

GRAPHEX Masonry Overlay System - Graphex Overlay 50mm Panel on Concrete Block - Mineral RenderSpec

General

Properties

Acceptable Solution E2/AS3 provides a means of compliance with Building Code Clause E2 External Moisture for concrete and concrete masonry buildings. Building Code Clause E2 requires external roof, wall claddings and external openings to prevent external moisture from causing undue dampness or damage.

It requires buildings to be constructed to provide adequate resistance to penetration by, and the accumulation of, moisture from the outside.

It contains requirements for roofs, wall claddings and external openings to: prevent water entry; prevent water absorption and transmission; prevent the accumulation of water; and allow for dissipation.

Our Masonry Render System is designed to be applied over concrete and concrete masonry construction within the scope of E2/AS3 and will meet the performance criteria of NZBC E2.

The Masonry Render System covers the weathertightness of the building envelope for:

- Concrete slab on ground,
- Concrete and concrete masonry wall systems,
- Concrete to timber construction junctions.

Building Code Compliance

If the project has a building consent then the following clauses apply.

B1 - Structure

This specification complies with the requirements as set out in B1 - Structure which requires buildings, building elements and sitework to withstand the combination of loads and physical conditions they are likely to experience during construction, alteration and throughout their lives. Loads and physical conditions include self-weight, temperature, water, earthquakes, snow, wind, fire.

B2 - Durability

This specification complies with the requirements as set out in B2 - Durability which must always be considered when demonstrating compliance with each of the clauses of the Building Code. It ensures that a building throughout its life will continue to satisfy the performance of the Building Code. It confirms the use of materials that will remain functional throughout the specified intended life of the building, but not less than 50, 15 or 5 years

This cladding system meets the expected durability of the NZBC of at least 15 years

E2 - External Moisture

This specification complies with the requirements as set out in E2 - External Moisture which demonstrates External roof, wall claddings and external openings will prevent external moisture from causing undue dampness or damage.

F2 - Hazardous building materials

This specification complies with the requirements as set out in F2 - Hazardous building materials which safeguards people from illness and injury from quantities of gas, liquid, radiation and solid particles caused by exposure to building materials

On Going Maintenance Instructions

Provide ongoing maintenance instructions required to meet the performance requirements of the NZBC.

Building Consent Authority Requirements

All the appropriate inspections are to be carried out by a BCA representative and that it complies with the NZBC requirements.

Documents

Abbreviations

The following abbreviations are used throughout this work section:

- BCA - Building Consent Authority
- LBP - Licensed Building Practitioner
- PPCS - Proprietary Plaster Cladding System
- MPNZA - Master Painters of New Zealand Association
- MSDS - Material Safety Data Sheet
- NZBC - New Zealand Building Code

Manufacturers Documents

Copies of the above relevant company documents referred to in this specification are available at;

Resene Construction Systems
Web: reseneconstruction.co.nz
Telephone: [0800 50 70 40](tel:0800507040)

No Substitutions

Substitutions are not permitted to any specified Resene Construction Systems system. Materials and execution to Resene Construction Systems specification except where varied by this specification and supported by architectural detailing.

Qualifications

Use only LBP registered plasterers licensed to apply the Resene Construction Systems exterior render systems.

Documentation

Finish Sample

Submit one 300 mm x 300 mm sample of the selected texture finish and colour for approval on request by the main contractor or specifier. Obtain signature of acceptance on sample and return to the Registered Plasterer.

Maintenance Instructions

Provide Resene Construction Systems Maintenance Guide on or before practical completion of the contract for issuing to the building owner. Resene Construction Systems Maintenance Guide to be provided on request.

Producer Statement

If the project has a building consent then a producer statement shall be supplied by the plasterer in the form as required by the BCA.

Health and Safety

Refer to the requirements of the Health and Safety in Employment Act 2015 and Worksafe NZ: Guidelines for the provision of facilities and general safety in the construction industry. If the elimination or isolation of potential hazards and risks is not possible then minimise hazards and risks in this work on site by using the proper equipment and techniques as required in the MPNZA Painters hazard handbook. Supply protective clothing and equipment. Inform employees and others on site of the hazards and put into place procedures for dealing with emergencies. Obtain from Resene Construction Systems the Material Safety Data Sheets for each product. Keep sheets on site and comply with the required safety procedures. Confirmation at the start of the project as to whether a Site Specific Safety Plan is to be produced by the Registered Plasterer prior to works starting.

