



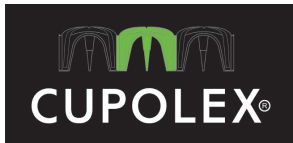
**CODEMARK®**

Certificate No: BRANZ-CM-1026

Date of Issue: 14 April 2022

Expiry Date: 14 April 2025

**CERTIFICATE HOLDER**



**Cupolex Solutions Ltd**

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Tel.: 0800 287 6539  
Email: enquiry@cupolex.co.nz  
Web: cupolex.co.nz

**Mike Teddy**  
Managing Director  
Cupolex Solutions Ltd

**CERTIFICATION BODY**



**BRANZ**  
**BRANZ Limited**

1222 Moonshine Rd,  
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**Chelydra Percy**  
Chief Executive Officer  
BRANZ Limited

# PRODUCT CERTIFICATE

## THIS IS TO CERTIFY CUPOLEX®

### KEY INFORMATION

#### 1. DESCRIPTION OF PRODUCT

CUPOLEX® is a concrete floor system which includes plastic, dome-shaped concrete void formers to create concrete slab-on-ground floors. Concrete is placed over the modular pod void formers to create a waffle raft slab. The system consists of CUPOLEX® Pods, Beton Stops, Flat Stops, Reinforcing Chairs and Load Spreaders which are all identified by the CUPOLEX® brand on the individual components. The concrete used with the CUPOLEX® system is specified by the Reference Document or by the Chartered Professional Engineer.

#### 2. USE OF PRODUCT

CUPOLEX® is a concrete floor system intended for use within slab-on-ground floors on ground with design considerations of:

- on 'good ground' and 'TC1' type ground within the 'Canterbury earthquake region', as defined by the Acceptable Solutions and Verification Methods for NZBC Clause B1 Structure, using design details from the Reference Document; and,
- on ground with an ultimate bearing capacity of minimum 200 kPa pressure (as defined in the Reference Document) and with all other classification details of 'good ground' and 'TC1' type ground, using design details from the Reference Document; or,
- on 'TC2' type ground within the 'Canterbury earthquake region' or moderately to highly expansive soils, when subject to Specific Engineering Design by a Chartered Professional Engineer.

#### 3. COMPLIES WITH THE FOLLOWING PROVISIONS OF THE NEW ZEALAND BUILDING CODE (NZBC)

**Clause B1 STRUCTURE:** Performance B1.3.1, B1.3.2 and B1.3.4. Loads arising from self weight, imposed gravity loads, earthquake, wind, differential movements and time dependent effects including creep and shrinkage [i.e. B1.3.3 (a), (b), (f), (h), (m) and (q)].

**Clause B2 DURABILITY:** Performance B2.3.1 (a) not less than 50 years and B2.3.2.

**Clause E2 EXTERNAL MOISTURE:** Performance E2.3.3.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1.

#### 3A CONTRIBUTES TO THE FOLLOWING PROVISIONS OF THE NZBC:

**Clause H1 ENERGY EFFICIENCY:** Performance H1.3.1 and H1.3.2E.

The Certificate Holder must maintain compliance with the conditions set out in Regulation 15 of the Building (Product Certification) Regulations 2008.

This Certificate is issued by BRANZ Limited, an independent certification body accredited by the product certification body appointed by the Chief Executive of the Ministry of Business, Innovation and Employment (MBIE) under the Building Act 2004. MBIE does not in any way warrant, guarantee or represent that the building method or product the subject of this certificate conforms with the New Zealand Building Code, nor accept any liability arising out of the use of the building method or product. MBIE disclaims, to the extent permitted by law, all liability (including negligence) for claims of losses, expenses, damages and costs arising as a result of the use of the building method(s) or products(s) referred to in this certificate.

It is advised to check that this Product Certificate is currently valid and not withdrawn, suspended or superseded by a later issue, by referring to the MBIE website, [www.mbie.govt.nz](http://www.mbie.govt.nz)

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**4. CONDITIONS AND LIMITATIONS OF USE**

CUPOLEX® is a concrete floor system intended for use within slab-on-ground floors for either timber-framed buildings within the scope limitations of NZS 3604, or steel-framed buildings within the scope of limitations of NASH Standard Part 2, or other similar light weight constructions where floor slabs are subject to Specific Engineering Design; and within the following conditions and limitations:

