

Whakatane District Council

Alternative Solution Assessment

of

BPB Thai Gypsum PlasterBoard

Date of Assessment: 27 July 2006
Addendum 6 November 2006

1.0 INTRODUCTION

1.1 Product Description

This is an assessment of BPB Thai Gypsum British Plasterboard (BPBTG) systems for use as internal cladding systems for buildings within the Whakatane district. This assessment includes fire resistance systems and noise control systems. The applicant is Building Materials (NZ) Ltd.

BPBTG is a gypsum plasterboard consisting of a gypsum core encased in and firmly bonded to, paper liners to form flat rectangular boards. Each board is clearly marked on the reverse side with the following:

- The number of the British standard, i.e. BS 1230:Part1:1985.
- The description of the board.
- The TGBP company brand marking.
- The source of gypsum from which the plasterboard is produced.
- A 12 digit manufacturing code that indicates the date and time of manufacture and the shift identification.

BPBTG Firestop Plasterboard is a gypsum plasterboard containing fire retarding additives in the core to improve its fire protection. The product is intended for use in wall and ceiling linings and partitions. In addition to the markings detailed above, the face of the Firestop is coloured pink with a grey liner on the back face and is labelled Firestop Wallboard on the reverse side.

BPBTG boards are available in a range of sizes from 2400 x 1200mm up to 6000 x 1200mm with weight/sheet varying between 19.87kg (2400 x 1200 std sheet) up to 49.79kg (6000 x 1200 std sheet). Standard boards are available in two widths; 1200mm and 1350mm. BPBTG boards are also available in a range of thicknesses from 10.0mm and 13.0mm for standard board and 10mm, 13mm and 16.0mm for Firestop.

1.2 New Zealand Building Code

BPBTG systems have been assessed for compliance with the following clauses of the New Zealand Building Code:

- B1 (Structure)
- B2 (Durability)
- C3 (Spread of Fire)
- E3 (Internal Moisture)
- F2 (Hazardous Building Materials)
- G6 (Airborne and Impact Sound)

The objective, functional requirements, and performance criteria of Clauses B1, B2, C3, E3, F2 and G6 of the Building Code are:

CLAUSE B1 - STRUCTURE**OBJECTIVE**

B1.1 *The objective of this provision is to:*

- (a) *Safeguard people from injury caused by structural failure,*
- (b) *Safeguard people from loss of amenity caused by structural behaviour, and*
- (c) *Protect other property from physical damage caused by structural failure.*

FUNCTIONAL REQUIREMENT

B1.2 *Buildings, building elements and sitework shall withstand the combination of loads that they are likely to experience during construction or alteration and throughout their lives.*

PERFORMANCE

B1.3.1 *Buildings, building elements and sitework shall have a low probability of rupturing, becoming unstable, losing equilibrium, or collapsing during construction or alteration and throughout their lives.*

B1.3.2 *Buildings, building elements and sitework shall have a low probability of causing loss of amenity through undue deformation, vibratory response, degradation, or other physical characteristics throughout their lives, or during construction or alteration when the building is in use.*

B1.3.3 *Account shall be taken of all physical conditions likely to affect the stability of buildings, building elements and sitework, including:*

- (a) *Self-weight,*
- (b) *Imposed gravity loads arising from use,*
- (c) *Temperature,*
- (d) *Earth pressure,*
- (e) *Water and other liquids,*
- (f) *Earthquake,*
- (g) *Snow,*
- (h) *Wind,*
- (i) *Fire,*
- (j) *Impact,*
- (k) *Explosion,*
- (l) *Reversing or fluctuating effects,*
- (m) *Differential movement,*
- (n) *Vegetation,*
- (o) *Adverse effects due to insufficient separation from other buildings,*
- (p) *Influence of equipment, services, non-structural elements and contents,*
- (q) *Time dependent effects including creep and shrinkage, and*
- (r) *Removal of support.*

B1.3.4 *Due allowance shall be made for:*

- (a) *The consequences of failure,*
- (b) *The intended use of the building,*
- (c) *Effects of uncertainties resulting from construction activities, or the sequence in which construction activities occur,*