Warranty

Warrant this system under normal environmental and use conditions against failure. Resene Construction Systems system warranty.
Materials: by Resene Construction Systems - 15 Years Materials only
Execution: by Registered Plasterer - 5 Years Workmanship only

OnSite Assistance

Allow to inspect the whole of the work at each stage. Determine a programme for onsite assistance including notification when each part and stage of the work is ready for inspection prior to the work commencing. Permit representatives of Resene Construction Systems to inspect the work in progress and to take samples of their products from site if requested.

Components Used

Hydroplast

- Polymer modified, waterproof, flexible cement based dry plaster mix. Supplied in 10kg bags.

MultiStop Bedding Compound

- Polymer-modified, cement based dry plaster mix. Supplied in 15kg bags.

Graphex 50mm (2450mm x 1200mm)

- 2400 x 1200
- 50mm Thick
- Allow for 10% Wastage when Installing
- AS 1366 Part 3 Class H (with fire retardant).

Hilti IDP 4/6

- Suitable for 40mm-60mm Substrates

Quick Render

- Polymer-modified cement-based dry plaster mix. Supplied in 20 kg bags

Mesh - Blue (1200mm wide)

- Alkali Resistant 6mm x 5mm Weave mesh supplied in 50m rolls

Fast Float Tasman Texture

- Polymer-modified cement-based dry plaster mix. Supplied in 20 kg bags

Resene Limelock

- Water based acrylic polymer dispersion. Supplied in 10 litre pails.

Resene X200

- Acrylic reinforced waterproof membrane. Supplied in 4 and 10 litre pails. Tinted to the selected colour

Soudal Gorilla MS Sealant White

Gorilla MS is a high performance MS sealant, which is UV-resistant, waterproof, paintable*, solvent-free and with superior flexibility.

Ideal for the sealing of expansion and connection joints with a wide range of movement. Suitable for a wide range of substrates including blockwork, brickwork, granite, marble, timber, coated and uncoated aluminum.

Supplied in 420gm cartridges

Features and Benefits:

- Non slump
- The whitest of whites
- 900% elongation of break
- High performance MS
- BRANZ Appraised
- Works on damp surfaces
- Paintable 1 hour after application
- UV resistant
- AsureQuality tested
- Easily repairable
- Interior & exterior
- Solvent-free

Installation/Application

Masonry Substrate

Preparation based on new substrate installations.

Preliminary Checks

Check all exposed surfaces of the substrate are straight, plumb and undamaged. Any loose material identified must be removed and replaced. Ensure pointing has cured according to manufacturers specifications.

Wall Alignment

Using a straight edge, check joints are smooth and that the wall is flat and true. The Render coating is not designed to straighten deviations which exceed the specified Render System thickness.

Builder Supplied Flashings

Make sure all builder supplied flashings are in place.

Liquid membrane flashings to openings

Install hydroplast to the perimeter of all opening as per E2/AS3

Flashing Installation

Refer to the flashings as outlined within the RenderSpec™

Control / Expansion Joint Set outs

Control joints shall be included as specified in E2/AS3 and in any other locations specified by the manufacturer.

Clean Surface

When the substrate has been left for a period of time, dust and dirt may build up on the surface. This contamination must be removed prior to render application.

Masking

Before application of Render, apply masking to all joinery, pipes, roofs and all areas likely to be marked by the Render. Use drop cloths and ground covers to keep the working areas clean.

Improve adhesion

Wet the wall down, or use a solution of Rockcote Acrylbond and Water – ratio 1 part Acrylbond: 4 parts water to minimise the suction of the substrate.

Colour selection

For further information on Light Reflectance Values (LRV) refer to TradeSpec™ Document 1.6 – Light Reflectance Values

Plaster Systems Hydroplast (Tanking to Reveals)

Waterproofing Window Reveals – Concrete and ICF Block

All joinery reveals must be waterproofed prior to application of renders. A liquid membrane or similar waterproofing must be applied. The membrane must cover the entire window reveal and extend at least 50mm down the outside face of the form work / block work.