- Built on ground with an ultimate bearing capacity of minimum 200 kPa pressure (as defined in the Reference Document) and with all other classification details of 'good ground' or 'TC1' type ground within the 'Canterbury earthquake region'; or,
- When built on 'TC2' type ground within the 'Canterbury earthquake region' or moderately to highly expansive soils, CUPOLEX® is subject to Specific Engineering Design as well as to verification and assessment by a Chartered Professional Engineer.
- Compliance with H1 Energy Efficiency is dependent on CUPOLEX® and project-specific details (including supplementary insulation where required) complying with:
  - a. NZBC Acceptable Solution H1/AS1 Fifth Edition and Verification Method H1/VM1 5th Edition for all housing, and buildings up to 300 m²; or,
  - b. NZBC Acceptable Solution H1/AS2, First Edition and H1/VM2, First Edition for buildings greater than 300 m²; or,
  - c. for building consent applications submitted before 3 November 2022, NZBC Acceptable Solution H1/AS1 Fourth Edition, Amendment 4 for all buildings within the scope of this certification.

**5. HEALTH AND SAFETY INFORMATION**

Wet concrete is a highly alkali substance and all necessary protective clothing should be worn when handling, placing and working with concrete.

Care must be taken when walking across the installed pods to avoid slipping or misstepping.

**6. REFERENCE DOCUMENT**

This Product Certificate must be read in conjunction with:

- CUPOLEX® Technical Manual, Version 1.4.22.

**SCHEDULE: INFORMATION THAT SUPPORTS KEY INFORMATION**

**7. SUPPORTING INFORMATION ABOUT DESCRIPTION OF THE PRODUCT**

**PRODUCT SPECIFICATION**

The components of CUPOLEX® supplied by Cupolex Solutions Ltd are:

- CUPOLEX® Pods - H200 and H260 - 100% recycled polypropylene injection moulded concrete void formers.
- Beton Stops - adjustable concrete stop ends, used to make adjustments on edge beams and around plumbing or where there is not enough space to incorporate a full CUPOLEX® Pod.
- Flat Stops - 100% recycled polypropylene injection moulded forms that fit where Beton Stops are not required, to enclose the pod on the outer edges.
- Reinforcing Chairs - C100 - plastic reinforcement chairs used for the accurate placement of perimeter and internal reinforcing bars.
- Load Spreader - a polypropylene reinforcement column used in the reinforcement of CUPOLEX® Pods.

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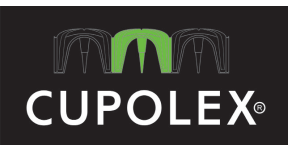
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## 8. SUPPORTING INFORMATION ABOUT INTENDED USE OF THE PRODUCT

### ASSESSMENT REQUIREMENTS

The system design is dependent on the underlying ground conditions and soil bearing capacity which shall be assessed prior to the design of the system.

### DESIGN REQUIREMENTS

For ground with an ultimate bearing capacity of minimum 200 kPa pressure [as defined in the Reference Document] and with all other classification details of 'good ground' and 'TC1' type ground, the structural engineering requirement for CUPOLEX® is accounted for in the Reference Document which shall be followed. CUPOLEX® must be appropriately designed by a Chartered Professional Engineer for 'TC2' type ground within the 'Canterbury earthquake region' or moderately to highly expansive soils, with due allowance made for the underlying ground conditions and soil bearing capacity. It is recommended in all cases that a geotechnical investigation of the subject site be carried out to inform the structural design. Pipes penetrating concrete or under buildings must be designed by a Chartered Professional Engineer in accordance with NZBC Verification Method G12/VM1, NZBC Acceptable Solution G12/AS1, NZBC Acceptable Solution G13/AS2 and NZBC Acceptable Solution G13/AS3, as applicable.

### INSTALLATION REQUIREMENTS

Installation shall be carried out in accordance with the Reference Document and the design requirements specified by the Reference Document or the Chartered Professional Engineer, including site preparation, piped service penetration, damp-proof membrane placement, boxing and reinforcing [if required].

### MAINTENANCE REQUIREMENTS

Conventional maintenance procedures typical of concrete slabs may be used for slabs constructed using the CUPOLEX® system.

All exposed perimeter surfaces shall be inspected and cleaned at least annually, and any damage repaired immediately. Protective coatings must be maintained throughout the life of the building, in accordance with the coating proprietor's instructions, to ensure the ongoing protection of the slab.

### BUILDING CODE

#### B1 STRUCTURE

CUPOLEX® floor systems, when designed and constructed in accordance with the Reference Document and specifically designed by a Chartered Professional Engineer [where applicable], meet the requirements of NZBC Clause B1 as listed above.

#### B2 DURABILITY

CUPOLEX® floor systems, when designed, installed and maintained in accordance with the details given in the Reference Document, meet the requirements of NZBC Clause B2.3.1 [a], not less than 50 years and B2.3.2.

