



BRANZ Appraised

Appraisal No. 990 [2018]

MAGICSEAL RETROFIT SECONDARY GLAZING AND INSECT SCREENS



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BRANZ Appraisals

Technical Assessments of products for building and construction.



MagicSeal (NZ) Ltd

10c Sheffield Crescent
Burnside
Christchurch 8542

Tel: 0800 10 44 66

Email: info@magicseal.com

Web: magicseal.com



BRANZ

BRANZ

1222 Moonshine Rd,
RD1, Porirua 5381
Private Bag 50 908
Porirua 5240,
New Zealand

Tel: 04 237 1170

branz.co.nz



Product

- 1.1 MagicSeal Retrofit Secondary Glazing and Insect Screens are a range of removable supplementary window fittings that are magnetically sealed to window joinery. MagicSeal Retrofit Secondary Glazing can contribute to the thermal and acoustic performance of window joinery and MagicSeal Insect Screens exclude most insects from entering ventilating windows.

Scope

- 2.1 MagicSeal Retrofit Secondary Glazing are plastic-framed, clear acrylic glazing panels for retrofit installation into existing housing where increases in acoustic and thermal performances are desirable. It is intended for use in buildings that pre-date present-day thermal performances required by the New Zealand Building Code [NZBC].
- 2.2 MagicSeal Insect Screens are fine mesh panels for installation onto openable windows in housing that prevent insects from entering interior spaces through open windows. No requirements exist within the New Zealand Building Code for insect exclusion.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 MagicSeal Retrofit Secondary Glazing and Insect Screens are removeable supplementary fittings, that would normally be regarded as chattels rather than building elements. The product is for use to provide improvements to acoustic and thermal performances, or to omit insects from interior spaces where current Building Code requirements for thermal performance and ventilating openings do not apply.
- 3.2 NZBC requirements that apply to thermal performance and ventilation in specific areas are:
 - Clause E3 Internal Moisture
 - Clause G4 Ventilation
 - Clause H1 Energy Efficiency.

Technical Specification

- 4.1 MagicSeal Retrofit Secondary Glazing are clear acrylic glazing panels with ASA plastic or aluminium frames attached to window or door joinery by self-adhesive magnetic tape. MagicSeal Retrofit Secondary Glazing is intended for use in existing residential buildings.
- 4.2 MagicSeal Insect Screens are fine mesh panels with ASA plastic frames attached to window joinery frames over opening sashes by self-adhesive magnetic tape. MagicSeal Insect Screens are suitable for use in new or existing residential buildings.



Handling and Storage

- 5.1 All components must be kept dry at all times and must be protected from damage or crushing. They should be kept in their original packaging until ready for installation. Care must be taken when handling secondary glazing to avoid marking or scratching glazing surfaces.

Technical Literature

- 6.1 No Technical Literature for design or inspection purposes is referenced by this Appraisal.

