



**SPECIFY WITH
CONFIDENCE**

BRANZ Appraisals

**Technical Assessments of
products for building and
construction**

**BRANZ
APPRAISAL
CERTIFICATE
No. 501 (2006)**

**PUTZ TECHNIK
SYSTEM 300
CAVITY SYSTEM**

Putz Technik
P O Box 11 040
Ellerslie
Auckland

Tel: 09 271 3504
Fax: 09 271 3505



BRANZ Limited
Private Bag 50 908
Porirua City
New Zealand
Tel: +64 4 237 1170
Fax: +64 4 237 1171
www.branz.co.nz

BRANZ Pty Ltd
P O Box 830
Brookvale
NSW 2100
Australia
Tel: +61 2 9938 6011
Fax: +61 2 9938 6911
www.branz.com.au



Product

1.1 Putz Technik System 300 is a cavity-based Exterior Insulation and Finishing System (EIFS) wall cladding. It is an external wall cladding system for residential and light commercial type buildings where domestic construction techniques are used.

1.2 The system consists of expanded polystyrene (EPS) sheets fixed over polystyrene or timber battens to form the cavity. The coating system consists of 5-10 mm thickness of fibreglass mesh reinforced plaster, which is finished with a latex exterior paint system. The plaster finish can be textured to give different appearances, such as sponge, float, adobe or scratch (medium or coarse).

1.3 The system incorporates a primary and secondary means of weather resistance (first and second line of defence) against water penetration by separating the cladding from the external wall framing with a nominal 20 mm drained cavity.



Scope

2.1 Putz Technik System 300 has been appraised as an external wall cladding system for buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
- constructed with timber framing complying with the NZBC; and,
- with a risk score of 0-20, calculated in accordance with NZBC Acceptable Solution E2/AS1, Table 2; and,
- situated in NZS 3604 Building Wind Zones up to, and including 'Very High'.

2.2 Putz Technik System 300 has also been appraised as an external wall cladding system for steel framed buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, with regards to building height and floor plan area; and,
- constructed with steel framing complying with the NZBC; and,
- with a risk score of 0-20, calculated in accordance with NZBC Acceptable Solution E2/AS1, Table 2; and,
- situated in NZS 3604 Building Wind Zones up to, and including 'Very High'.

2.3 Putz Technik System 300 must only be installed on vertical surfaces (except for tops of parapets, sills and balustrades, which must have a minimum 10° slope and be waterproofed in accordance with the Technical Literature).

2.4 The system is appraised for use with aluminium window and door joinery that is installed with vertical jambs and horizontal heads and sills. *(The Appraisal of Putz Technik System 300 relies on the joinery meeting the requirements of NZS 4211 for the relevant Building Wind Zone.)*

2.5 Installation of components and accessories supplied by Putz Technik and approved applicators must be carried out only by Putz Technik approved applicators.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Putz Technik System 300 Cavity System if designed, used, installed and maintained in accordance with the statements and conditions of this Certificate, will meet the following provisions of the NZBC:

Clause B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.4. Putz Technik System 300 meets the requirements for loads arising from self-weight, earthquake, wind, human impact and creep [i.e. B1.3.3 (a), (f), (h), (j) and (q)]. See Paragraphs 10.1 - 10.4.

Clause B2 DURABILITY: Performance B2.3.1 (b), 15 years and B2.3.1 (c), 5 years. Putz Technik System 300 meets these requirements. See Paragraphs 11.1 and 11.2.

Clause C3 SPREAD OF FIRE: Performance C3.3.5. Putz Technik System 300 meets this requirement. See Paragraphs 14.1 - 14.2.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. Putz Technik System 300 meets this requirement. See Paragraphs 16.1 - 16.5.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Putz Technik System 300 meets this requirement and will not present a health hazard to people.