Reveals must be made good (blow holes, bug holes rendered) to ensure the application of the water proof membrane is accurate.

Resene Construction Systems recommends the use of Resene Construction Systems Hydroplast (Refer to Technical DataSheet) as the waterproofing membrane. Refer to WNZ details July 2005 Windows Association of New Zealand for more information.

Typically used around Concrete block and ICF Block (Poly blocks) window and other openings. Also applied over prepared Foundations, parapets, balustrade tops to provide a waterproof coating ready to accept Rockcote Resene finishing coats.

Expectation

HydroPlast will cure to form a strong, hydrophobic, flexible and crack resistant background which will accept Rockcote Resene finishing coats.

Limitations

Do not apply more than 2mm per coat. Can be used with or without reinforcing mesh dependant on specified application. If applying to foundations or balustrade tops 150gsm Alkali resistant fibreglass mesh must be applied. Mix only enough as can be used in 30mins @ 18 degrees.

Technical Data

Coverage: 5m² @ 2mm thick

Mix ratio: Trowellable - 10kg plaster requires approx. 3L of water (trowellable)

Brushable - 10kg plaster requires approx. 3.3L of water

Rockcote MultiStop Bedding Notch/Key Coat

Surface Preparation

Ensure surface is clean, sound, dry and free from dust, dirt, grease, mould and lichen.

Application

Plaster to be applied with a notched tile trowel (3-5mm notch) across the entire surface of the substrate immediately prior to installation.

Apply plaster only when the temperature is between 5°C and 30°C and will be in that range for the 24 hours period following application

If you are using the notched key coat for adhering a substrate or moulding to a masonry surface ensure that in summer or hot dry conditions pre-wet the masonry substrate. Allow the wet sheen to dissipate. This will reduce the chance of delamination due to rapid suction from the dry/hot substrate.

Curing:

Protect newly applied plaster from rain and water run off for the first 24 hours.

Graphex Sheets 50mm

There must be no horizontal surfaces which will be subject to water ponding; a minimum slope of 5 degrees is required (for metal caps only, 10 degrees for liquid membranes).

Ground Clearances

It is important that ground clearances are maintained after completion and occupation of the building, with the exterior ground sloped to carry water away from the exterior walls.

Garage floors

Need to be low enough to drive onto and high enough to provide a minimum 50 mm step-down to exterior paving, while maintaining cladding clearances either side of the garage door. To achieve this it may be necessary to construct the garage floor lower than the floor level of the building.

In these situations, providing a 'nib' at garage doorways allows the cladding to continue in a straight line while maintaining minimum clearances at the bottom of wall cavities for ventilation.

E2/AS1 : reference section 9.1.3 and Figure 65 and Table 18

It is the landscaper or other external contractor's responsibility for ground level compliance in relation to cladding clearance and that ground clearances are maintained after completion and occupation of the building.

Decking Clearances / Level thresholds

35mm minimum clearance at the highest point of the deck to the cladding is required.

E2/AS1 : reference section 7.0

Control/Expansion Joint Set outs

- Where columns intersect beamwork control joints should be formed so that they are running vertically and horizontally of the intersection
- Large doors & windows ie Ranch Sliders, & Bi-Fold type where the window area is greater than 8.0m²
- Junctions between dissimilar materials, ie Masonry to Resene Construction Systems Graphex System
- Where there are small widths of plaster (ie. less than a trowel width)
- Where the wall length is greater than 8 metres in length a vertical control joint will need to be installed
- Where a two storey dwelling wall height exceeds 6 metres a horizontal control joint is required
- Control Joints are required at all interfloor levels on multi-level construction (eg. 3 or more floors)

Substrate Installation

All Graphex insulation boards must be installed; vertically, be fully supported on all edges and butt-jointed hard against each other. Where a sheet join is fully supported on timber framing, one nail and washer may be used to fix both sheets. Any gaps between sheets must not be greater than 5mm. All gaps must be foam filled.

