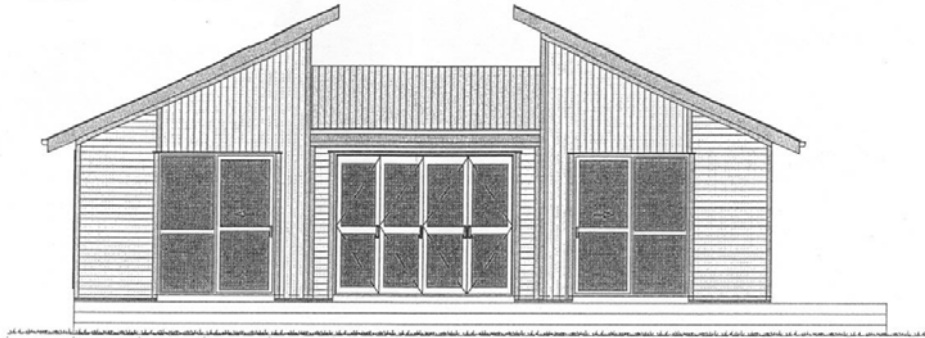


Determination 2007/102

Determination regarding the refusal of a code compliance certificate for a house at 22 Fyfe Road, Waihi Beach because it did not comply with the Compliance Documents



1 The matter 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, Manager Determinations, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department. The applicant is the Western Bay of Plenty District Council (“the territorial authority”) and the other parties are the owners, Mr O’Connor and Mr Varga, acting through the builder, Mr M Tipa of McRaeway Homes, (“the builder”). I also consider that the builder is a person with an interest in this determination.
- 1.3 The matter for determination is whether the territorial authority’s decision to decline to issue a code compliance certificate for the 1-year-old house is correct. The refusal arose because the territorial authority considered that the weatherproofing at the cladding corners and the external joinery unit perimeters as detailed in the approved building consent documents and as-built (“the cladding details”) did not meet the requirements of the Compliance Document E2/AS1.

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

- 1.4 In order to determine that matter, I must first decide whether the building work complies with the Building Code² (First Schedule, Building Regulations 1992).
- 1.5 In making my decision, I have considered the submissions of the parties, the report of the independent expert commissioned by the builder, and the other evidence in this matter. I have evaluated this information using a framework that I describe more fully in paragraph 6.
- 1.6 In this determination, unless otherwise stated, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code. References to figures, unless otherwise stated, are to the figures in E2/AS1.

2 The building work

- 2.1 The building work to be considered in this determination involves the flashing details to the cladding of a single-storey “Gullwing Bunkroom” kitset house. The house is situated on a level site that is in a high wind zone for the purposes of NZS 3604³. The house is simple in form and plan and is of conventional light timber frame constructed on a suspended timber floor. The pitched roofs have wall-to-roof junctions and 400mm wide eaves and 300mm wide verge projections. The eaves to the upper roof edges have an upward slope.
- 2.2 The external cladding to the house is corrugated steel that is fixed horizontally or vertically, depending on its location on the house. The corrugated steel is installed on cavity battens irrespective of the orientation of the sheets.
- 2.3 The flashings to the internal and external corners of the cladding and to the external joinery are all formed from 0.55 mm galvanised steel.
- 2.4 The cladding details at the internal and external corners of the cladding include back and cover flashings. The back flashings are fixed to timber battens over 50mm wide polyethylene damp proof course and the cover flashings are fixed through the cladding. The heads and sills of the external joinery units have shaped flashings and their jambs have both back and cover flashings with the back flashing fixed to battens over 50mm wide strips.
- 2.5 Air seals are installed between the reveals of the joinery units and the framing.
- 2.6 Among the documents to which reference is made in the specification for the wall cladding is “clause 9.6 ‘Profiled metal’ of NZBC E2/AS1”. This clause, which has the full title of “Profiled Metal Wall Cladding”, includes details of corner and window flashings for both vertical and horizontal metal claddings. Under the heading of “Install Flashings”, the wall cladding specification says:

Install flashings, covers and soakers as detailed on the drawings and to BRANZ Bulletins 304 flashing design and 448 Domestic flashing installation.