3.2 This Certificate appraises an **Alternative Solution** in terms of New Zealand Building Code compliance.

Technical Specification

4.1 System components and accessories supplied by Putz Technik are as follows:

Polystyrene

- Cavity battens are manufactured from high density (Class H) expanded polystyrene (EPS) with an approximate density of 24 kg/m³. The battens are 50 mm wide by 20 mm thick and are supplied in 2400 mm lengths.
- EPS sheets are 40, 50 or 60 mm thick Class S with an approximate density of 16 kg/m³, or Class H with an approximate density of 24 kg/m³. The sheets are supplied in lengths ranging from 2.4 to 3.6 m x 1.2 m wide and are manufactured to meet the requirements of AS 1366 Part 3.

Plasters

- *PT300 Base Coat* is a Portland cement-based adhesive render comprising a fine or very fine sand, cement and mineral additives. It is trowel or machine applied as the bonding and meshing coat in a 2-3 mm thickness, followed by the embedment of fibreglass mesh reinforcement in the outer surface. PT300 is supplied in 25 kg plastic lined paper bags.
- *PT350 Skim or Levelling Coat* is a Portland cement-based plaster comprising a fine or very fine sand, cement and mineral additives. It is trowel or machine applied as a levelling coat in a 1-5 mm layer over the mesh coat. PT350 is supplied in 25 kg plastic lined paper bags.
- *PT100 Adobe or Undulating* is a dry mix plaster which has been specifically formulated for a fine sponge finish, and is ideally suited where an adobe or undulating finish is required. It may be trowel or machine applied to a thickness of 1-5 mm, and is supplied in 25 kg bags.
- *PT101 Float/Sponge/Texture* is a dry mix plaster which has been specifically formulated for finishing by plastic trowel or sponged with water. This plaster may also be sprayed through a hopper gun at a thickness of 2 mm to achieve a

fine to medium textured finish. It is supplied in 25 kg bags.

- *PT103 Scratch/Drag* is a coarse sand dry mix plaster of approximately 3 mm thickness which has been specifically formulated as a medium texture (drag or random scratch coat) for finishing with a plastic trowel. It is supplied in 25 kg bags.
- *PT104 Scratch/Drag* is similar to PT103 except it contains slightly more coarse sands for a coarse scratch or drag finish of approximately 4 mm thickness. It is supplied in 25 kg bags.

Accessories

- Reinforcing mesh - alkali-resistant fibreglass mesh with a nominal mesh size of approximately 4 mm square and a weight of 160 g/m² for use in domestic and light commercial situations.
- uPVC components - sill flashing, jamb flashing, corner moulding, base moulding, control joint mouldings and cavity vent strip.
- Washers - 40 mm diameter PVC.

4.2 Accessories used with the system which are supplied by the Putz Technik approved applicator are:

- Waterproof membrane tapes – tapes covered by a valid BRANZ Appraisal Certificate for use as waterproof membranes over the tops of plastered parapets, balustrades, fixing blocks and the like.
- Flexible sealant – sealant complying with NZBC Acceptable Solution E2/AS1, or sealant covered by a valid BRANZ Appraisal Certificate for use as a weather sealing sealant for exterior use.
- Adhesive - EPS compatible adhesive for adhering uPVC components to the EPS sheets as and where required.
- Timber cavity battens – nominal 50 mm wide by 25 mm thick (minimum finished size of 45 mm wide by 18 mm thick) timber treated to Hazard Class H3.1.
- Cavity batten fixings (timber frame) - 30 x 2.5 mm hot-dip galvanised steel flat head nails.
- Polystyrene sheet and board fixings (timber frame) - 90 x 3.55 mm (for 40 mm thickness) and 110 x 3.80 mm (for 50 and 60 mm thickness) hot-dip galvanised steel flat head nails with 40 mm diameter washers. (Note: Hot-dip galvanising must comply with AS/NZS 4680.)
- Cavity batten and polystyrene sheet fixings (steel frame) - Self-drilling AS 3566 Corrosion Class 3 6-gauge screws in mild or moderate industrial or marine environments and Corrosion Class 4, 6-gauge screws in severe marine environments, with 40 mm diameter washers. The screw length must allow a 10 mm minimum penetration through the steel framing.