- (d) *Variation in the properties of materials and the characteristics of the site, and*
- (e) *Accuracy limitations inherent in the methods used to predict the stability of buildings.*

B1.3.5 *The demolition of buildings shall be carried out in a way that avoids the likelihood of premature collapse.*

B1.3.6 *Sitework, where necessary, shall be carried out to:*

- (a) *Provide stability for construction on the site, and*
- (b) *Avoid the likelihood of damage to other property.*

B1.3.7 *Any sitework and associated supports shall take account of the effects of:*

- (a) *Changes in ground water level,*
- (b) *Water, weather and vegetation, and*
- (c) *Ground loss and slumping.*

CLAUSE B2—DURABILITY

OBJECTIVE

B2.1 *The objective of this provision is to ensure that a building will throughout its life continue to satisfy the other objectives of this code.*

FUNCTIONAL REQUIREMENT

B2.2 *Building materials, components and construction methods shall be sufficiently durable to ensure that the building, without reconstruction or major renovation, satisfies the other functional requirements of this code throughout the life of the building.*

PERFORMANCE

B2.3.1 *Building elements must, with only normal maintenance, continue to satisfy the performance requirements of this code for the lesser of the specified intended life of the building, if stated, or:*

- (a) *The life of the building, being not less than 50 years, if:*
 - (i) *Those building elements (including floors, walls, and fixings) provide structural stability to the building or*
 - (ii) *Those building elements are difficult to access or replace or*
 - (iii) *Failure of those building elements to comply with the building code would go undetected during both normal use and maintenance of the building*
- (b) *15 years if:*
 - (i) *Those building elements (including the building envelope, exposed plumbing in the subfloor space, and in-built chimneys and flues) are moderately difficult to access or replace, or*
 - (ii) *Failure of those building elements to comply with the building code would go undetected during normal use of the building, but would be easily detected during normal maintenance.*
- (c) *5 years if:*
 - (i) *The building elements (including services, linings, renewable protective coatings, and fixtures) are easy to access and replace, and*
 - (ii) *Failure of those building elements to comply with the building code would be easily detected during normal use of the building.*

B2.3.2 *Individual building elements which are components of a building system and are difficult to access or replace must either:*

- (a) *All have the same durability, or*

(b) Be installed in a manner that permits the replacement of building elements of lesser durability without removing building elements that have greater durability and are not specifically designed for removal and replacement.

CLAUSE C3—SPREAD OF FIRE

OBJECTIVE

C3.1 *The objective of this provision is to:*

- (a) Safeguard people from injury or illness when evacuating a building during fire.*
- (b) Provide protection to fire service personnel during firefighting operations.*
- (c) Protect adjacent household units[, other residential units,] and other property from the effects of fire.*
- (d) Safeguard the environment from adverse effects of fire.*

FUNCTIONAL REQUIREMENT

C3.2 *Buildings shall be provided with safeguards against fire spread so that:*

- (a) Occupants have time to escape to a safe place without being overcome by the effects of fire,*
- (b) Firefighters may undertake rescue operations and protect property,*
- (c) Adjacent household units[, other residential units,] and other property are protected from damage, and*
- (d) Significant quantities of hazardous substances are not released to the environment during fire.*

PERFORMANCE

C3.3.1 *Interior surface finishes on walls, floors, ceilings and suspended building elements, shall resist the spread of fire and limit the generation of toxic gases, smoke and heat, to a degree appropriate to:*

- (a) The travel distance,*
- (b) The number of occupants,*
- (c) The fire hazard, and*
- (d) The active fire safety systems installed in the building.*

C3.3.2 *Fire separations shall be provided within buildings to avoid the spread of fire and smoke to:*

- (a) Other firecells,*
- (b) Spaces intended for sleeping, and*
- (c) Household units within the same building or adjacent buildings.*

[(d) other property.]