#### E2 EXTERNAL MOISTURE

CUPOLEX® floor systems, when installed and maintained in accordance with the details given in the Reference Document, meet the requirements of NZBC Clause E2.3.3.

#### H1 ENERGY EFFICIENCY

The CUPOLEX® system is considered a slab-on-grade for use with the tables in the NZBC Acceptable Solutions or the Verification Method to ascertain the relevant R-value for a given foundation design and its contribution to the buildings energy efficiency.

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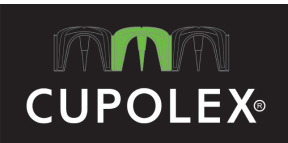
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Chief Executive Officer  
BRANZ Limited

**9. SUPPORTING INFORMATION ABOUT CONDITIONS AND LIMITATIONS OF USE**

All conditions and limitations provided as stated in this Product Certificate.

**10. BASIS FOR CODEMARK CERTIFICATION**

The following evaluations have been carried out on CUPOLEX® to determine compliance with the NZBC:

- A structural assessment has been undertaken on CUPOLEX® by BRANZ technical experts.
- A durability and hazardous building materials assessment has been undertaken on CUPOLEX® by BRANZ technical experts.
- An assessment of CUPOLEX® against the weathertightness requirements of the NZBC has been completed by BRANZ technical experts.
- Site inspections have been carried out by BRANZ to assess the installation of CUPOLEX® against the Reference Document.
- The Reference Document has been examined by BRANZ and found to be satisfactory.
- BRANZ has assessed the Product Quality Plan for CUPOLEX® under which the responsibilities are assigned as follows:
  - The quality of supply to the market is the responsibility of Cupolex Solutions Ltd.
  - Chartered Professional Engineers are responsible for the specific design of the system.
  - Cupolex Solutions Ltd trained and approved installers are responsible for the installation of CUPOLEX®.

**11. DOCUMENTATION SUPPORTING CERTIFICATION**

- Acceptable Solutions and Verification Methods for New Zealand Building Code Clause B1 Structure, First edition [Amendment 20], 29 November 2021.
- Acceptable Solutions and Verification Methods for New Zealand Building Code Clause H1 Energy Efficiency, Fourth edition [Amendment 4], 28 November 2019.
- BRANZ Durability Opinion TP13275-001, issue date 12 May 2021. CUPOLEX® was assessed to meet the relevant NZBC durability requirement.
- BRANZ Technical Opinion TP13275-001-01, issue date 28 April 2021. CUPOLEX® was assessed to meet the relevant NZBC structural requirements.
- H1 Energy Efficiency, Acceptable Solution H1/AS1, Energy efficiency for all housing, and buildings up to 300 m², Fifth edition, 29 November 2021.
- H1 Energy Efficiency, Verification Method H1/VM1, Energy efficiency for all housing, and buildings up to 300 m², Fifth edition, 29 November 2021.
- H1 Energy Efficiency, Acceptable Solution H1/AS2, Energy efficiency for buildings greater than 300 m², First edition, 29 November 2021.
- H1 Energy Efficiency, Verification Method H1/VM2, Energy efficiency for buildings greater than 300 m², First edition, 29 November 2021.
- NASH Standard Part 2:2019 Light Steel Framed Buildings.
- NZS 3604:2011 Timber-framed buildings.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.

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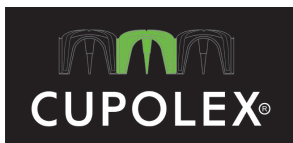
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**12. CONDITIONS RELATING TO NOTIFICATION**

The certificate holder [Cupolex Solutions Ltd] must notify the product certification body [BRANZ] in writing, of any intended change to any of the following particulars:

- The name, address, or contact details of the certificate holder
- Any address of a location where a certified product is produced or manufactured.

The certificate holder shall notify the product certification body in writing of any intended change, modification, or alteration to any of the following:

- The certified building method or product
- The method of its production or manufacture
- The Product Quality Plan prepared in respect of the certified building method or product
- The application or installation instructions for the certified building method or product
- Any documentation relating to the use and maintenance of the certified building method or product.

If the certificate holder has any reason to suspect that the certified building method or product does not comply with the Building Code, the certificate holder shall notify the product certification body in writing of the reason for that suspicion.

If the certificate holder or the product certification body finds that a certified building method or product that has been released on the market does not comply with the Building Code, the certificate holder shall disclose that fact in a published disclosure statement in a form that is acceptable to the product certification body and to MBIE.

If the certificate is suspended or revoked, the certificate holder:

- Shall notify all customers to whom the building method or product is regularly supplied; and,
- Immediately cease using the certificate, the mark of conformity, and any reference to the number of this certificate.

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