4.3 Accessories used with the system which are supplied by the building contractor are:

- Building wrap - paper or wrap complying with NZBC Acceptable Solution E2/AS1 Table 23, or breather-type membranes covered by a valid BRANZ Appraisal Certificate for use as wall wraps.
- Building wrap support - polypropylene strap for securing the building wrap in place and preventing bulging of the bulk insulation into the drainage cavity where cavity battens are installed at greater than 450 mm centres. (Note: additional vertical battens may also be installed to provide support.)
- Flexible sill and jamb tapes - flexible flashing tapes complying with NZBC Acceptable Solution E2/AS1 Paragraph 4.3.11, or flexible flashing tapes covered by a valid BRANZ Appraisal Certificate for use around window and door joinery openings.
- Joinery head flashings - as supplied by the joinery manufacturer or contractor.
- Window and door trim cavity air seal – air seals complying

with NZBC Acceptable Solution E2/AS1 Paragraph 9.1.6, or self expanding, moisture cure polyurethane foam air seals covered by a valid BRANZ Appraisal Certificate for use around window, door and other wall penetration openings.

Paint System Specification

- A latex exterior paint system complying with any of Parts 7, 8, 9 or 10 of AS 3730 must be used over the finishing plasters to make the system weathertight and give the desired finish colour to exterior walls. Paint colours must have a light reflectance value (LRV) of 40% minimum regardless of gloss value. Proprietary paint systems have not been assessed, and are outside the scope of this Certificate.

Handling and Storage

5.1 Handling and storage of all materials supplied by Putz Technik or the approved applicator, whether on or off site, are under the control of Putz Technik approved applicators. Dry storage must be provided on site for the fibreglass mesh and bags of plaster. EPS sheets and battens, uPVC flashings and profiles must be protected from direct sunlight and physical damage, and should be stored flat and under cover. Liquid components must be stored in frost-free conditions.

5.2 Handling and storage of all materials supplied by the building contractor, whether on or off site, are under the control of the building contractor. Materials must be handled and stored in accordance with the relevant manufacturer's instructions.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Putz Technik System 300. The Technical Literature must be read in conjunction with this Certificate. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Certificate must be followed.

Design Information

Framing

Timber Treatment

7.1 Timber wall framing behind Putz Technik System 300 must be treated as required by NZS 3602.

Timber Framing

7.2 Timber framing must comply with NZS 3604 for buildings or parts of buildings within the scope limitations of NZS 3604. Buildings or parts of buildings outside the scope of NZS 3604 must be to a specific design in accordance with NZS 3603 and NZS 4203. Where specific design is required, the framing must be of at least equivalent stiffness to the framing provisions of NZS 3604. In all cases studs must be at maximum 600 mm centres. Dwangs must be fitted flush between the studs at maximum 800 mm centres.

7.3 Timber framing must have a maximum moisture content of 24% at the time of the cladding application. *(If EPS sheets are fixed to framing with a moisture content of greater than 24% problems may occur at a later date due to excessive timber shrinkage.)*

Steel Framing

7.4 Steel framing must be to a specific design meeting the requirements of the NZBC.

7.5 The minimum framing specification is 'C' section

studs and nogs of overall section size of 75 mm web and 32 mm flange. Steel thickness must be minimum 0.55 mm.

7.6 Studs must be at maximum 600 mm centres. Dwangs must be fitted flush between the studs at maximum 800 mm centres.

EPS Sheet Setout

7.7 All vertical EPS sheet edges must be supported and fixed through the cavity battens to the framing. Horizontal sheet edges must be supported at fixing locations with cavity spacers 100 mm long maximum in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.2(f). At the base of the wall, the EPS sheets must hang 50 mm below the supporting framing.

7.8 Additional framing will be required at soffits, internal and external corners and window and door openings for the support and fixing of sheet edges.

General

8.1 Punchings in the cavity vent strip provide a minimum ventilation opening area of 1000 mm² per lineal metre of wall in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.3(b).

8.2 The ground clearance to finished floor levels as set out in NZS 3604 must be adhered to at all times. At ground level paved surfaces, such as footpaths, must be kept clear of the bottom edge of the cladding system by a minimum of 100 mm, and unpaved surfaces by 175 mm in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Table 18.