Substrate Preparation

Check should be made using a straight edge to ensure the wall is flat, plumb and true. Any irregularities should be taken out by straightening using a rasp.

The substrate must be rasped to provide keying for the Render application.

The Render coating is not designed to straighten deviations that exceed the specified Render System thickness.

Once the substrate is deemed ready for plaster, then the main contractor can continue to fix the internal linings. This is so that the main contractor can minimise the chance of any damage to the external plaster cladding that may be caused by the fixing process of the internal linings.

Hilti 4/6 (40mm - 60mm Substrate Fastener)

Insulation Fastener Installation – IDP's

If you are using an IDP fastener to secure the substrate to the masonry use a masonry drill with correct length & diameter drill bit in accordance with table 1, at centres specified in table 3.

Insulation Fastener Installation – Using a Powder Actuated Tool

Powder actuated fastening can only be used when the structure is SOLID filled masonry. Partial filled masonry walls may get damaged by fastening using a Powder Actuated Tool.

If you are using a Powder Actuated Tool to fix an Insulation Fastener take care to follow all Health and Safety requirements of the Power Tool. Fix fasteners in accordance with table 2, at centres specified in Table 3.

Fix insulation boards with fasteners and washers as given in the Table 1 – Fastener Sizes

Fix fasteners through the insulation board, and into the substrate at the fixing centres shown in Table 3 – Fastening centres.

Fixings must be flush against the insulation board, and pulls the sheet hard back against the substrate

3mm notched trowel coat application adhesive applied to the entire surface of the insulation board prior to fitting.

When Installing fasteners into a masonry substrate do this within 48 hours of adhering to the substrate.

Installation

Table 1 – IDP Fastener Sizes

| Fastener type | Drill bit diameter |
|---------------|--------------------|
| IDP 4/6 * | 8mm |

* Hilti Fasteners

Table 2 – Powder Actuated Tool Fastening – Fastener Sizes

| Fastener type | Maximum Fastening centres (mm) |
|---------------|--------------------------------|
| X-IE-6-50 * | 400 |

* Hilti Fasteners

Table 3 – Fastening centres

| NZS 3604 Building Wind Zones Maximum Fastening centres (mm) | |
|---|-----|
| Low | 400 |
| Medium | 400 |
| High | 400 |
| Very High | 400 |

Check and Prepare EPS / Graphex

Preparation based on new substrate installations.

Preliminary Checks

Check should be made using a straight edge to ensure the wall is flat, plumb and true. Any irregularities should be taken out by straightening using a rasp.

The Render coating is not designed to straighten deviations which exceed the specified Rockcote Render System thickness.

Once the substrate is deemed ready for plaster then the main contractor can continue to fix the internal linings, this is so that the main contractor can minimise the chance of any damage to the external plaster cladding that may be caused from the fixing process of the internal linings.

2.9.2.Clean Surface

If the substrate has been left exposed to UV / sunlight for more than two weeks, dust and dirt may build up on the surface, the surface may also discolour (yellow) you must remove all surface dust, oxidation, and other contaminants to reveal fresh polystyrene. Use a rasp or a stiff broom to prepare the substrate.

2.9.3.Masking

Before application of Render, apply masking to all joinery, pipes, roofs and all areas likely to be marked by the Render. Use drop cloths and ground covers to keep the working areas clean.

2.9.4.Colour selection

For further information on Light Reflectance Values (LRV) refer to information located at <https://reseneconstruction.co.nz/light-reflectance-values/>

Penetrations

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

Rockcote PM100 Quick Render Base Coat

Surface Preparation

Ensure surface is clean, sound, dry and free from dust, dirt, grease, mould and lichen.

Application

Mix a solution of Acrylbond and Rockcote MultiStop together and apply using a roller .

Curing:

Render should be protected from hot drying winds and direct sunlight for the first 6 hours..

Resene Construction Systems Mesh (Standard Weave)

General

Measured and cut slightly longer than the height/length of the area to be covered.

Application of Fibreglass Mesh

Apply the pre-measured mesh from the top of the wall.

Press the fibreglass mesh into the render mix with a steel trowel starting at the centre and working outwards towards the sides, so that it is completely embedded with the render mix forced right through the mesh holes.

