



AUGUST 2011

BEAL Appraisal Certificate



Easygum™ Liquid Applied Waterproofing Membrane System



Version August 1.1



Product

1.1 This Appraisal Certificate covers the EASYGUMi Waterproofing Membrane System which is a liquid applied waterproofing membrane for use on external building elements where an impervious waterproofing membrane is required to meet the requirements of Clause E2.

Building Regulations

2.1 In the opinion of BEAL, the EASYGUMi Waterproofing Membrane System, if designed, installed and maintained in accordance with the statements and conditions of this Appraisal Certificate, will meet the following provisions of the NZBC:

2.2 Clause B2 DURABILITY:

Performance B2.3.1 (c) 5 years and (b) 15 years. The EASYGUMi Waterproofing Membrane System meets this requirement see paragraphs 8.1 to 9.5.

2.3 Clause E2 EXTERNAL MOISTURE:

Performance E2.3.2. The EASYGUMi Waterproofing Membrane System meets this requirement. See paragraphs 10.1 to 10.8.

2.4 Clause F2 HAZARDOUS BUILDING MATERIALS:

Performance F2.3.1. The EASYGUMi Waterproofing Membrane System meets this requirement and will not present a health hazard to people.

2.5 The EASYGUMi Waterproofing Membrane System has been appraised as an **Alternative Solution** in terms of New Zealand Building Code Compliance.

Applicant:

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The most up to date version of this BEAL Appraisal Certificate can be viewed at www.beal.co.nz



Scope and Limitations

3.1 The EASYGUMi Waterproofing Membrane System has been appraised for use as:

- A) A tanking membrane for use on basement walls below grade that are protected from damage by the use of a Jaydex approved protection system;
- B) A waterproofing membrane for use on external roofs with a minimum fall of 1.5° (1:40) towards an outlet;
- C) For buildings within the following scope:
 - Scope limitations of NZBC Acceptable solution E2/AS1, Paragraph 1.1; and,
 - With timber supporting structures designed and constructed in accordance with the NZBC;
 - With concrete supporting structures designed and constructed in accordance with the NZBC.

3.2 This Appraisal Certificate is limited to external waterproofing applications within the following scope:

- Constructed to suitable falls (refer to paragraphs 10.1 to 10.2)
- For areas not subject to foot traffic
- With no steps within the roof, no integral roof gardens and no down pipes discharging directly onto the roof.

3.4 The design and construction of the substrate and control joints is to be to specific design, and is therefore the responsibility of the owner/building designer and building contractor and is outside the scope of this Appraisal Certificate.

3.6 The EASYGUMi Waterproofing Membrane System must be installed by Jaydex approved applicators.

Technical Literature

4.1 The EASYGUMi Waterproofing Systems Technical manual version 2011 must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained within the Technical Literature and scope of this Appraisal Certificate must be followed.

4.2 For a copy of this Technical Literature and any subsequent updates please refer to www.jaydex.co.nz

Technical Specification

5.1 Materials supplied by Jaydex are as follows:

- EASYGUMi Waterproofing Membrane
EASYGUMi Waterproofing Tanking Membrane is a ready to use, elastomeric bituminous emulsion, supplied as a dark grey thixotropic paste in 10 Litre metal pails.
- EASYGUMi Reinforcing Fabric
100gsm non-woven Polyester mesh fabric
- EASYGUMi Reinforcing Tape
Rubberised Polyester reinforcement tape
- EASYGUMi Chopped Strand Material
300gsm chopped strand matting material

Handling and Storage

5.2 All products must be stored inside, in a well ventilated area, up off concrete floors, kept dry, out of direct sunlight and away from freezing conditions. The Membrane products, in the original unopened containers, have a shelf life of 2 years from date of manufacture. Once opened, the product should be used within 12 months.

Design Information

General

6.1 The EASYGUMi Waterproofing Membrane System is suited for use on concrete basement walls below grade provided the applied membrane is protected from mechanical damage from soil and the like. Only Jaydex approved protection should be utilized.

6.2 The EASYGUMi Waterproofing Membrane System is also suited for use on roof structures to prevent water damage to building elements and adjoining areas.

6.3 Movement and control joints may be required in the roof, depending on the shape and size of the rooftop area. Such movement and control joints shall be to specific design.

6.4 Timber framing must comply with NZS 3604:2011 (A1&2), or where specific design is used, the framing shall be of at least equivalent stiffness to the framing provisions of NZS 3604:2011, or comply with the serviceability criteria of AS/NZS1170. In all cases framing must be provided so that the maximum span specified by the substrate manufacturer is met and all sheet edges are fully supported. Timber framing supporting the substrates must be constructed such that the deflections do not exceed 1/600th of the span.

Substrates

Plywood

7.1 Plywood must be treated to H3.2 (CCA treated). **LOSP TREATED TIMBER MUST NOT BE USED.** Plywood must comply with NZBC Acceptable Solution E2/AS1 paragraphs 8.5.3 and 8.5.5.1. Where specific design is required, the plywood thickness may increase and centre's may need to be reduced to meet specific wind loadings.