C3.3.3 *Fire separations shall:*

- (a) Where openings occur, be provided with fire resisting closures to maintain the integrity of the fire separations for an adequate time, and*
- (b) Where penetrations occur, maintain the fire resistance rating of the fire separation.*

C3.3.4 *Concealed spaces and cavities within buildings shall be sealed and subdivided where necessary to inhibit the unseen spread of fire and smoke.*

C3.3.5 *External walls and roofs shall have resistance to the spread of fire, appropriate to the fire load within the building and to the proximity of other household units [other residential units,] and other property.*

C3.3.6 *Automatic fire suppression systems shall be installed where people would otherwise be:*

- (a) Unlikely to reach a safe place in adequate time because of the number of storeys in the building,*

(b) Required to remain within the building without proceeding directly to a final exit, or where the evacuation time is excessive,

(c) Unlikely to reach a safe place due to confinement under institutional care because of mental or physical disability, illness or legal detention, and the evacuation time is excessive, or

(d) At high risk due to the fire load and fire hazard within the building

C3.3.7 Air conditioning and mechanical ventilation systems shall be constructed to avoid circulation of smoke and fire between firecells.

C3.3.8 Where an automatic smoke control system is installed, it shall be constructed to:

(a) Avoid the spread of fire and smoke between firecells, and

(b) Protect escape routes from smoke until the occupants have reached a safe place.

C3.3.9 The fire safety systems installed shall facilitate the specific needs of fire service personnel to:

(a) Carry out rescue operations, and

(b) Control the spread of fire.

C3.3.10 Environmental protection systems shall ensure a low probability of hazardous substances being released to:

(a) Soils, vegetation or natural waters,

(b) The atmosphere, and

(c) Sewers or public drains.

CLAUSE E3—INTERNAL MOISTURE

OBJECTIVE

E3.1 The objective of this provision is to—

(a) safeguard people against illness, injury, or loss of amenity that could result from accumulation of internal moisture; and

(b) protect household units and other property from damage caused by free water from another household unit in the same building.

FUNCTIONAL REQUIREMENT

E3.2 Buildings must be constructed to avoid the likelihood of—

(a) fungal growth or the accumulation of contaminants on linings and other building elements; and

(b) free water overflow penetrating to an adjoining household unit; and

(c) damage to building elements caused by the presence of moisture.

PERFORMANCE

E3.3.1 An adequate combination of thermal resistance, ventilation, and space temperature must be provided to all habitable spaces, bathrooms, laundries, and other spaces where moisture may be generated or may accumulate.

E3.3.2 Free water from accidental overflow from sanitary fixtures or sanitary appliances must be disposed of in a way that avoids loss of amenity or damage to household units or other property.

E3.3.3 Floor surfaces of any space containing sanitary fixtures or sanitary appliances must be impervious and easily cleaned.

E3.3.4 Wall surfaces adjacent to sanitary fixtures or sanitary appliances must be impervious and easily cleaned.

E3.3.5 Surfaces of building elements likely to be splashed or become contaminated in the course of the intended use of the building, must be impervious and easily cleaned.

E3.3.6 Surfaces of building elements likely to be splashed must be constructed in a way that prevents water splash from penetrating behind linings or into concealed spaces.

Clause F2—HAZARDOUS BUILDING MATERIALS

OBJECTIVE

F2.1 The objective of this provision is to safeguard people from injury and illness caused by exposure to hazardous building materials.

FUNCTIONAL REQUIREMENT

F2.2 Building materials which are potentially hazardous, shall be used in ways that avoid undue risk to people.

PERFORMANCE

F2.3.1 The quantities of gas, liquid, radiation or solid particles emitted by materials used in the construction of buildings, shall not give rise to harmful concentrations at the surface of the material where the material is exposed, or in the atmosphere of any space.

F2.3.2 Transparent panels capable of being mistaken for an unimpeded path of travel shall be marked to make them visible.

F2.3.3 Glass or other brittle materials with which people are likely to come into contact shall:

- (a) If broken on impact, break in a way which is unlikely to cause injury, or*
- (b) Resist a reasonably foreseeable impact without breaking, or*
- (c) Be protected from impact.*

Clause G6—AIRBORNE AND IMPACT SOUND

OBJECTIVE

G6.1 The objective of this provision is to safeguard people from illness or loss of amenity as a result of undue noise being transmitted between abutting occupancies.