Design Information

General

- 7.1 MagicSeal Retrofit Secondary Glazing and MagicSeal Insect Screens are a range of glazed window and door attachments, which are manufactured specifically for each application by New Zealand licensed agents of MagicSeal [N.Z.] Ltd.
- 7.2 MagicSeal Retrofit Secondary Glazing are intended for use on windows and glazed doors of existing residential, buildings, in order to improve the thermal and acoustic insulation performance of the joinery, and to minimise the risk of condensation.
- 7.3 MagicSeal Retrofit Secondary Glazing is suitable for use with single glazed joinery, or joinery fitted with insulating glass units [double glazing]. Thermal and acoustic insulation performance gains will be achieved by fitting MagicSeal Retrofit Secondary Glazing to double glazed joinery, however the gains made as a percentage will be less than can be expected from fitting the same to single glazed joinery. Refer to paragraphs 15.2 and 16.2.
- 7.4 The products may be attached to timber, aluminium, or uPVC frames of window and door joinery. The products are either face-fixed or inset to the joinery. Face fixing is normally used for aluminium and uPVC joinery, whilst insetting is normally used for timber joinery. Pull-tab corners are always used with MagicSeal Insect Screens, and are also normally used with inset MagicSeal Retrofit Secondary Glazing.
- 7.5 MagicSeal Retrofit Secondary Glazing may be fitted to box windows. They may also be fitted to large windows, or to ranch slider doors with vision rails, either as a single panel covering the vision rail, or as two separate panels fitted either side of the vision rail, mullion, or transom.
- 7.6 The attachment of MagicSeal Retrofit Secondary Glazing and MagicSeal Insect Screens to the joinery frames by means of magnetic tapes and the use of pull tabs when inset, facilitates easy removal for cleaning joinery glazing and frames, and when required, for the redecoration or maintenance of the joinery.
- 7.7 Fabrication and installation practices make allowances for such items as window hardware, security latches, condensation channels, curtain rails, and cat flaps, etc.
- 7.8 MagicSeal Retrofit Secondary Glazing are restricted in size to two to three square metres, depending on the perimeter. MagicSeal Retrofit Secondary Glazing panels over 1.2 m² are required to be supported at the base. The use of light coloured thermal edges or designer strips is strongly recommended, especially in hotter climates and on north facing windows with little or no eaves to provide shading.
- 7.9 The product has been Appraised for use on the interior side of windows and glazed doors. The use of MagicSeal Retrofit Secondary Glazing on skylights and other sloping glazing applications such as conservatories is outside the scope of the Appraisal.

Durability

Serviceable Life

- 8.1 MagicSeal Retrofit Secondary Glazing is anticipated to have a serviceable life of at least 10 years providing normal maintenance is carried out as described below. MagicSeal Insect Screens are anticipated to have a serviceable life of at least 5 years.

Maintenance

- 9.1 MagicSeal Retrofit Secondary Glazing and MagicSeal Insect Screens must be maintained in accordance with the instructions given on the MagicSeal Warranty Cards provided with each installation.
- 9.2 MagicSeal Retrofit Secondary Glazing should not be cleaned with harsh or abrasive cleaning products as these may scratch the surfaces and reduce the optical clarity of the acrylic glazing.
- 9.3 On request, the licensed agents of MagicSeal [N.Z.] Ltd will provide a regular cleaning service.

Prevention of Fire Occurring

- 10.1 Separation or protection must be provided to the MagicSeal Retrofit Secondary Glazing and Insect Screens from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 – C/AS6 and NZBC Verification Method C/VM1 provide methods for the separation and protection of combustible materials from heat sources.

Fire Affecting Areas Beyond the Fire Source

Internal Surface Finishes

- 11.1 The Material Group Number for the acrylic glazing material of MagicSeal Retrofit Secondary Glazing products without consideration of the framing componentry is 4. MagicSeal Retrofit Secondary Glazing can be used as internal surface linings where permitted by NZBC Performance Clause C3.4 [a].

Internal Moisture

- 12.1 When MagicSeal Retrofit Secondary Glazing are used in accordance with this Appraisal, it will contribute to the reduction of condensation on windows in high moisture spaces within buildings.
- 12.2 However, indoor moisture control is reliant upon a number of aspects, as well as installing MagicSeal Retrofit Secondary Glazing. This can be best achieved by attending to the following matters:
 - Ensuring weathertightness of existing joinery.
 - Minimising sources of indoor moisture.
 - Providing adequate general levels of ventilation and special ventilation in high moisture release areas [e.g. range hoods and bathroom ventilation].
 - Providing adequate heating [solar and purchased].
 - Insulating external walls, ceilings and floors to discourage condensation and mould growth.

Hazardous Building Materials

- 13.1 MagicSeal Retrofit Secondary Glazing and Insect Screens will not present a health hazard to people.
- 13.2 MagicSeal Retrofit Secondary Glazing and Insect Screens shall not be considered substitutes for safety glass in situations where glazing is required to meet the Human Impact Safety requirements of NZBC Clause F2 [Hazardous Building Materials]. Joinery where required to meet such requirements must be fitted with compliant glazing materials.

