



Determination 2011/081

Regarding the refusal to issue a certificate of acceptance for repairs to a tiled deck on a house at 58 Columbia Crescent, Beachlands, Auckland



1. The matters 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 owner, T Guy (“the applicant”) and the other party is the Auckland Council² (“the authority”), carrying out its duties as a territorial authority or building consent authority.
- 1.2 This determination arises from the authority’s decisions to issue a notice to fix for completed repairs to a deck, because a building consent had not been issued to carry out the work, and to refuse to issue a certificate of acceptance for the repaired deck because it was not satisfied that it complied with certain clauses³ of the Building Code (Schedule 1, Building Regulations 1992). The authority’s concerns related primarily to the weathertightness and durability of the repair work (see paragraph 3.5).

¹ The Building Act, Building Code, compliance documents, past determinations and guidance documents issued by the Department are all available at www.dbh.govt.nz or by contacting the Department on 0800 242 243.

² Including in its previous capacity as Manukau City Council. The term authority is used for both.

³ 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.

1.3 The matters to be determined⁴ are therefore whether the authority was correct in its decisions, in regard to the compliance of the tiled deck only, to issue a notice to fix and to refuse to issue a certificate of acceptance for the repair work. In deciding these matters, I must consider:

1.3.1 Matter 1: The notice to fix

Whether the authority correctly exercised its powers in issuing the notice to fix for the repair work. (I consider this matter in paragraph 5.)

1.3.2 Matter 2: Weathertightness of the repaired deck

Whether the repaired deck (“the deck”) complies with Clause E2 External Moisture and Clause B2 Durability of the Building Code. The deck includes the components of the system (such as the membrane, the substrates, the deck tiles and the junctions of the repaired deck with adjacent elements) as well as the way the components have been installed and work together. (I consider this matter in paragraph 7.)

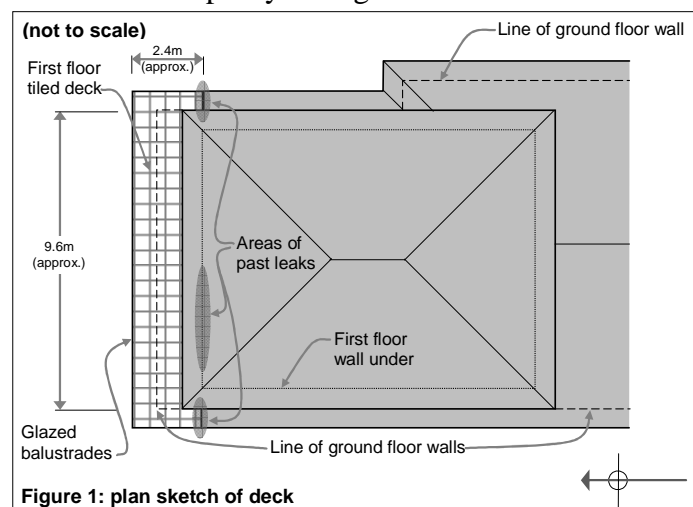
1.4 I have received no information relating to the original house and this determination is therefore limited to the above matters. In making my decision, I have considered the submissions of the parties, the report of the expert commissioned by the Department to advise on this dispute (“the expert”) and other evidence in this matter.

2. The building work

2.1 The existing house is situated in a high wind zone for the purposes of NZS 3604⁵ and was constructed and issued with a code compliance certificate in 2007.

2.2 The house is two-storeys high in part, with conventional light timber frame, concrete foundations and floor slab, brick veneer and weatherboard claddings, aluminium windows and pressed metal tile hipped roofs. The ground floor roof continues as a lean-to along the east and west walls; and the deck extends from the outer edges of those lean-tos along the upper floor of the north elevation. The subject repaired deck is assessed as having a high weathertightness risk.

2.3 The 23m² deck is situated partly over ground floor rooms as shown in Figure 1:



⁴ Under sections 177(1)(b), 177(3)(b) and 177(3)(e) of the Act

⁵ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

2.4 The original deck

2.4.1 According to the submitted drawing, the original deck included:

- a 20mm ‘tan ply’ substrate, which was fixed to 100 x 50 ‘H3.1 nogs’ and packing to provide a fall across the deck of 3° (1:22).
- tiles adhered to a liquid-applied membrane, which:
 - formed an upstand behind the weatherboard and cavity cladding system
 - turned down over the face of the timber fascia at the deck edges
- balustrade posts side-fixed through spacing washers and fascias into framing.