Fibre Cement compressed sheet

7.2 Fibre cement compressed sheet must be manufactured to comply with AS 2908.2 and suitable for use as an external decking substrate as specified by the manufacturer. The fibre cement sheet must be of sufficient thickness to meet specific structural design requirements and secured to the structure to resist wind uplift and other forces acting upon the deck and balcony (deflection from gravity and live loads). Installation must be in accordance with the instructions of the manufacturer.

Concrete

7.3 Concrete substrates (concrete block, tilt slab etc) must be to a specific engineering design meeting the requirements of the NZBC. e.g. NZS 3101.

Autoclaved Aerated Concrete (AAC)

7.4 Autoclaved Aerated Concrete must be to a specific engineering design meeting the requirements of the NZBC.

Other Substrates

7.7 The EASYGUMi Waterproofing Membrane System can be used over other substrates. Alternative substrates have not been assessed by BEAL and are outside the scope of this Appraisal Certificate. For the waterproofing of alternative substrates, Jaydex should be consulted.

Durability – Clause B2

8.1 The EASYGUMi Waterproofing Membrane System when used in accordance with this Appraisal Certificate and subjected to normal conditions of environment and use, is expected to have a life expectancy of at least 5 years, Clause B2.3.1(c), or 15 years Clause B2.3.1(b), when covered, when maintained in accordance with this Appraisal.

Maintenance

9.1 Provided the substrate and surface finish are installed in accordance with the relevant Technical Literature, and the tanking membrane is not damaged, it requires no maintenance.

9.2 Regular checks must be made of the surface finish to ensure it is sound and does not allow moisture to penetrate. Any cracks or damage to the surface finish must be repaired immediately in accordance with the manufacturers Technical Literature.

9.3 In the event of damage to the membrane, the surface finish (tiles) must be removed and the membrane repaired by removing the damaged portion and re-applying a patch as for new work.

9.4 If the EASYGUMi Waterproofing surface is damaged then the area damaged can be patched as for new work, and similarly, if required, any of the layers of the EASYGUMi Waterproofing Membrane System below grade that have been damaged.

9.5 Drainage outlets must be maintained to operate properly and surface finishes must be kept clean.

9.6 Materials that affect polymer based membranes shall not be used.

External Moisture—Clause E2

10.1 Roofs must be designed and constructed so to shed any precipitated moisture. They must also take into account the effects of snowfalls in snow prone areas.

10.2 Roofs must have a minimum fall of 1 in 40 and gutters 1 in 60. All falls must slope to an outlet.

10.3 Since the EASYGUMi Waterproofing Membrane system is impermeable, a means of dissipating moisture build up must be provided within the building design in order to comply with Clause E2.3.6.

10.4 Basement walls shall be designed and built to meet the performance requirement of the Building Code.

10.5 Drains inside the roof area shall incorporate flanges and shall be fitted with a grate or cage to reduce potential sources of blockages. An overflow must be provided where the roof does not drain into an external gutter or spouting.

10.6 Refer to the Jaydex for approved drains.

10.7 The finished level of penetrations and up-stands of the EASYGUMi Waterproofing Membrane System must be above the level of any possible flooding caused by blockage.

10.8 The design of details not included within the

Technical Literature are subject to specific design and outside the scope of this Appraisal Certificate.

Installation Information

Installation Skill Level Requirement

11.1 Installation of the EASYGUMi Waterproofing Tanking Membrane System must be completed by Jaydex approved applicators.

11.2 Installation of the substrates must be completed by a suitably skilled tradesperson in accordance with instructions given by the respective substrate manufacturer, the EASYGUMi Waterproofing Systems Technical Manual and this Appraisal Certificate.

Preparation of Substrates

12.1 Substrates must be dry, clean and stable before installation commences. Surfaces must be smooth and free from nibs, sharp edges, dust, dirt or other materials such as oil, grease or concrete formwork release agents. All surface defects must be filled to achieve an even and uniform surface.

12.2 Concrete must have cured for minimum of 28 days and must have a relative humidity reading of less than 75% before membrane application.

12.3 The moisture content of the timber substructure must be a maximum of 18% with fibre cement and plywood sheet dry at the time of membrane installation.

12.4 Where determined by the manufacturer, substrates must be primed with the appropriate primer (EASYGUMi Waterproofing Galvanised Iron Primer) and allowed to cure before the membrane is installed.

Membrane Installation

13.1 Installation must not be undertaken when the substrate temperature is below 10°C or if it is likely to drop below 10°C during drying/curing time.

13.2 The EASYGUMi Waterproofing Membrane System must be applied with a minimum of three coats at the rates set out in the Technical Literature to give a total dry film thickness of 800 - 1500 microns.