Ventilation

- 14.1 The use of MagicSeal Insect Screens on opening windows allows occupants to effectively ventilate interior spaces where insect infiltration would otherwise be a problem. The use of MagicSeal Insect Screens on opening windows optimises their use for providing a form of passive ventilation to buildings, whereby indoor air quality is improved through introduction of fresh air and the removal of stale air.
- 14.2 Where installed correctly, the installation of MagicSeal Retrofit Secondary Glazing and Insect Screens is not expected to limit ventilation provided by opening windows.
- 14.3 MagicSeal Insect Screens are not intended to prevent the entry of unauthorised persons through open windows. The use of window security devices in conjunction with MagicSeal Insect Screens is recommended.



Sound

- 15.1 The use of MagicSeal Retrofit Secondary Glazing is expected to increase the acoustic performance of joinery within existing buildings, thereby delivering an increase in occupant comfort through lower sound transmission from outdoor sources.
- 15.2 The degree of increased acoustic performance will vary, dependent on the manner in which MagicSeal Retrofit Secondary Glazing is installed and other existing factors. Initial acoustic performance of the existing joinery, audio frequency, sound level, glazing orientation and proximity to the noise source are among the variables that will affect the degree of acoustic performance increase that can be expected from the installation of MagicSeal Retrofit Secondary Glazing.

Energy Efficiency

- 16.1 MagicSeal Retrofit Secondary Glazing is expected to increase the thermal performance of joinery within existing buildings, thereby delivering both direct and indirect cost savings to the occupants through reducing the amounts of heating and/or cooling required for interior spaces.
- 16.2 The degree of increased thermal performance will vary, dependent on other existing factors. Initial thermal performance and airtightness of the existing joinery, glazing orientation, degree of potential solar gain and amount of glazed surface within the thermal envelope are among the variables that will affect the degree of thermal performance increase that can be expected from the installation of MagicSeal Retrofit Secondary Glazing.

Installation Information

Installation Skill Level Requirement

- 17.1 The MagicSeal Retrofit Secondary Glazing and Insect Screens must be installed by Magicseal, their dealers or agents.

System Installation

- 18.1 Installation must be in accordance with Magicseal's installation manual and this Appraisal.

Health and Safety

- 19.1 Safe use and handling procedures for the MagicSeal Retrofit Secondary Glazing and Insect Screens are provided in the owner operating guide.

Basis of Appraisal

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

Investigations

- 20.1 Site inspections were carried out by BRANZ to assess methods used for the installation of the MagicSeal Retrofit Secondary Glazing and Insect Screens and to examine completed installations.
- 20.2 The manufacturer's installation manual that supports the installation details and owner operating guides has been examined by BRANZ and found to be satisfactory.
- 20.3 BRANZ has assessed the history of use of MagicSeal Retrofit Secondary Glazing and Insect Screens and found it to be satisfactory. MagicSeal Retrofit Secondary Glazing and Insect Screens were first Appraised by BRANZ in 1998 in BRANZ Appraisal Certificate No. 370.

Quality

- 21.1 Details of the quality and composition of the materials and components used within the system were obtained by BRANZ and found to be satisfactory.
- 21.2 The quality of installation on site is the responsibility of MagicSeal in accordance with the instructions of Magicseal.
- 21.3 Building owners are responsible for the maintenance of MagicSeal Retrofit Secondary Glazing and Insect Screens in accordance with the instructions of Magicseal.



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Sources of Information

- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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In the opinion of BRANZ, **MagicSeal Retrofit Secondary Glazing and Insect Screens** are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **MagicSeal [NZ] Ltd**, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - 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. **MagicSeal [NZ] Ltd**:
 - 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;
 - d) warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty 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 **MagicSeal [NZ] Ltd**.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **MagicSeal [NZ] Ltd** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

09 February 2018