dbh.govt.nz.

² The Building Code is available from the Department’s website at www.dbh.govt.nz.

- 1.4 In making my decision, I have considered the submissions of the parties, the report of the independent expert commissioned by the Department to advise on this dispute (“the expert”), and the other evidence in this matter. I have evaluated this information using a framework that I describe more fully in paragraph 6.1. I have not considered any other aspects of the Act or the Building Code.

2. The building

- 2.1 The building work consists of a detached house situated on a sloping site, which is in a medium wind zone for the purposes of NZS 3604³. The house is one-storey high, with the foundations stepped to suit the slope. Construction of the house is conventional light timber frame, with a concrete slab, concrete block foundations and retaining walls, aluminium windows and doors, monolithic wall cladding and a 25° concrete tile hipped roof. The house shape is fairly simple in plan and form, and eaves projections are 575mm overall, except for several recessed areas with deeper roof overhangs. A small gable extends from the main roof to form an entrance canopy that is supported by monolithic-clad columns.
- 2.2 The specification makes no mention of treatment to the wall framing, and the expert has noted that he found no evidence of treatment on timber he was able to inspect. I therefore consider that the external wall framing is unlikely to be treated.
- 2.3 The cladding system to the building is what is described as monolithic cladding, and is a “Harditex” system with 7.5 mm thick fibre cement sheets fixed through the building wrap to the framing, and finished with an applied textured coating system.
- 2.4 I have seen no evidence of producer statements or warranties for the cladding.

3. Sequence of events

- 3.1 The territorial authority issued a building consent on 3 July 2000. It appears that all inspections were undertaken by Bay Building Certifiers (“the building certifier”), although I have not seen the building certifier’s scope of engagement.
- 3.2 The building certifier made various inspections during the course of construction. The building certifier’s “Record of assessment” notes that pre-line and final building inspections were undertaken, although dates and details are not provided.
- 3.3 It appears that the applicants engaged Bay Inspections to carry out a final plumbing and building inspection. Bay Inspections is a contractor providing building regulatory services to the territorial authority.
- 3.4 In a letter to the applicants dated 9 December 2005, the agent noted that an assessor for the agent had inspected the house on 21 November 2005 and:

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

As a result of [the assessor's] inspection of visible building elements only and on the assumption that all the required earlier inspections had been carried out, [the assessor] is satisfied that the building was properly completed in accordance with the Building Code requirements that existed at the time of construction.

- 3.5 The applicants provided a copy of the agent's letter to the territorial authority, but it appears that the territorial authority did not consider the letter to be sufficient evidence of compliance as a code compliance certificate was not issued.
- 3.6 The territorial authority did not issue a notice to fix as required under section 164(2) of the Building Act 2004.
- 3.7 The application for a determination was received by the Department on 24 March 2006.

4. The submissions

- 4.1 Within the application, the applicants noted that the matter for determination was a "Ruling to confirm home is weathertight".
- 4.2 The applicant forwarded copies of the plans and specifications.
- 4.3 The territorial authority made no submission and forwarded copies of:
 - the consent documentation
 - the building certifier's inspection summary
 - the letter from the agent to the applicants dated 9 December 2005.

In making no submission, the territorial authority has not provided any evidence to me as to why it does not believe the house is code compliant. I do not believe that this is acceptable. It is important that should an owner be declined a code compliance certificate, they be given clear reasons for that decision through the issuing of a notice to fix. The owners can then either act on that notice to fix or apply for a determination if they dispute those reasons.

- 4.4 Copies of the submissions and other evidence were provided to each of the parties. Neither party made any further submission in response to the submission of the other party.
- 4.5 On 21 June 2006 the Department provided the parties with copies of the draft determination which was accepted by the territorial authority on 27 June 2006.
- 4.6 In a letter to the Department dated 13 July 2006, Ms Holloway, the solicitor for the applicants ("the lawyer") noted that the applicants did not accept two of the items to be rectified (refer paragraph 6.3.1):

- Only two walls exceed the length requiring control joints, and these walls include windows which reduce the effective length to less than 5.4m
- Sealant was applied behind the window jamb flanges, but this has been tightly compressed and therefore difficult to trace.

I have considered these comments and respond in paragraph 7.1.

5. The expert's report

5.1 The expert inspected the claddings of the building on 10 May 2006, and furnished a report that was completed on 30 May 2006. The expert noted that the “general standard of workmanship is good and the dwelling has been well maintained” and the wall cladding appeared to be “well fixed and aligned”, with no visible cracking and “no evidence of flaking or staining”. The expert noted that a crack in the cladding had been recently repaired and repainted.