13.3 Reinforcement Fabric (EASYGUMi Waterproofing Fabric) is bedded into the wet layer between the first and second coats of the EASYGUMi Waterproofing Membrane system. This will provide movement protection at wall/floor junctions as well as any other areas such as joints in the flooring substrate, floor cracks, or around penetrations in the membrane.

13.6 Application should be made by roller, brush or high pressure spray.

13.7 It is strongly recommended that the membrane is protected with temporary covers whilst curing to prevent physical damage or rain wetting.

Health and Safety

15.1 The safe use and handling of the EASYGUMi Waterproofing Membrane System products are provided in the Technical Literature. The products must be used in conjunction with their respective material safety data sheets.

Basis of Appraisal

BEAL use the Compliance Verification Procedure to demonstrate compliance with the relevant clauses of the NZBC based on a risk analysis procedure. The following is a summary of the technical investigations carried out

Tests

16.1 The following testing of the EASYGUMi Waterproofing Membrane System has been undertaken by BEAL.

- Hydrostatic test/ water absorption
- Tensile strength before and after freeze-thaw conditioning
- Pull off adhesion after heat/freeze aging
- Determination of water permeability

Other Investigations

17.1 An assessment was made of the durability of the EASYGUMi Waterproofing Membrane System with a durability opinion given by BEAL.

17.2 The installation of the membrane system was also evaluated in practical building situations assessing the following;

- Ease of installation
- Potential risks of non performance when being installed
- Any external factors that could affect the quality of the installed product
- Ease of repair or maintenance
- Comparison with similar systems

17.3 The Technical Literature has been examined by BEAL and found to be satisfactory.

Quality

18.1 The manufacture of The EASYGUMi Waterproofing Membrane System products by Jaydex has been assessed by BEAL, and details regarding the quality and composition of the materials used obtained by BEAL were found to be satisfactory.

18.2 The quality of materials, components and accessories supplied by Jaydex is managed through the use of a Risk Management Plan.

18.3 The CFG Companies Risk Management Plan ensures continuous conformance with the quality requirements from purchase to supply of components.

18.4 CFG Companies Risk Management Plan is reviewed at least annually by BEAL.

18.5 For a copy of this Technical Literature and any subsequent updates please refer to: www.jaydex.co.nz

18.6 Designers are responsible for the substrate design, and building contractors are responsible for the quality of construction of the substrate systems in accordance with the instructions of the substrate manufacturer, Jaydex and this Appraisal Certificate.

18.7 Building owners are responsible for the maintenance of the tiling systems in accordance with the instructions of Jaydex and this Appraisal Certificate.

Sources of Information

- Test report from Treviso Tecnologia on fire resistance
- JAYDEX Substrate Preparation for Membrane Applicationsq
- JAYDEX Specification
- Test Report 51-09-0124ae from TUM
- Test Report 51-09-0124/001ae from TUM
- Report from Mr. Austin Brooks covering the conversion of Water Vapour Diffusion
- Resistance Coefficient figure.
- Technical Data supplied by the manufacturer
- BEAL test report TR110419 - Hydrostatic Test
- BEAL test report TR110822. Assessment of Durability
- AS 2908.2:2000 Cellulose-cement products . flat sheet
- AS/NZS 2269:1994 Plywood . structural
- NZS 3101: 1995 The design of concrete structures
- NZS 3604:2011 Timber framed Buildings
- Compliance Document for New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third edition May 2008, incorporating amendments 1 to 4.
- New Zealand Building Code Handbook and Approved Documents, Building industry Authority, 1992.
- The Building Regulations 1992, up to, and including October 2004 Amendment.

Concluding statement

19.1 In the opinion of BEAL, The EASYGUMi Waterproofing Membrane System is fit for purpose and will comply with the NZBC to the extent specified provided that it is used, designed, installed and maintained as set out in this Appraisal Certificate.

The Appraisal Certificate is issued only to Jaydex international Ltd, and is valid until further notification, subject to the conditions of this Appraisal.

Conditions of Appraisal

1. This Appraisal Certificate :
 - a) Relates only to The EASYGUMi Waterproofing Membrane System 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 BEAL
2. The Appraisal Certificate holder continues to meet the quality requirements of the Jaydex Building Product Quality Plan and has the Certificate revalidated by BEAL on an annual basis.
3. Jaydex International Ltd, shall notify BEAL and obtain approval of any changes on product specification or quality assurance prior to product being marketed including any trade literature, web site info or the like.
4. BEAL 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 Appraisal Certificate holder.

5. BEAL's verification of the building product or system complying with one or more above-mentioned criteria is given on the basis that the criteria used were those that were appropriate to demonstrate compliance with the NZBC at the date of this Appraisal Certificate. In the event that the criteria is withdrawn or amended at a later date, this Appraisal may no longer remain valid.

6. Any reference in this appraisal certificate to any other publication shall be read as a reference to the version of publication specified in this Appraisal Certificate.

Authorised Signatory



C R Prouse - Director
[August 2011]