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

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

3 Sequence of events

- 3.1 The territorial authority issued a building consent (No 74072) on 16 January 2006 under the current Act.
- 3.2 The consented documents included drawings containing details for the cladding and for the installation of the windows.
- 3.3 Page 4 of the form “Application for . . . Building Consent” requires the applicant to nominate the means by which the proposed work will comply with individual clauses of the Building Code. The applicant has nominated “AS1” as the means of complying with E2 “External Moisture”.
- 3.4 The territorial authority carried out various inspections during the construction of the house from 27 January 2006, culminating in a final inspection on 18 April 2006. In a letter to the applicants dated 21 April 2006, the territorial authority listed some items that required rectifying. One of these items was:
4. Installation of foam weather sealing to windows and corner flashings.
- 3.5 From 27 April 2006 to 31 May 2007, extensive correspondence passed between the territorial authority, the owners, the builder, various advisors, and other interested parties in regard to the installation of the foam weather sealing to the relevant flashings (“the sealing”). I summarise what I consider to be the main points arising from this correspondence, and which are relevant to the current situation:
- The territorial authority is refusing to issue a code compliance certificate as it insists that the sealing does not meet the requirements of E2/AS1. The territorial authority has also initiated this determination, and at the request of the builder, has suspended issuing a notice to fix.
 - The territorial authority has claimed that “the person who completed the building consent application form did state that it was their intention to comply with the requirements of E2/AS1 “External Moisture”. The territorial authority considers that the requirements of E2/AS1 are not met if the sealing is not installed.
 - The owners consider that the installation of the sealing is necessary but do not wish to pay for it.
 - The builder stated that the detail in question had been accepted as an alternative solution in some 170 similar houses built around New Zealand, and the Building Code permitted alternative solutions to be employed in building work. The builder noted that the territorial authority had accepted the plans and details at the time when the building consent was issued.
 - The supplier of the cladding materials has indicated that if the back flashings each side of the openings extend to the bottom of the drained cavity, then the sealing would not be required.

3.6 The builder engaged the services of a building consultant who is an expert in the field of metal claddings (“the consultant”). The consultant produced a report dated 29 April 2007, to which I refer in detail in paragraph 5.

3.7 The Department received the application for a determination on 22 June 2007.

4 The submissions

4.1 The territorial authority forwarded copies of:

- the consent drawings and the specification
- the building consent and consent application details
- details of inspections undertaken by the territorial authority
- the correspondence referred to in paragraph 3.3
- The consultant’s report of 29 April 2007
- the agreement for sale and purchase of the land.

4.2 Copies of the documents supplied by the territorial authority were forwarded to the owners and the builder. None of the parties made any further submissions in response to the submission of another party.

4.3 In response to an email from the Department dated 24 July 2007, the builder confirmed that all the wall cladding was installed on a cavity and that:

I can also confirm that there is building wrap between the timber framing and . . . all battens. [For] vertical cladding . . . we have black building paper between the cladding and the outside face of the battens. [For] all battens supporting horizontal cladding (vertical battens) there is a 90mm DPC between the cladding and the outside face of the battens. We considered this practice important particularly for vertical cladding with horizontal battens.

Detail 13 shows battens for both vertical and horizontally fixed cladding.

4.4 The draft determination was sent to the parties for comment on 1 August 2007. The owners accepted the draft.

4.5 In a letter to the Department dated 16 August 2007, the territorial authority did not accept the draft determination saying:

It was always the intention of the builder to use E2/AS1 as means of compliance as stated on the building consent application form (see email dated 27 April 2006 from [the builder]). The inclusions of compressible foam strips as shown in E2/AS1 were overlooked by ourselves on the plans.