FUNCTIONAL REQUIREMENT

G6.2 Building elements which are common between occupancies, shall be constructed to prevent undue noise transmission from other occupancies or common spaces, to the habitable spaces of household units.

PERFORMANCE

G6.3.1 The Sound Transmission Class of walls, floors and ceilings, shall be no less than 55.

G6.3.2 The Impact Insulation Class of floors shall be no less than 55.

1.3 Legislative Management of the Application

Section 19 of the Building Act 2004 (the Act) provides guidance around how building consent authorities may establish compliance with the building code. This application falls outside the parameters of this section of the Act.

Sections 268-272 of the Act contain mechanisms for proprietors of a building method or product to apply to a product certification body for certification of that building method or product. Building consent authorities must accept a product certificate by a product certification authority as a means of compliance with the building code. The Chief Executive of the Department of Building and Housing has the legislative authority to appoint product certification accreditation bodies that, in turn, approve product certification bodies. The Chief Executive of the Department of Building and Housing has not approved any product certification accreditation bodies. As a consequence, the applicant has been denied the ability to pursue product certification by a product certification body.

Section 49 of the Act stipulates that a building consent authority must grant a building consent if it is satisfied on reasonable grounds that the provisions of the building code

would be met if the building work were properly completed in accordance with the plans and specifications that accompanied the application. The application for approval of a product for internal cladding systems by Building Materials NZ Ltd does not relate to a specific building consent application. The provisions of Section 49 of the Act therefore, are not applicable to this application.

In the instance of this application, and in the absence of specific legislative provision for local authorities to provide a generic product certification for a building product or system, the Council has considered this application to determine whether or not British Plasterboard Thai Gypsum systems satisfy the performance requirements of the categories of the building code identified above. In managing the application in this way, the Council recognises that the process will facilitate the Council's decision-making in the future should this product be cited in a building consent application.

The Council has used the Department of Building and Housing publication "*Consultation on Guidance Document, Assessing Alternative Solutions*", as the basis for evaluating the British Plasterboard Thai Gypsum System application. This document may be sourced from the Department's website: www.dbh.govt.nz

2.0 DECISION

The Whakatane District Council is satisfied on reasonable grounds that the British Plasterboard Thai Gypsum (BPBTG) systems satisfy the following provisions of the building code:

- B1 – Structure – Performance B1.3.1, B1.3.2 and B1.3.4
- B2 – Durability – Performance B2.3.1(a)
- C3 - Spread of Fire – Performance C3.3.1, 3.3.2, 3.3.4 and 3.3.5
- E3 – Internal Moisture – Performance E3.3.4
- F2 – Hazardous Building Materials – Performance 2.3.1
- G6 – Airborne and Impact Sound – Performance G6.3.1 and 6.3.2.

and are suitable for use as internal cladding systems for buildings within the Whakatane district subject to the following limitations:

- The design, use, installation and maintenance of the BPB Plasterboard systems must be in accordance with the documentation submitted in support of this application and referenced in section 1.3.3.
- Sheet bracing elements are restricted to wall braces that comprise standard sheet linings, e.g. the equivalent of Winstone Wallboards GS1a and GS2 braces.
- BPB Plasterboard must be used in dry internal situations. The board must be protected from external and internal moisture in accordance with the New Zealand building code E2 and E3.
- Walls must not be lined unless the moisture content of the timber framing is less than 24%.
- The FRR of 10mm BPB Plasterboard is -/15/15. Independent evaluation of other thicknesses of BPB Plasterboard has not been provided therefore FRR greater than -/15/15 is not approved.

- BPB Aquastop must not be used over vapour barrier wall construction or in areas of continuous exposure to moisture e.g. steam rooms.
- BPB Aquastop must be covered by a waterproof membrane which is either tiled or covered by sheet vinyl when used behind areas subject to frequent wetting or splash back, e.g. showers.

The checklist to support the Council's decision is included as Appendix A.