8.3 At balcony, deck or roof/wall junctions, the bottom edge of the Putz Technik System 300 system must be kept clear of any adjacent surface, or above the top surface of any adjacent roof flashing by a minimum of 35 mm in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.3.6.

8.4 Unlined gables and walls must incorporate a rigid sheathing or an air barrier which meets the requirements of NZBC Acceptable Solution E2/AS1, Table 23. Where rigid sheathings are used, the fixing length must be increased by a minimum of the thickness of the sheathing.

8.5 Where penetrations through the Putz Technik System 300 system are wider than the cavity batten spacing, allowance must be made for airflow between adjacent cavities. A minimum 10 mm gap must be left between the bottom of the vertical cavity batten and the flashing to the opening.

8.6 Where the system abuts other cladding systems, designers must detail the junction to meet their own requirements and the performance requirements of the NZBC. The Technical Literature provides some guidance. Details not included within the Technical Literature have not been assessed and are outside the scope of this Certificate.

Electrical Cables

8.7 PVC sheathed electrical cables must be prevented from direct contact with the polystyrene. When cables must penetrate the EPS for exterior electrical connections, the cable must be directly supported by passing through an electrical conduit.

Control Joints

9.1 Control joints must be constructed in accordance with the Technical Literature, and be provided as follows:

- Horizontal control joints - at maximum 6 m centres.
- Vertical control joints - at maximum 20 m centres; aligned with any control joint in the structural framing; where the system abuts different cladding types, or where the system covers different structural materials.

(Note: Horizontal and vertical control joints must be located over structural supports. The design of vertical control joints where the system abuts different cladding types is outside the scope of this Certificate and is the responsibility of the designer - see Paragraph 8.6.)

Inter-storey Junctions

9.2 Inter-storey drained joints must be provided for walls over 2 storeys in height in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.9.4(b). Inter-storey junctions must be constructed in accordance with the Technical Literature.

(Note: Refer to Paragraph 14.2 for the requirements for barriers to vertical fire spread at inter-storey junctions for buildings of three or more floors.)

Structure

Mass

10.1 The mass of Putz Technik System 300 is approximately 9 kg/m², therefore it is considered a light wall cladding in terms of NZS 3604.

Impact Resistance

10.2 The system has adequate resistance to human impact loads likely to be encountered in normal residential use. The likelihood of impact damage to the system when used in light commercial situations should be considered at the design stage, and appropriate protection such as the installation of bollards and barriers should be considered for vulnerable areas.

Wind Zones

10.3 Putz Technik System 300 is suitable for use in all Building Wind Zones of NZS 3604, up to, and including 'Very High' where buildings are designed to meet the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 1.1.

Polystyrene Sheet Fixing

10.4 EPS sheets must be fixed through the cavity battens and cavity spacers to the wall framing at maximum centres specified in Table 1.

Table 1: EPS Sheet Fixing Centres for Edges and Intermediate Studs

NZS 3604 Building Wind Zone	Fixing Centres (mm)
Low ¹	300
Medium ¹	300
High ¹	300
Very High ²	200

1. One fixing is required into each dwang and top and bottom plates at mid-dwang length.

2. Fixings are also required into each dwang at 200 mm centres and top and bottom plates at mid-dwang length.

Durability

11.1 Putz Technik System 300 meets the performance requirements of NZBC Clause B2.3.1 (b), 15 years for the cavity system and plaster finish, and the performance requirements of NZBC Clause B2.3.1 (c), 5 years for the exterior paint system.

Serviceable Life

11.2 Putz Technik System 300 is expected to have a

serviceable life of at least 30 years provided the system is maintained in accordance with this Certificate, and the EPS sheets, fixings and plaster are continuously protected by a weathertight coating and remain dry in service.

Maintenance

12.1 Regular maintenance is essential to ensure the performance requirements of the NZBC are continually met and to ensure the maximum serviceability of the system.