5.2 The expert scraped away a small section of coating at the sill to jamb junction of a window, and noted that the windows were face-fixed without sill flashings. I accept that the location opened is typical of similar locations around the building.

5.3 The expert took non-invasive moisture readings through linings of exterior walls throughout the house, and no elevated readings were noted. 10 invasive moisture readings were taken through the wall cladding, at window sills, bottom plates and other risky areas, and 1 elevated reading (26%) was recorded in the bottom plate to the right of the garage door. Moisture levels above 18% recorded after cladding is in place generally indicate that external moisture is entering the structure.

5.4 The expert made the following specific comments on the cladding:

- the clearance from the bottom of the cladding to the paving is inadequate on the east wall of the garage
- vertical control joints have not been provided to walls where the length of Harditex exceeds the 5.4m limit without such a joint recommended by the manufacturer (I note that two walls of 9.6m and 6.2m on the south elevation and one wall of 6.2m on the west elevation exceed 5.4m in length)
- there is no “Inseal” tape or sealant between the window jamb flanges and the cladding, contrary to the manufacturer’s recommendation.

5.5 The expert also made the following comments:

- the window head flashings do not project sufficiently beyond the window jambs, but the window heads are well protected beneath the eaves
- the ends of the roof apron flashings are reliant on sealant for weatherproofing, but are well protected beneath the eaves.

5.6 A copy of the expert's report was provided to each of the parties on 1 June 2006.

6. Evaluation for code compliance

6.1 Evaluation framework

6.1.1 In evaluating the design of a building and its construction, it is useful to make some comparisons with the relevant Acceptable Solution⁴, in this case E2/AS1, which will assist in determining whether the features of this house are code compliant. However, in making this comparison, the following general observations are valid:

- Some Acceptable Solutions cover the worst case, so that they may be modified in less extreme cases and the resulting alternative solution will still comply with the Building Code.
- Usually, when there is non-compliance with one provision of an Acceptable Solution, it will be necessary to add some other provision to compensate for that in order to comply with the Building Code.

6.1.2 The approach in determining whether building work is weathertight and durable and is likely to remain so, is to apply the principles of weathertightness. This involves the examination of the design of the building, the surrounding environment, the design features that are intended to prevent the penetration of water, the cladding system, its installation, and the moisture tolerance of the external framing. The Department and its antecedent, the Building Industry Authority, have also described weathertightness risk factors in previous determinations⁵ (refer to Determination 2004/1 *et al*) relating to cladding and these factors are also used in the evaluation process.

6.1.3 The consequences of a building demonstrating a high weathertightness risk is that building solutions that comply with the Building Code will need to be more robust. Conversely, where there is a low weathertightness risk, the solutions may be less robust. In any event, there is a need for both the design of the cladding system and its installation to be carefully carried out.

6.2 Weathertightness risk

6.2.1 In relation to these characteristics I find that this house:

- is built in a medium wind zone
- is a maximum of one storey high
- is fairly simple in plan and form
- has eaves projections of 575mm above most walls

⁴ An Acceptable Solution is a prescriptive design solution approved by the Department that provides one way, but not the only way, of complying with the Building Code. The Acceptable Solutions are available from the Department's website at www.dbh.govt.nz.

⁵ Copies of all determinations issued by the Department can be obtained from the Department's website.

- has monolithic cladding which is fixed directly to the framing
- has external wall framing that is unlikely to be treated, so providing no resistance to the onset of decay if the framing absorbs and retains moisture.

6.2.2 When evaluated using the E2/AS1 risk matrix, all elevations of this house demonstrate a low weathertightness risk rating. The matrix is an assessment tool that is intended to be used at the time of application for consent, before the building work has begun and, consequently, before any assessment of the quality of the building work can be made. Poorly executed building work introduces a risk that cannot be taken into account in the consent stage but must be taken into account when the building as actually built is assessed for the purposes of issuing a code compliance certificate.

6.3 Weathertightness performance

6.3.1 Generally the cladding appears to have been installed in accordance with good trade practice. However, several junctions, penetrations and edges are not well constructed, and these areas are as described in paragraph 5.4 and in the expert's report as being the:

- inadequate cladding clearance to the east wall of the garage
- lack of vertical control joints on 3 walls
- lack of sealing between the window flanges and the cladding.