APPENDIX A WORKING CHECKLISTS

CHECKLIST 1 COMPARE WITH ACCEPTABLE SOLUTIONS/APPROVED DOCUMENTS

N/A

CHECKLIST 2 COMPARISON WITH OTHER DOCUMENTS

N/A

CHECKLIST 3 DEMONSTRATE (OR COMPARE WITH) IN-SERVICE HISTORY

Documents submitted in support of this application together with web-based research confirmed that BPB Plasterboard has an established history in the United Kingdom of successful in-service performance. This information was influential in deliberations around satisfying the Durability provisions of the New Zealand Building Code.

CHECKLIST 4 – EXPERT OPINION OR PRODUCER STATEMENT

4.1 APPLICANT:

Building Materials (NZ) Ltd

4.2 ALTERNATIVE SOLUTION:

Internal cladding system, including bracing system and fire resistance.

4.3 RECORD OF DECISION ON ALTERNATIVE SOLUTION APPLICATION

4.3.1 Result:

Approved with qualifications.

4.3.2 Solution applied for:

Interior cladding system. Including: wall bracing, fire resistance, and noise control systems

4.3.3 Documents supplied

The following documents have been supplied in support of this application:

- BPB Product Information booklet (undated).
- BPB Acoustics Systems Tests and Certifications Manual (undated).
- ISO Certificate provided by Bureau Veritas and dated 30 January 2003.
- Copy of a letter from BRANZ dated 15 February 2005 to Building Materials (NZ) Ltd confirming a schedule of tests, opinions and certificates undertaken by BRANZ on BPB TG Plasterboard.
- Copy of a letter dated 18 February 2005 from BPB Asia to Building Materials (NZ) Ltd confirming product support and warranty for BPB Asia products sold through Building Materials (NZ) Ltd with BPB Asia 'Standard Warranty' appended.
- Centre for Advanced Materials Technology, Monash University, Melbourne, Australia, test report *Testing of 10mm Plasterboard samples to AS/NZS 2588:1988 Section 9.16 Humidified Deflection Test* dated 29th January 2002.
- The Building Test Centre, British Gypsum Ltd, Loughborough, UK, test report *BTC 11835S A Structural Test Report Covering Humidified Deflection Tests in Accordance with AS/NZS 2588:1988 on Thai Gypsum Wallboards* – test dates 16-17 January 2002.
- PSB Singapore Test Report G31252/A3/HWC, dated 1 June 1998.
- PSB Singapore Material Testing Laboratories Test Certificate 25S0002776/LMC/AGK, dated 17 September 1999.
- Letter from BPB Thai Gypsum Products PLC re Moisture Resistant Board (MR) dated 6 January 2003, together with BPB Thai Gypsum 'MR' Specification sheet.

- Letter from BPB Thai Gypsum Products PLC dated 22 January 2003, together with BPB Gypboard Specification sheets.
- Building Research Association Ltd (BRANZ) Indicative Test Report on wall bracing capability of 10mm Water Resistant Plasterboard dated 25 April 2003.
- Building Research Association Ltd (BRANZ) test report FAR 2371, *Fire Resistance of a Loadbearing Timber Framed Wall*, dated 27 September 2004.
- Building Research Association Ltd (BRANZ) test report FR 3408, *Fire Resistance of a Non-Loadbearing Steel Stud Wall Lined with 10mm Thick Aquastop Plasterboard*, dated 26 April 2005.
- Building Research Association Ltd (BRANZ) test report FR 3457, *Fire Resistance of a Non-Loadbearing Steel Stud Wall Line with 10mm Thick Plasterboard*, dated 24 June 2005.
- BRANZ test report FR 2538, *Fire Resistance of a Loadbearing TG Firestop Lined Timber Framed Floor/Ceiling*, dated 22 February 1999.
- BRANZ test report FR 2617, *Fire Resistance of a Loadbearing Timber Framed Wall Lined with 13mm TG Firestop Plasterboard*, dated 19 March 1999.
- BRANZ test report ST0612, *P21 Racking Tests on Building Materials Ltd Standard Boards on Timber Framing*, dated 27 January 2005.
- BRANZ test report ST0413, *P21 Racking Tests on Timber Framed Walls Lined Each Side with 10mm TG Standard Plasterboard*, dated 6 April 1999.
- BRANZ test report ST0609, *P21 Racking Tests on Building Materials (NZ) Ltd Plasterboard Lined Timber Framing*, dated 6 May 2005.
- Building Technology Ltd (BTL) test report STR 295, *Report on Bracing Tests of Walls Lined with 10mm Thai Gypsum Board on One Side*, dated 12 July 1995.
- BPB Fire and Acoustics Systems Manual (undated).
- A BPB supplied list of 11 New Zealand local authorities (mix of City and District councils) in the upper half of the North Island that have approved BPB Board as at 31 March 2006.
- A BPB Plasterboard DVD titled *Shaping the Environment* which provides organisational background information on British Gypsum Plasterboard.
- Additional acoustic test data on BPBTG Plasterboard systems from Acoustics & Noise Control Consultancy Ltd provided as an attachment to a letter from Mr S Tully of Building Materials (NZ) Ltd to Building Products Ltd, dated 7 July 2006.
- An email from Mr S Tully of Building Materials (NZ) Ltd to the Whakatane District Council confirming that the acoustic test results submitted in support