Ensure there are no wrinkles or trapped bubbles in the mesh and that it is fully embedded just below the surface of the render.

Do not embed the leading edge of mesh as this locates your next mesh layer.

Mesh must not be exposed but retained as close to the surface as possible.

Overlap mesh 100 mm with the adjacent drop of mesh, and trowel to embed together.

Ensure the fibreglass mesh covers all exposed areas of the substrate, including any recesses around the exterior joinery and internal corners.

Fibreglass Mesh must be bought to the outside edge of all Flashings.

Apply 450 x 150 mm strips of fibreglass mesh `butterflies' diagonally at every corner of openings for window and door joinery, meter boxes etc.

After the render mix has cured, trim off excess length accurately against the flashing edge.

Rockcote PM100 Quick Render Levelling Coat

Surface Preparation

Ensure surface is clean, sound, dry and free from dust, dirt, grease, mould and lichen.

Application

Plaster can be applied with a steel trowel, pump or broad-knife at approximately 2-3mm thick (6m2 per bag). Apply plaster only when the temperature is between 5°C and 30°C and will be in that range for the 24 hours period following application.

Curing:

Render should be protected from hot drying winds and direct sunlight for the first 16 hours. Protect newly applied plaster from rain and water run off for the first 24 hours.

Rockcote Fast Float Tasman Texture Finish

Application:

Plaster is applied not less than 1mm (8m² per bag) with a steel trowel to a flat finish then float using a circular action to an even texture over the following five minutes with a plastic float. Apply plaster only when the temperature is between 5°C and 30°C and will be in that range for the 24 hours period following application.

Curing:

Plaster should be protected from hot drying winds and direct sunlight for the first 16 hours. Protect newly applied plaster from rain and water run off for the first 24 hours. It is able to be sealed while the finish is still green.

Resene Limelock Sealer

Application

Apply to trowelled plasters immediately after final trowelling (Dependent on surface porosity, typically 5-8m² per litre). Apply one coat of Resene Limelock over the fresh substrate by commercial grade knapsack sprayer, spray, long pile roller or brush and allow to dry. Evenly coat all fresh surfaces to ensure uniform curing and that free lime cannot be transferred through weak points.

Resene X200 Paint Finish (2 Coats)

Application

Use a 12-20mm synthetic fibre roller or texturing roller depending on surface. Apply two coats, First coat 2 sq. metres per litre, Second coat: 3.5 sq. metres per litre

Maintenance

Plan what maintenance you propose to undertake.

Take into consideration the type of work that is required, & the time of year you want to get it done. Most external maintenance is completed in the summer as this is generally the best weather for drying and for general outside work such as gardening. If you are planning on fixing brackets, security lights or any other fixture to the exterior make sure you have the skills & equipment to undertake the task.

If you are unsure call a specialist.

If it relates to a penetration through the exterior cladding call us direct on 0800 50 70 40 - a simple phone call could save you time & money later. Maintenance sounds difficult & costly - in fact, it can be quite the opposite.

It can become difficult & costly if it is never undertaken, by which time other issues may have arisen that could have been acted upon sooner through regular general maintenance.

There are virtually no "maintenance free" exterior claddings on the market, in fact, almost nothing is maintenance-free - many people tend to throw things away these days when they breakdown as it is cheaper than getting it fixed. This is not the case with your exterior cladding, you can't just throw it away, it is protecting your family & your belongings. It is quite interesting to note that most people maintain their garden, & vehicle so they look good. Yet when it comes to cleaning the exterior windows, & walls or clearing leaves from a blocked gutter it seems to get left alone as it is perceived to be "difficult" or there are better things to do, maybe the dirt & leaves will simply disappear one day. This generally isn't the case & regular maintenance is required.

One of your major life investments is property so why not look after it? General Maintenance is a requirement of the Resene Construction Systems Performance Guarantee.