[The builder] stated that this detail had been approved on numerous occasions. . . by a South Island Territorial Authority. [Council investigated] . . . these claims and found

that they had not had the same scenario from [the builder] but would view the detail very similar to the way [Council] has.

I spoke to [an officer of the Department] in May 2006 and explained the situation to him. [I was advised] that the building work must still meet the requirements of the Building Code as stated in Section 17 of the Building Act 2004 regardless of something being overlooked on the plans.

We are also disappointed that no site visit has been made by an expert appointed by the Department . . . The . . . report supplied by the builder appears to have been accepted by yourselves without question . . . rather than visiting the site.

4.6 I make the following comments in response to the territorial authority's submission:

- While I accept that the builder had nominated the acceptable solution for Clause E2 as the proposed means of compliance on the application form building consent, I do not believe this can be fully relied upon and take the place of the detailed checking of consent documents.

The email, dated 27 April 2007, referred to by the territorial authority did not form part of the consent documents, and although the meaning of the email is not exact, it appears to suggest that the details concerned were an acceptable alternative to those in E2/AS1 (the email says: "*please regard this as a acceptable solution to the detail described in E2/AS1 . . .*").

- approved at time of consent.
- The 2004 Act places greater emphasis on the consent documents being complete and describing building work that will be code compliant.
- I did not appoint an expert in this instance as there was no dispute that the as-built details were the same as those described in the consented plans.

4.7 The builder responded to the territorial authority's submission in an email to the Department dated 27 August 2007. The builder strongly disputed the statements made by the territorial authority. In particular the builder said:

It is acknowledged that the owner/applicant for the consent 'ticked' the box that the cladding details were to comply with E2/AS1. When processing the application [Council] should have known the difference between the details submitted and E2/AS1.

We can provide evidence identifying . . . 64 of the same design house and same details with 16 TA's built between Jan. 2005 to Dec. 2006.

We deliberately chose [a consultant] who we considered the most . . . respected authority on the subject matter. [The consultant] gave his detailed opinion without any influence by us.

5 The consultant's report

5.1 As noted in paragraph 3.4, the builder engaged an independent consultant to inspect the consented plans in order to determine whether the building, and in particular the flashings, complied with the relevant requirements of the building code. I accept that the consultant is an expert in the field of metal cladding applied to buildings, and accordingly have given appropriate consideration to the evidence produced in the consultant's report.

5.2 The consultant commented in detail on the plans and I summarise those comments that I consider relevant to my decision, as follows:

- The consented plans clearly detailed the flashings and no foam filler blocks were shown.
- The consent was issued under an alternative solution and, as E2/AS1 is not a mandatory document, the legal requirements for the cladding extended to clauses B2 and E2 only.
- In the consultant's opinion, there were only two circumstances where a code compliance certificate could be withheld:
 1. When the originally approved details have been altered, or
 2. When the territorial authority, on reasonable grounds, considered that the as-built details did not comply with the requirements of B2 or E2.
- A cavity had been provided to both the vertical and horizontal cladding, whereas E2/AS1 requires a cavity only to horizontal cladding.
- While E2/AS1 shows only one flashing to a corner of the cladding, the details in question have both back and cover flashings. Figure 96 of E2/AS1 does not show an external flashing, however, the external joinery units of the house have a flashing installed.
- If the territorial authority had doubts about the flashings as detailed, it should have raised those when the flashings were being installed.

5.3 The consultant has been informed that the as-built details are the same as those set out on the consented plans. I note too that the approved plans provided by the territorial authority also have similar details to those described by the consultant, and that the territorial authority has not raised any issues regarding any change of detail. Accordingly, I accept that the flashings were installed in accordance with the details approved for the building consent.

6 Evaluation framework for code compliance

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

- Some Acceptable Solutions are written conservatively to 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 one or more other provisions to compensate for that in order to comply with the Building Code.

6.2 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 (for example, Determination 2004/1) relating to cladding and these factors are also used in the evaluation process.