of this product certification application “are a true and representative sample of the many tests that have been carried out on BPB Plasterboard”.

- Letter from Mr S Tully of Building Materials (NZ) Ltd to the Whakatane District Council dated 18 September 2006 with attachments:
 - ASTM Standard Specification – Gypsum Wallboard – Designation C 36/C 36M-03.
 - ASTM Standard Test Methods for Physical Testing of Gypsum Panel Products ASTM Designation C 473-06.
 - British Standard Gypsum Plasterboard – BS1230-1:1885.
- BPB Asia *The White Book* (1st edition, undated).

4.4 REVIEW OF THE APPLICATION

| | | |
|----|---|---|
| 1 | Evaluate the expert opinion or Producer Statement | <p>BRANZ and BTL are accepted as being expert in the field of product appraisal and verifying performance with the Building Code. It is recognised that neither BRANZ nor BTL have conducted performance appraisals of BPBTG wallboards.</p> <p>The Centre for Advanced Materials Technology, Monash University, in Melbourne is similarly well regarded by Australian building officials (previous pers. comm. with Australian building officials).</p> <p>Mr A D Paterson (Acoustics & Noise Control Consultancy) is now deceased. Reference checking has confirmed the high regard he was held in by his professional peers. I therefore have confidence in the acoustic tests and acoustic opinions provided under his signature.</p> |
| 2. | Assess BCA ability to review – will the document be reviewed in-house or by external peer review? | Allocation of tasks and technical review of the BPBTG documentation for compliance with the Building Code has been undertaken in-house by Jeff Farrell, Manager Development & Compliance. |
| 3 | Allocate checking tasks | <p>Internal review – Jeff Farrell.</p> <p>Peer review – Taylor Wong, Senior Building Control Officer.</p> |
| 4 | If the expert opinion or Producer Statements is accepted, go to Step 6 | |
| 5 | If the expert opinion is not accepted, the BCA is to engage a peer reviewer (see 4.5 for peer review process) | N/A |

4.5 COMPLIANCE WITH THE BUILDING CODE

| | | |
|----|---|---|
| 6 | Verify the part, section or figure of the Acceptance Solution. | B1 – Structure – Performance B1.3.1, B1.3.2 and B1.3.4 B2 – Durability – Performance B2.3.1(a) C3 - Spread of Fire – Performance C3.3.1, 3.3.2, 3.3.4 and 3.3.5 F2 – Hazardous Building Materials – Performance 2.3.1 G6 – Airborne and Impact Sound – Performance G6.3.1 and 6.3.2. |
| 7 | Has the applicant demonstrated that the proposed solution complies with the applicable Building Code Clauses? | Yes. Applicable Building Code clauses are B1 - Structure, B2 - Durability, C3 -,spread of Fire, F2 – Hazardous Building Materials, and G6 – Airborne and Impact Sound. The code clauses have been supported by sufficient independent information for the Council to be satisfied on reasonable grounds that the provisions of the building code will be met. |
| 8 | Check for non-compliance with other Building Code Clauses | N/A |
| 9 | Evaluate the proposal and compare with the Acceptable Solution or other approved products | BPBTG is similar to the Winstone Wallboards Gib internal wall lining system. Independent testing has confirmed the product compares well against Winstone's Gib for acoustic performance. Use as structural sheet bracing elements has not been sought. |
| 10 | Is the basis of the evaluation appropriate? | Yes. |
| 11 | Has adequate information been supplied? | Yes. Copies of numerous independent test reports have been provided to demonstrate compliance with the relevant clauses of the building code. |