12.2 Regular cleaning (at least annually) of the paint coating is required to remove grime, dirt and organic growth and to maximise the life and appearance of the coating. Grime may be removed by brushing with a soft brush, warm water and detergent. Paint systems must be recoated at approximately 5-10 yearly intervals in accordance with the paint manufacturer's instructions.

12.3 Annual inspections must be made to ensure that all aspects of the cladding system, including the coating system, plaster, flashings and any sealed joints remain in a weatherproof condition. Any cracks, damaged areas or areas showing signs of deterioration which would allow water ingress, must be repaired immediately. Sealant, coatings and the like must be repaired in accordance with the instructions of Putz Technik.

12.4 Minimum ground clearances as set out in this Certificate and the Technical Literature must be maintained at all times during the life of the system. *(Failure to adhere to the minimum ground clearances given in this Certificate and the Technical Literature will adversely affect the long term durability of Putz Technik System 300.)*

Control of Internal Fire and Smoke Spread

13.1 Polystyrene used with the system meets the flame propagation criteria of AS 1366. The polystyrene must also be protected from ignition in accordance with the requirements of NZBC Acceptable Solution C/AS1 Part 6, Paragraphs 6.20.11 and 6.20.12. Where required by NZBC Acceptable Solution C/AS1 Part 6, Table 6.3, flame barriers meeting the requirements of C/AS1 Part 6, Paragraph 6.20.13 and Appendix C, Paragraph C10.1 must be provided.

Control of External Fire Spread

14.1 Putz Technik System 300 using any surface finish is considered to meet the performance provisions of NZBC C3.3.5 for use as an external wall cladding when restricted to:

- Single storey buildings 1 m or more from the boundary for all purpose groups.
- Buildings up to 7 m high, 1 m or more from the boundary, for all purpose groups other than SC and SD.
- Fully sprinklered buildings up to 10 m high, 1 m or more from the boundary for all purpose groups other than SC, SD, SA and SR.
- Buildings containing purpose group SH, with a building height less than 10 m and located 1 m or more from the boundary.

(Note: The scope of this Certificate limits building heights to 10 m in accordance with the limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1(a). The building heights referenced in 14.1 above are as defined in the Definitions Section of the Fire Safety Clauses of the NZBC.)

14.2 For buildings of three or more floors where the cladding system extends to cover the walls of at least three

floors, the requirements for barriers to vertical fire spread in the cladding as set out in NZBC Acceptable Solution C/AS1 Part 7, Paragraphs 7.9.18 and 7.9.19 must be met. These joints are not covered by the Technical Literature, and are outside the scope of this Certificate. Design of the barrier joint must be specifically detailed by the designer to meet the NZBC, including blocking of the cladding cavity and wall framing cavity, and installation of flashing and sealing systems to collect and direct any moisture to the outside of the cladding system at this point.

Outbreak of Fire

15.1 Putz Technik System 300 must be separated from chimneys and flues in accordance with the requirements of NZBC Acceptable Solution C/AS1, Part 9 for the protection of combustible materials.

External Moisture

16.1 Putz Technik System 300, when installed in accordance with this Certificate and the Technical Literature, prevents the penetration of moisture that could cause undue dampness or damage to building elements.

16.2 The cavity must be sealed off from the roof and sub-floor space to meet the performance requirements of Clause E2.3.5.

16.3 Putz Technik System 300 allows excess moisture present at the completion of construction to be dissipated without permanent damage to building elements to meet the performance requirements of Clause E2.3.6.

16.4 The details given in the Technical Literature for weather sealing are based on the design principle of having a first and second line of defence against moisture entry for all joints, penetrations and junctions. The ingress of moisture must be excluded by detailing joinery and wall interfaces as shown in the Technical Literature. Weathertightness details that are developed by the designer are outside the scope of this Certificate and are the responsibility of the designer for compliance with the NZBC.

16.5 The use of Putz Technik System 300 where there is a designed cavity drainage path for moisture that penetrates the cladding, does not reduce the requirement for junctions, penetrations, etc to remain weather resistant.