6.3 The consequence 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.

6.4 In relation to these characteristics I find that the house:

- is single storey and is simple in form and plan
- is in a high wind zone
- has 400mm wide eaves and 300mm wide verge projections that provide good protection to the cladding below them.

6.5 I am satisfied that the house is a relatively low-risk structure enhanced by the inclusion of a cavity behind the vertical cladding where one is not required by E2/AS1. The external wall framing is treated to H1.2.

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.

- 6.6 Finally, I note that the only matter that the territorial authority has raised is the lack of compressed foam seals to the flashings. It has not questioned the quality of the materials used or the as-built installation of the flashings themselves.

7. Discussion

- 7.1 Under the Act, if a territorial authority is satisfied on reasonable grounds that building work complies with the building consent, it must under section 94(1)(a) issue a code compliance certificate, unless certain other conditions, which do not apply in this case, are not met. A territorial authority therefore is required to assess whether the work as described in the building consent application will comply with the building code.
- 7.2 I acknowledge that the applicant stated, in the application for building consent, that E2/AS1 would be the means by which the requirements of clause E2 would be met. However, the drawings include external details that are an alternative to the details contained in E2/AS1. In my view the differences in the proposed means of complying with E2 should have been clarified with the applicant before the building consent was issued.
- 7.3 The flashings in question have to comply with clauses B2 and E2 of the Building Code. E2/AS1 is one method, but it may not be the only method, of achieving code-compliance. Alternative solutions can also be considered, provided that they can also be shown to comply with the Code.
- 7.4 As stated in paragraph 6.1, E2/AS1 is useful for comparing with any proposed alternative solution, such as the installed wall cladding flashings. I have also taken into account the relevant observations of the consultant as set out in his report. In the following paragraphs references to figures are to those in E2/AS1.

Corner flashings – vertical cladding

- 7.5 Figure 94 details the internal and external corner flashings to vertical claddings and only one flashing is shown in each case, without the addition of a foam seal. As the details in similar situations show both a back and a cover flashing I accept that the consented details provide enhanced weatherproofing compared with those required by E2/AS1.

Corner flashings – horizontal cladding

- 7.6 Figure 96 details the internal and external corner flashings to horizontal claddings, and in each case shows one profiled flashing with profiled foam insert strips to each edge that adjoins the cladding. By comparison, while the consented details lack the foam inserts, both back and cover flashings are installed. I accept that the consented details at these locations are at least as effective as the details shown in figure 96.

Windows flashings - vertical cladding

- 7.7 Figure 95 details the flashings around windows fixed to walls that have vertical claddings. One profiled flashing is installed at all the perimeters of the windows and the jambs and sills also have foam seals. The consented details show single flashings to the window heads and sills and both back and cover flashings to the jambs but no foam seals are installed at any of the window perimeters. However, I am of the opinion that the consented head and jamb details are at least as effective as those shown in figure 95.
- 7.8 The consented sill detail does not have the additional protection of a foam seal. However, I note that the flashing extends an additional 55mm down over the cladding compared with the figure 95 detail. In addition, the cavity behind the cladding assists the drainage of any moisture ingress.

Windows flashings – horizontal cladding

- 7.9 Figure 99 details the flashings around windows fixed to walls that have horizontal claddings. In general terms the details are the same as set out in figure 95, with the exception of the sill detail, which does not show a foam seal. The consented details are as described in paragraphs 7.7 and 7.8. I accept that the consented details, including those at the window sills, are equivalent to those detailed in figure 99.
- 7.10 I am therefore of the view that the consented flashing details are an acceptable alternative to the details described in E2/AS1 and that they comply with Building Code Clauses B2 and E2.

8. The decision

- 8.1 In accordance with section 188 of the Building Act 2004, I hereby determine that:
- the consented details of the flashing to the corners and external joinery units of the house are code compliant
 - the territorial authority should now issue a code compliance certificate in respect of the house.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 6 September 2007.

John Gardiner
Manager Determinations