4.6 COMPLIANCE SCHEDULE N/A

4.7 ADDITIONAL OR SPECIAL MAINTENANCE

| | | |
|----|---|---|
| 14 | Are there any special maintenance requirements? | Yes. The wallboard must be kept dry at all times. |
| 15 | Are any special inspections required? | Yes. Fire and acoustic systems have specific installation requirements for the system to perform as intended. |

| | | |
|----|--|---|
| 16 | Is any special maintenance needed to meet the B2 Durability requirement? | See point 14 above. |
| 17 | Are any additional or specialist inspections/reports required during construction? | Specific inspections will be required to ensure the integrity of the fire and acoustic systems. Validation testing of acoustic applications should be conducted. Copies of all documentation including relevant producer statements for acoustic installations will be required as a pre-requisite to the issue of a code compliance certificate. |
| 18 | Update the solutions register | Solutions register updated. |

5.0 LIMITATIONS

- 5.1 This product certification approval relates only to the product as described herein and is valid until further notice. Any changes to the product specification or quality assurance programme are to be notified to the Whakatane District Council. The documentation upon which this approval has been based must be considered in full when the product is used.
- 5.2 The design, use, installation and maintenance of the BPB Plasterboard systems must be in accordance with the documentation submitted in support of this application and referenced in section 4.3.3.
- 5.3 Sheet bracing elements are restricted to wall braces that comprise standard sheet linings, e.g. the equivalent of Winstone Wallboards Gib 1-3 braces.
- 5.4 BPB Plasterboard must be used in dry internal situations. The board must be protected from external and internal moisture in accordance with the New Zealand building code E2 and E3.
- 5.5 Walls must not be lined unless the moisture content of the timber framing is less than 24%.
- 5.6 The FRR of 10mm BPB Plasterboard is -/15/15. Independent evaluation of other thickness of BPB Plasterboard has not been provided therefore FRR greater than -/15/15 is not approved.
- 5.7 BPB Aquastop must not be used over vapour barrier wall construction or in areas of continuous exposure to moisture e.g. steam rooms.
- 5.8 BPB Aquastop must be covered by a waterproof membrane which is either tiled or covered by sheet vinyl when used behind areas subject to frequent wetting or splash back, e.g. showers.

6.0 HEALTH AND SAFETY

Dust from cutting or sanding the boards may irritate the respiratory system, skin and eyes. The use of suitable eye protection, facemask and gloves is recommended.

7.0 DOCUMENTS TO UPDATE

Register of alternative solutions.

8.0 PEOPLE TO NOTIFY

- Applicant
- Building Control Officers
- Bay of Plenty Regional Building Control Managers Group.

9.0 Peer review (if required) N/A.**CHECKLIST 5 – COMBINATION ALTERNATIVE SOLUTION -**

N/A

CHECKLIST 6 – EVALUATION OF PREVIOUSLY ACCEPTED ALTERNATIVE SOLUTIONS FOR APPLICATION TO THIS/ANOTHER BUILDING CONSENT APPLICATION

N/A

APPROVED FOR RELEASE

Jeff Farrell
MANAGER
DEVELOPMENT & COMPLIANCE

Taylor Wong
SENIOR BUILDING CONTROL OFFICER

Date: 6 November 2006

Date: 6 November 2006

26/1/2007 Amendment to Clause 4.4.1 – insertion of reference to BRANZ and BTL