Internal Moisture

17.1 NZBC Acceptable Solution E3/AS1, Paragraph 1.1.1(a) requires a minimum wall R-value of 1.5 for framed cavity wall construction. Putz Technik System 300 alone does not meet NZBC Acceptable Solution E3/AS1, Paragraph 1.1.1(a) (see Paragraph 18.1). Additional wall insulation must be added. Alternatively, a specific design may be carried out.

17.2 The EPS cavity battens will act as a thermal break to steel framing in accordance with NZBC Acceptable Solution E3/AS1.

Water Vapour

17.3 Putz Technik System 300 is not a barrier to the passage of water vapour, and when correctly installed will not create or increase the risk of moisture damage resulting from condensation.

Energy Efficiency

18.1 The thermal performance of Putz Technik System 300, and any additional insulation provided within the

wall can be calculated in accordance with NZS 4214. Calculations in accordance with NZS 4214 require that the ventilated air gap and the thermal resistance of each layer between the ventilated air gap and outside air be de-rated by a factor of 0.5. Therefore, in this system, unless better information is available for a specific design case, the R-value of the polystyrene layers must be taken as half of the actual value, and are as set out in Table 2.

Table 2: Board R-values (including 0.5 de-rating)

Polystyrene Type	Thickness		
	40 mm	50 mm	60 mm
EPS Class S ¹	R0.49	R0.61	R0.73
EPS Class H ²	R0.52	R0.66	R0.79

1. Based on a thermal conductivity k value of 0.041 W/m°C.

2. Based on a thermal conductivity k value of 0.038 W/m°C.

Installation Information

Installation Skill Level Requirements

19.1 Installation and finishing of components and accessories supplied by Putz Technik and the approved applicators must be completed by trained applicators, approved by Putz Technik.

19.2 Installation of the accessories supplied by the building contractor must be completed by tradespersons with an understanding of cavity construction, in accordance with instructions given within the Putz Technik System 300 Technical Literature and this Certificate.

System Installation

Building Wrap and Flexible Sill and Jamb Flashing Tape

20.1 The selected building wrap and flexible sill and jamb tape system must be installed by the building contractor in accordance with the wrap and tape manufacturer's instructions prior to the installation of the cavity battens and the rest of the Putz Technik System 300 system. Building wrap must be installed horizontally and be continuous around corners. The wrap must be lapped 75 mm minimum at horizontal joints and 150 mm minimum over studs at vertical joints. Particular attention must be paid to the installation of the building wrap and sill and jamb tapes around window and door openings to ensure a continuous seal is achieved and all exposed wall framing in the opening is protected.

Aluminium Joinery Installation

20.2 Aluminium joinery and associated head flashings must be installed by the building contractor in accordance with the Technical Literature. A 7.5-10 mm nominal gap must be left between the joinery reveal and the wall framing so a PEF rod and air seal can be installed after the joinery has been secured in place.

Putz Technik System 300

20.3 The system must be installed in accordance with the Technical Literature by Putz Technik approved applicators.

20.4 The Putz Technik System 300 plaster system must

only be applied when the air and substrate temperature is within the range of +5°C to +30°C.

Inspections

20.5 The Technical Literature must be referred to during the inspection of Putz Technik System 300 installations by building consent authorities and territorial authorities.

Finishing

20.6 The paint manufacturers' instructions must be followed at all times for application of the paint finish. The plaster must be cured for a minimum of 7 days and must be dry before commencing painting.

Health and Safety

21.1 Safe use and handling procedures for the components that make up Putz Technik System 300 are provided in the relevant manufacturer's Technical Literature.