2.4.2 The expert’s observations and construction photographs indicated:

- an ‘H3.2’ timber stamp on deck framing, with timber colour and texture indicating the framing was likely to be CCA-treated to H3.2
- plywood fixed directly to deck joists, with full depth blocking replacing nogs
- a pink-coloured screed providing cross falls generally less than 1° (1:60)
- an unidentified original ‘blue/green’ liquid-applied membrane
- what appears to be a separate black membrane tape upstand underlapping the wall wrap and overlapping the deck membrane.

2.5 The deck repairs

2.5.1 According to the applicant, the repair work followed leaks at deck doors (resulting from mitre joints and insufficient weep holes) and also at the ends of the deck. The applicant was of the view the original source of water entry were faulty roof tiles and flashings. The result was water finding its way between the original deck membrane and the ply substrate.

2.5.2 The drawing submitted in the application for determination (refer paragraph 4.2) showed the original deck construction as described in paragraph 2.4.1, with added notes indicating that the original tiles were lifted and the membrane showed ‘min damage from water in deck substrate’ and repairs included:

- overlaying original membrane with 4.5mm fibre-cement sheet
- two coats of liquid-applied membrane extended to top of interior flooring
- a ‘tanked edge’ over the timber fascia board
- the floor tiles replaced, with tile edges spaced away from balustrade posts.

2.5.3 However, the expert’s observations and construction photographs included:

- the original membrane partly removed, with some apparent lack of adhesion
- the new fibre-cement underlay nail-fixed through plywood
- the new membrane finished against the original membrane and not extended behind the upper wall cladding to the interior floor level
- tiles glued to the new membrane and upstand, with tile edges butted against balustrade posts and filler applied around post spacers, which extends along the upper part of the timber fascia to meet the tile edges.

2.6 The new membrane system

- 2.6.1 The deck membrane system is a proprietary microfibre-reinforced cement/acrylic waterproofing system. The manufacturer's specifications note that the product:
- is suitable for applying to 'cement sheet' painted with a bonding primer
 - is applied in two coats, with 'bond breaker tape' over junctions and joints
 - must be protected from UV light and is suitable for adhering tiles
 - surfaces must be sloped and must not pond
 - must be applied 'in accordance with the manufacturer's application instructions and AS3740 and AS4654.2 and local building codes and good trade practice'.

3. Background

- 3.1 The authority issued the original building consent for the house on 5 August 2007, according to an approval stamp on a submitted drawing. The house was completed and issued with a code compliance certificate during 2007. I have not seen a copy of the building consent, inspection records or the code compliance certificate.
- 3.2 Following the leaks as described in paragraph 2.5.1, the applicant arranged for repairs to be carried out in 2010. The designer proceeded on the basis that a consent was not needed for repairs if they were 'like for like' and no inspections were carried out by the authority.
- 3.3 After the authority was transitioned into the Auckland Council, various documents such as registers of approved products and practice notes became relevant to this repaired deck, including a practice note⁶ providing information on deck falls and other features. That note states that tiles directly fixed to membranes are outside the scope of E2/AS1 and, as such, are alternative solutions that require specific design details to be submitted for assessment and approval.

3.4 The authority's external membranes register

- 3.4.1 I note that the membrane is included in the authority's 'External membranes register (external use only)' dated 17 March 2011 ("the register"), which lists types of membranes along with their suitable use and limitations set by the authority.
- 3.4.2 The register entry refers to practice note 142 (see paragraph 3.3) and states:
- For use under ceramic or stone tiles, therefore may not comply with practice note 142. The following information is only applicable when compliance with practice note 142 is achievable.
- 3.4.3 Providing the above is satisfied, the register notes that the membrane is suitable for deck areas with a fibre-cement substrate, with conditions that include:
- support framing to be spaced no greater than 400mm
 - control joints in substrate to be carried through to the tile finish

⁶ Practice Note BLD-142-PN dated 1 July 2010

- a minimum deck fall of 2° (1:30)
- various documentation to be provided on completion (such as installation certificates, producer statements and warranties).