6.3.2 I note the expert's comments in paragraph 5.5, and accept that the head flashing projections and the ends of the apron flashings are well protected beneath the roof projections. I therefore consider that these areas are weatherproofed to a level that is adequate for their particular circumstances.

6.3.3 I note that E2/AS1 does not require the provision of a drained cavity behind flush-finished fibre cement sheet cladding on buildings assessed as low-risk. I therefore consider that the wall cladding used on this low-risk house may be fixed directly to the framing. However, in such cases the external framing would need to be treated to resist the onset of decay if the framing absorbs and retains moisture.

7. Comments on the draft determination

7.1 I have considered the applicants' comments on the draft determination (refer paragraph 4.6) and respond as follows:

- The drawings indicate 3 walls exceeding 5.4m, as described in paragraph 5.5. The inclusion of windows within walls does not negate the requirement for control joints, as these are required in cladding above and below the windows.

- The expert removed coating at one window as described in paragraph 5.2, and noted that this window lacked a compression seal behind the window jamb flanges. Based on this evidence, I consider it likely that other windows will lack seals.

8. Conclusion

- 8.1 I am satisfied that the current performance of the cladding is not adequate because it is allowing water penetration into at least one area of the building at present. Consequently, I am satisfied that the building does not comply with clause E2 of the Building Code.
- 8.2 In addition, the building is also required to comply with the durability requirements of clause B2. Clause B2 requires that a building continues to satisfy all the objectives of the Building Code throughout its effective life, and that includes the requirement for the house to remain weathertight. Because the cladding faults on the building are likely to allow the ingress of moisture in the future, the house does not comply with the durability requirements of clause B2.
- 8.3 Subject to further investigations that may identify other faults, I consider that, because the faults that have been identified with the cladding system occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraphs 6.3.1 should be expected to result in the building becoming and remaining weathertight and in compliance with clauses B2 and E2.
- 8.4 Effective maintenance of claddings (in particular of monolithic cladding) is important to ensure ongoing compliance with clauses B2 and E2 of the Building Code and is the responsibility of the building owner. Clause B2.3.1 of the Building Code requires that the cladding be subject to “normal maintenance”, however, that term is not defined in the Act.
- 8.5 I take the view that normal maintenance is that work generally recognised as necessary to achieve the expected durability for a given building element. With respect to the cladding, the extent and nature of the maintenance will depend on the material, or system, its geographical location and level of exposure. Following regular inspection, normal maintenance tasks shall include but not be limited to:
- where applicable, following manufacturers’ maintenance recommendations
 - washing down surfaces, particularly those subject to wind-driven salt spray
 - re-coating protective finishes
 - replacing sealant, seals and gaskets in joints.
- 8.6 As the external wall framing of this building is likely to be untreated, periodic checking of its moisture content should also be carried out as part of normal maintenance.

- 8.7 I must emphasise that each determination is conducted on a case-by-case basis. Accordingly, the fact that a particular cladding system has been established as being code compliant in relation to a particular building does not necessarily mean that the same cladding system will be code compliant in another situation.
- 8.8 In the circumstances, I decline to incorporate any waiver or modification of the Building Code in this determination.

9. The decision

- 9.1 In accordance with section 188 of the Act, I hereby determine that the monolithic cladding system as installed does not comply with clause E2 of the Building Code. There are several items to be remedied to ensure that the house becomes and remains weathertight and thus meets the durability requirements of the code. Consequently, I find that the house does not comply with clause B2. Accordingly, I confirm the territorial authority's decision to refuse to issue a code compliance certificate.
- 9.2 I also find that rectification of the items outlined in paragraph 6.3.1 will consequently result in the house being weathertight and in compliance with clauses B2 and E2. Work to correct these items may expose additional associated defects that are not yet apparent. All rectification work is to be completed to the approval of the territorial authority.
- 9.3 I note that the territorial authority has not issued a notice to fix. A notice to fix should be issued requiring the owners to bring the house into compliance with the Building Code. The notice to fix may list the items to be rectified but it should not specify how compliance is to be achieved as this is for the owner to propose and for the territorial authority to accept or reject. It is important to note that the Building Code allows for more than one method of achieving compliance.
- 9.4 I would suggest that the parties adopt the following process to meet the requirements of paragraph 9.3. Initially, the territorial authority should issue a notice to fix, listing all the items that the territorial authority considers to be non-compliant. The owner should then produce a response to this in the form of a detailed proposal, produced in conjunction with a competent and suitably qualified person, as to the rectification or otherwise of the specified issues. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 1 September 2006.

John Gardiner
Determinations Manager