Basis of Appraisal

The following is a summary of the technical investigations carried out:

Tests

22.1 The following testing has been undertaken by BRANZ:

- BRANZ expert opinion on NZBC E2 code compliance for the Putz Technik System 300 system was based on testing and evaluation of all details within the scope and as stated within this Certificate. The Putz Technik System 300 system and balustrade to wall junction details were tested to AS/NZS 4284 with a BRANZ-designed extension which became the basis of the E2/VM1 test. The testing was completed in three stages; the first being the standard AS/NZS 4284 test, the second being the modified AS/NZS 4284 test with defects introduced in the test panel, and the third being the modified AS/NZS 4284 test with the internal linings and building wrap removed. The testing assessed the performance of the foundation detail, window head, jamb and sill details, vertical and horizontal control joints, internal and external corners and balustrade to wall junction with a plastered cap. In addition to the weathertightness test, the details contained within the Technical Literature have been reviewed, and an opinion has been given by BRANZ technical experts that the system will meet the performance levels of NZBC Acceptable Solution E2/AS1 for drained cavity claddings.
- Wind face load and fastener pull through testing for EIFS cladding systems. BRANZ determined design wind suction pressures, and by comparing these pressures with the NZS 3604 design wind speeds and NZS 4203 pressure coefficients, the fixing requirements were determined for timber and steel framed walls.

22.2 Testing has been undertaken by Opus International Consultants on the Putz Technik System 300 plaster for air entrainment, density, flexural strength, bond strength, compressive strength and direct tensile strength. The test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

23.1 Structural and durability opinions have been provided by BRANZ technical experts.

23.2 Site visits have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.

23.3 The Technical Literature for Putz Technik System 300 has been examined by BRANZ and found to be satisfactory.

Quality

24.1 The manufacture of the plasters has been examined by BRANZ, including methods adopted for quality control. Details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.

24.2 The quality of materials, components and accessories supplied by Putz Technik is the responsibility of Putz Technik.

24.3 Quality on site is the responsibility of the Putz Technik approved applicators.

24.4 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of framing systems and joinery, building wraps, flashing tapes, air seals and joinery head flashings in accordance with the instructions of Putz Technik.

24.5 Building owners are responsible for the maintenance of Putz Technik System 300 installations in accordance with the instructions of Putz Technik.

Sources of Information

- AS 1366.3 - 1992 Rigid cellular plastic sheets for thermal insulation - Rigid cellular polystyrene - Moulded (RC/PS-M).
- AS 3566 - 2002 Self-drilling screws for the building and construction industries.
- AS 3730 Guide to the properties of paints for buildings.
- AS/NZS 4284: 1995 Testing of building facades.
- NZS 3602: 2003 Timber and wood-based products for use in building.
- NZS 3603: 1993 Timber Structures Standard.
- NZS 3604: 1999 Timber framed buildings.
- NZS 4203: 1992 General structural design and design loadings for buildings.
- NZS 4211: 1985 Specification for performance of windows.
- NZS 4214: 2002 (INT) Methods of determining the total thermal resistance of parts of buildings.
- Compliance Document for New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third Edition July 2005.
- New Zealand Building Code Handbook and Approved Documents, Building Industry Authority, 1992.
- The Building Regulations 1992, up to, and including October 2004 Amendment.

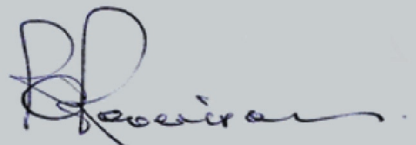
In the opinion of BRANZ, Putz Technik System 300 Cavity System is fit for purpose and will comply with the Building Code to the extent specified in this Certificate provided it is used, designed, installed and maintained as set out in this Certificate.

The Appraisal Certificate is issued only to the Certificate Holder, Putz Technik, and is valid until further notice, subject to the Conditions of Certification.

Conditions of Certification

1. This Certificate:
 - a) relates only to the product as described herein;
 - b) must be read, considered and used in full together with the technical literature;
 - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
 - d) is copyright of BRANZ.
2. The Certificate Holder:
 - a) continues to have the product reviewed by BRANZ;
 - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
 - c) abides by the BRANZ Appraisals Services Terms and Conditions.
3. The product and the manufacture are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ.
4. BRANZ makes no representation as to:
 - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
 - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
 - c) any guarantee or warranty offered by the Certificate Holder.
5. Any reference in this Certificate to any other publication shall be read as a reference to the version of the publication specified in this Certificate.

For BRANZ



**P Robertson
Chief Executive**

Date of issue: 17 February 2006