3.5 Subsequent to the repair work being undertaken, the authority wrote to the applicant on 18 February 2011 attaching a notice to fix. The authority took the view that the repair work had required a building consent and the notice required the applicant to apply for and to obtain a certificate of acceptance for the work. The notice to fix noted the following under the 'Particulars of contravention or non-compliance':

- a) The removal and replacement of water proof membrane and tiles on the upper deck over the top of an inhabitable area
- b) Due to the water proofing membrane replacement, external moisture and structural integrity of the inhabitable area at the northern end of the dwelling requires investigation by an Independent Building Surveyor.

3.6 I am not aware of the owner having commissioned an investigation as described in the notice to fix.

3.7 I have not seen correspondence from the authority refusing to issue a certificate of acceptance, however the applicant has submitted that he was verbally advised that an application for a certificate of acceptance would be refused

3.8 The Department received an application for a determination on 31 March 2011, which was accepted on 7 April 2011.

4. The submissions

4.1 The applicant briefly outlined the background to the situation and the repairs undertaken on the deck and roof junction flashings; listing reasons the authority had informally given for refusing an application for a certificate of acceptance for the work as:

1. Although the dwelling including the balcony deck element was granted building consent and subsequent CCC – the building works undertaken do not comply with NZ Building Code clauses B2 and E2.
2. The Auckland Council practice notes do not allow a balcony deck element having a tiled surface over a weatherproof LAM, [because it is] an alternative solution.
3. The moisture content of the existing ply sheet substrate that was subsequently wet, is not verified.
4. The drilled holes in the [ranchslider] sill transom will need acceptable durability verification from the window manufacturer.

4.2 The applicant forwarded copies of:

- detail drawings of the repairs
- a 'producer statement' signed by the builder
- the authority's letter and notice to fix dated 18 February 2011.

4.3 The authority did not acknowledge the application or make a submission in response, but did provide a copy of the notice to fix when requested by the Department.

4.4 A draft determination was issued to the parties for comment on 4 July 2011.

4.5 A response was received from the owner on 31 August, and from the authority on 6 September 2011. Both parties accepted the draft without comment.

Matter 1: The notice to fix

5. Discussion

5.1 According to the applicant, the authority initially considered that, if the deck repairs were “like for like”, they did not require a building consent. The authority then subsequently ‘changed its stance on the matter’ and accordingly issued a notice to fix for the completed repair work. The legislation applying to this situation is provided in paragraph 10 as an Appendix to this determination.

5.2 The requirement to obtain a building consent

5.2.1 In the case of these repairs, the work included alterations to the deck which involved components added to the original deck construction. In particular, an additional underlay of fibre-cement has been nail-fixed through the partially removed original membrane and plywood substrate, with fillers added along the deck fascia.

5.2.2 Section 41(1)(b) of the Act states that a building consent is not required for any building work described in Schedule 1 (refer Appendix 10.1.2), which includes repairs and maintenance where components are replaced with comparable components that are at least as good as the originals (for example, the replacement of a hot water cylinder in the same position). However, Schedule 1 also specifically excludes the repair or replacement of components that have failed to satisfy the durability provisions (for example, through failing to remain weathertight).

5.2.3 I take the view that the repair work undertaken to the deck does not fall within the exempt building work under schedule 1, due to the following factors:

- Original junctions associated with the deck did not remain weathertight and therefore failed to meet the durability requirements of the Building Code.
- The new components and assembly have the potential to significantly affect the weathertightness of the deck, as the completed repairs included:
 - partial removal of the original membrane
 - an added fibre-cement underlay distinctly different in composition and moisture resistance from the original plywood substrate
 - the underlay installed with nails penetrating the original deck membrane
 - application of a new liquid applied membrane
 - a junction with the original membrane upstand
 - added filler that reduces drainage capacity at the edges of the deck
 - overlay of the membrane with tiles without movement joints.