Extent of Maintenance

The extent and nature of necessary maintenance is dependent on the

- Type of cladding or components used
- Position of cladding or components on the building
- Geographical Location of the building
- Specific site conditions.
- Areas that are considered non-maintainable
- Heavily textured areas

Wash Exterior Surfaces

You will need to clean down your Resene Construction Systems Plaster Finish every 12 -18 mths. Most airborne dirt particles accumulate on exterior surfaces during the summer months. So before the winter rain washes the dirt down over the walls, give these areas a clean, this will dramatically reduce the chances of your Resene Construction Systems Plaster Finish being stained.

Washing by rain removes most atmospheric contaminants, but sheltered areas, such as walls directly below eaves, are protected from the direct effects of rain and require regular manual washing. This work should be completed using a low-pressure water blaster (300 psi or less), keep the blaster at a 45-degree angle and 300mm away from the cladding when cleaning. For best results use "Resene Roof wash and paint cleaner". Apply the diluted solution with a soft broom, & wash off with copious amounts of freshwater. Most detergents have a detrimental effect on fish life so avoid letting the washings runoff into the stormwater system. DO NOT use harsh solvent-based cleaners.

However, it is important that high-pressure water is not directed at sensitive junctions such as window surrounds and other flashings. Great care must be taken to avoid water being driven past anti-capillary gaps and flashings into the wall cavities.

Roof Junctions and Spouting

When cleaning, check your spouting to make sure there are no leaves that could block drains, or overflows when it rains. Trim back branches and clear gutters at the same time. Consider fitting gutter guards (however, dirt can still get through, so you do need to check under the gutter guards from time to time). Check apron flashing diverters (kick-outs) to make sure these are diverting water away from the cladding.

Deck and Ground Clearances

Exterior claddings require a minimum ground clearance to ensure no moisture gets to the timber of the wall due to capillary action. Ground clearances between the cladding and ground/deck must be maintained. For more information on required Ground Clearances refer the NZBC..

If your lawn adjoins the house, a 150-225mm wide mowing strip along the edge will stop grass and weeds growing in these difficult-to-mow areas - and keep the area drier. A mowing strip will also prevent damage to the house from hitting the cladding with the mower. You can also use concrete, bricks, pavers or treated timber for a mowing strip, laid on a concrete base or on polythene but make sure there is at least 100mm gap between the pavers and the base of the cladding.

Check Sealants

Check for cracked, missing or loose sealant. You will find sealants have been used around windows, doors, electrical fittings, plumbing fittings and along the soffit line. All deteriorated sealants should be removed and resealed

Check hidden areas

Check behind foliage, under decks and areas that are heavily shaded for signs of algae and mould. If possible increase the circulation of air around these points by pruning foliage. The use of mulch, bark or stones in these areas will also lower the risk of algae appearing on the surface of the coatings.

Damaged Areas

Contact your Registered Plasterer they will provide the necessary expertise to remedy the damage. If you are unable to contact a registered Resene Construction Systems Plasterer call Resene Construction Systems - FreePhone 0800 50 70 40 -we will arrange for an inspection & provide an assessment for the repair the exterior cladding.

Non-Maintainable Areas

Parapets are considered non-maintainable areas. They are in such a location as the degree of difficulty to maintain these areas according to the general maintenance requirements of the building code without risk to your health and safety is considered high. If you have areas that are non-maintainable we would require that these are checked every 6 months. Any non-maintainable areas will also need to be repainted/coated every 2-3 years.

Repainting a Dwelling

Repainting the exterior should be undertaken by a professional painter every 7 - 10 years to ensure the integrity of the entire system is kept good. If you select a colour which has an LRV less than 25% you can expect to repaint every 7 years. It is recommended that when you repaint your dwelling that you consider the use of Resene X200 as your choice of paint.

Maintainable Parapet Areas utilising Liquid Membranes

If you have areas that have maintainable liquid membrane eg.large sloping sills, balustrades, chimney breasts we would require that these are checked every 12 months. Any maintainable areas will also need to be repainted/coated every 3-5 years.

Important:

This specification must be read in conjunction with the Resene Construction Systems technical drawings.

No alteration to the Resene Construction Systems RenderSpec® is permitted.

All Technical Data Sheets are available at <https://reseneconstruction.co.nz/technical-library/technical-data-sheets/>

All Safety Data Sheets are available at <https://reseneconstruction.co.nz/technical-library/safety-data-sheets/>