5.2.4 The circumstances leading to the repair work, together with the nature of that repair work, lead me to conclude that a building consent should have been sought for that building work. However, I also note that even if a building consent had not been required, these repairs would still need to comply with the Building Code.

5.3 The notice to fix

5.3.1 Section 164(1)(a) of the Act states that an authority may issue a notice to fix if it considers, on reasonable grounds, that a building consent has not been obtained for building work requiring a consent (see Appendix 10.2.1).

5.3.2 Having come to the view that a building consent should have been sought for the repair work to this deck, I consider that it was appropriate to issue a notice to fix in regard to the circumstances of this building work.

6. The expert's report

6.1 Seeking evidence on whether the repaired deck meets the performance requirements of the building code, I engaged an independent expert to view and photograph the repairs, in order to identify the extent of work carried out and make an assessment of the building work.

6.2 The expert inspected the repairs on 29 April and 3 June 2011; providing a report dated 17 June 2011, which included annotated photographs of the tiles, the joints, the junctions and the associated interior areas.

6.3 The report showed faulty roof tiles which were the most likely point of water entry but which have now been replaced.

6.4 Moisture entry

6.4.1 The expert observed evidence of the moisture damage to ceilings below the reported areas of past leaks. He also took non-invasive moisture readings in internal framing associated with the repair work, noting readings from 14% to 23%. In the cantilevered deck soffit, the expert recorded readings from 19% to over 50%.

6.4.2 In a second inspection, the expert removed soffit linings in areas where elevated readings were noted in his first visit and noted corroding fixings and moisture stains in framing, plywood and the underside of the soffit lining. The expert recorded invasive moisture readings from 17% to 25%.

6.4.3 The expert also removed a small area of ceiling lining below the upper wall and noted signs of past moisture below the reported leak. However, the expert observed that the framing and flooring appeared sound, with moisture readings generally about 13% which indicated no current moisture penetration beneath the former leak.

6.5 The expert agreed that the new drainage holes at joinery sills required verification by the manufacturer and commented on some other aspects of the window installation.

6.6 I note however, the original installation was inspected by the authority during construction and is covered by the code compliance certificate. As the joinery was

not removed during repair work and the windows did not appear to have been the source of moisture entry, these issues are not considered further in this determination.

6.7 The expert's report was forwarded to the parties on 24 June 2011.

Matter 2: Weathertightness of the repaired deck

7. Establishing code compliance of the deck

7.1 In order for me to form a view on the repaired deck, I need to establish what evidence is available. In the case of the deck membrane system and installation, that evidence is limited to the membrane manufacturer's general information and the builder's statement that work was carried out to the tiler's satisfaction.

7.2 The repaired deck

7.2.1 I have considered the construction photographs supplied by the applicant and the expert's comments and annotated photographs; and I note the following:

- There is no drip edge at deck edges, allowing water to run directly down the fascia. Coarse filler, applied around balustrade posts and along the upper part of the fascia up to the tile edge, is absorbing and holding moisture.
- This is confirmed by signs of moisture, and elevated moisture readings in the deck soffit framing indicate that the outer section of the deck floor is not currently weathertight.
- The 13% moisture readings in the interior floor framing indicate that the area of the past joinery leak is currently weathertight, although some other elevated readings indicate that there may be moisture penetrating elsewhere.
- Falls across the deck vary from 0.5° to 0.9° which, while generally providing a positive fall, is below the minimum 1° fall specified in E2/AS1. There is also evidence of ponding in one area, with efflorescence and wet tile grout.
- While falls along the deck are generally more than 1.2°, which is above the minimum 1° fall specified in E2/AS1, this does not speedily shed water due to the 9.6m length of the deck.
- Although roof to deck junctions have been repaired, the new roof parapet does not incorporate saddle flashings where it meets the walls.
- Construction photographs indicate that the original membrane and upstand appeared to have lost adhesion due to the leaks into the plywood. However the new membrane is applied over the original upstand at this critical junction.
- The lack of staggered joints and nail-fixing the fibre-cement underlay may allow undue movement at sheet joints. However, it is not possible to assess the reinforcement (if any) of underlay joints or the new membrane's condition.
- The 9.6m length of the deck floor does not incorporate movement joints within the tiled surface, although suppliers of tile adhesives commonly recommend

the installation of movement joints at a minimum of 3 metre centres for larger tiles to accommodate increased stress to the decreased number of joints.

7.2.2 Taking account of the expert's report and my comments in paragraph 7.2.1, I consider that the elevated moisture levels indicate that continuing moisture problems are likely. I consider that the following areas are not adequate, or cannot be assessed:

- the lack of fall across the deck, with ponding in one area
- the lack of control joints, with cracks to some tile joints
- the nail-fixing of the new fibre-cement underlay allowing undue movement
- the lack of drip edges at deck edges and drainage gaps at balustrade posts
- the lack of saddle flashings at the new roof parapet to deck junctions
- uncertainty regarding:
 - reinforcement to the unstaggered underlay joints
 - joining the new membrane to original deteriorated membrane upstands
 - drainage holes added to existing joinery.

7.2.3 Given the limited information on the newly installed membrane, the lack of inspection during its installation and its position hidden beneath the tile surface, I am also unable to assess the installed membrane system, including its substrate and junctions, against the manufacturer's instructions or other independent appraisals.

7.2.4 Taking the above into account, I can not conclude that the new deck membrane system was installed in accordance with good trade practice and to the manufacturer's instructions. I am therefore not satisfied that the repaired deck is likely to comply with the weathertightness and durability requirements of the Building Code.

8. Conclusion

8.1 I consider the expert's report and the other evidence has established that the current performance of the deck is not adequate because it is allowing moisture penetration into some areas of framing and substrates at present. Consequently, I am satisfied that the repaired deck does not comply with Clause E2 of the Building Code.

8.2 In addition, the repaired deck is 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 deck to remain weathertight. Because defects may allow ingress of moisture in the future, the repaired deck does not comply with the durability requirements of Clause B2.

9. The decision

9.1 In accordance with section 188 of the Building Act 2004, I hereby determine that:

- the repairs to the deck required a building consent, and accordingly I confirm the authority's decision to issue the notice to fix for the building work
- the repaired deck does not comply with Clauses E2 and B2 of the Building Code, and accordingly I confirm the authority's decision to refuse to issue a certificate of acceptance for the repaired deck.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 9 September 2011.

John Gardiner
Manager Determinations

10. Appendix: The legislation

10.1 Building consents

10.1.1 With regard to unauthorised changes, the relevant section of the Act is:

40 Buildings not to be constructed, altered, demolished, or removed without consent

- (1) A person must not carry out any building work except in accordance with a building consent.
- (2) A person commits an offence if the person fails to comply with this section.

10.1.2 Section 41 (1) (b) of the Act states that a building consent is not required for any building work described in Schedule 1, which includes:

Exempt building work

A building consent is not required for the following building work:

- (a) any lawful repair and maintenance using comparable materials, or replacement with a comparable component or assembly in the same position, of any component or assembly incorporated or associated with a building, including all lawful repair and maintenance of that nature that is carried out in accordance with the Plumbers, Gasfitters, and Drainlayers Act 1996, except—
 - (iii) repair or replacement (other than maintenance) of any component or assembly that has failed to satisfy the provisions of the building code for durability, for example, through a failure to comply with the external moisture requirements of the building code

10.1.3 Section 17 of the Act also states:

17 All building work must comply with building code

All building work must comply with the building code to the extent required by this Act, whether or not a building consent is required in respect of that building work.

10.2 Notices to fix

10.2.1 With regard to the notice to fix, the relevant section of the Act is:

164 Issue of notice to fix

- (1) This section applies if a responsible authority considers on reasonable grounds that—
 - (a) a specified person is contravening or failing to comply with this Act or the regulations (for example, the requirement to obtain a building consent);

10.3 Certificate of acceptance

10.3.1 With regard to a certificate of acceptance, the relevant section of the Act is:

96 Territorial authority may issue certificate of acceptance in certain circumstances

- (2) A territorial authority may, on application, issue a certificate of acceptance for building work already done—
 - (b) if—
 - (ii) a building consent was required for the work but not obtained...