MagRoc
Building New Zealand Better

# Building Product Quality Plan

## for

# Structural Insulated Panel System & Cladding System

0800 MAGROC
www.magroc.co.nz

Version 5, May 2013

MagRoc (NZ) Limted
Po Box 12204
314 Port Hills Road, Hillsborough 8022,
Christchurch, New Zealand

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# Mag Roc (NZ) Limited

**314 Port Hills Road**
**Hillsborough 8022, Christchurch, NZ**

## 1.0 Policy

MagRoc (NZ) Limited will import the finest quality materials / products for the New Zealand market ensuring quality of these products are suited to their intended use.

MagRoc (NZ) Limited will then combine these raw materials to produce the highest quality product available in New Zealand.

MagRoc (NZ) Limited will provide materials / product to our distributors, installers, and consumers using the guidelines and strict procedures under this Building Product Quality Plan specify.

## 2.0 Introduction

MagRoc (NZ) Limited was formed on October 28th, 2011; to offer an alternative building solution. the MagRoc SIP System would be competitively priced & would be a suitable material for the building market.

In 2011 we decided that our materials / products needed to have an appraisal from a suitably experienced testing laboratory and we asked the Building Element Assessment Laboratory (BEAL) to carry out an appraisal of our products. The appraisal would demonstrate to councils, clients and our distributors that the materials / products covered by the appraisal, when installed according to our technical manual, would comply with the relevant clauses of the New Zealand Building Code.

### 2.1 Contact Details

Head Office: 314 Port Hills Road,
Hillsborough, Christchurch 8022

General Enquiries: 0800 MAGROC
PO Box 12204, Beckenham 8242
enquiry@magroc.co.nz
www.magroc.co.nz

Directors: Steve Knewstubb 027 432 1244
Dean Buckeridge 027 227 7637

## 3.0 Reference Documents

1. Building Act 2004 and amendments
2. Local Building Regulations & Council Documents / By-laws
3. Compliance documents supplied by the Department of Building and Housing
4. BEAL Auditing Services Ltd's Standard for a Building Product Quality Plan
5. Technical information supplied by MagRoc (NZ) Limited
7. Trade literature supplied by MagRoc (NZ) Limited
8. BEAL Appraisal documents: BTS 1130

## 4.0 List of Products

| | Product Type | Description |
|---|---|---|
| 1 | MagRoc SIP System | Structural Insulation Panel System |
| | Including: | MagRoc Internal & External SIP Walls |
| | | MagRoc MagRoof & WarmRoof Panels |
| | | MagRoc MagFloor & WarmFloor Panels |
| 2 | MagClad | Lightweight Cladding Panel (thinner variation of a SIP) |

## 5.0 Key Risk Issues

There is multiple areas to address when looking at key risks involved with MagRoc SIP panels. There is 3 parts to consider:

- Supply of Raw Materials & Components
- Manufacturing of the SIP panels
- Installation of the SIP panels and Cladding panels

MagRoc starts with placing strict Quality Control procedures in place at all 3 levels to insure these risks are minimised (if not eliminated) at all times. We monitor, manage, and if necessary correct any nonconforming materials and / or panels by using this BPQP's multiple tools.

The key risks are managed by the Operations Manager, and over seen by both the directors, and production manager at various stages.


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## 5.1 Key Risks

### Key Risks with supply of Raw Materials & Components

| | |
|---|---|
| 1 | Raw materials supplied to us not meeting the relevant QC specifications |
| 2 | Raw Materials supplied to us not properly identified |
| 3 | Raw Materials supplied to us damaged |
| 4 | Components supplied to us not meeting our QC specifications |
| 5 | Components supplied to us damaged |
| 6 | Raw Material Suppliers & or Component Suppliers not keeping there QC Management programs up to date |
| 7 | Product is not stored, labelled, and handled correctly |

### Key Risks with Manufacturing process of the SIP Panels

| | |
|---|---|
| 1 | Operators do not follow or carry out correct QC procedures |
| 2 | Operators do not carry out correct manufacturing techniques and procedures |
| 3 | MagRoc manufacturing machinery is not operating correctly |
| 4 | The Production Manager does not carry out correct QC supervision procedures |
| 5 | Product is not stored, labelled, and handled correctly |
| 6 | An External Audit of our BPQP not being carried out at least once a year |
| 7 | An Internal Audit of our BPQP not being carried out on a six monthly basis |

### Key Risks with Installation of the SIP Panels or Cladding Panels

| | |
|---|---|
| 1 | Our technical manual is not up to date and / or displaying the version number |
| 2 | Installation drawings are not up to date and / or displaying the issue number |
| 3 | Training Manual(s) are not up to date and / or displaying the Issue Number |
| 4 | Record of Construction & Check List Sheets not properly completed by the Installer as per agreement of the BPQP and Technical Installation Manual. |
| 5 | Lack of information to end user/owner on proper maintenance of the product |
| 6 | Materials supplied by us to a distributor or end user not properly identified, or not appropriate for the right job |
| 7 | Materials supplied are damaged in transportation, storage, and or handling on site |
| 8 | Lack of supervision by trained and approved MagRoc Installer with on site helpers |
| 9 | Lack of correct tools for installation |

## 5.2 Monitoring, Managing, and Correcting Key Risks

Monitoring all the key risks will be conducted through multiple channels throughout the MagRoc organisation and its processes. With Raw materials this is mainly conducted through the Quality Control procedures and criteria suppliers must adhere to in Section 8.0 and furthermore the inspection and certificates stated in Appendix A.

This will be managed by the Operation and Production managers at there respective stages within the process. From this if any issues / risks are identified from these tests or periodical audits on suppliers this will be dealt with using the guidelines from Section 12.0 and Appendix D in which a complaint form is filed.

From a Manufacturing point of view the key risks are mainly addressed through quality training and supervision from the Production and Operation Managers to instil in all operators and employees the importance of why all procedures, systems, and quality controls are in place and have to be followed at all times. This is managed through constant supervision and set targets and controls placed on the operators to produce the highest quality MagRoc SIP panels possible.

If key risks / issues arise in the manufacturing process they will be dealt with immediately to improve our systems and processes. This will be driven by the Operations manager, with support and feedback provided by the Production Manager and Operators. Above and beyond this a bi-annual audit of our BPQP will be carried out internally by the Operations Manager and Directors, with an annual external audit carried out by BEAL.

On an Installation front there is a couple key risks that will need to be addressed at all times. This is all centred around properly trained and certified MagRoc installers adhering to all technical installation guides, along with carrying out all quality control processes including the ROC (Appendix E), along with conforming to all building code and local council requirements.

To manage the key risks on the building site and during the installation MagRoc has design both the Technical Installation Manual, BPQP, ROC, to provide a comprehensive amount of information and checks for any qualified builder to be able to carry out the installation of MagRoc's SIP system to the highest quality.

If any key issues / risks become evident during the installation process the Installer should contact their MagRoc representative immediately and we will work through the situation to find the ideal solution. This can also be submitted using the MagRoc Complaint Form (Appendix D). MagRoc will strive to continue to eliminate all key risks within the installation process and provide up to date technical guides to all certified installers and distributors across the country.


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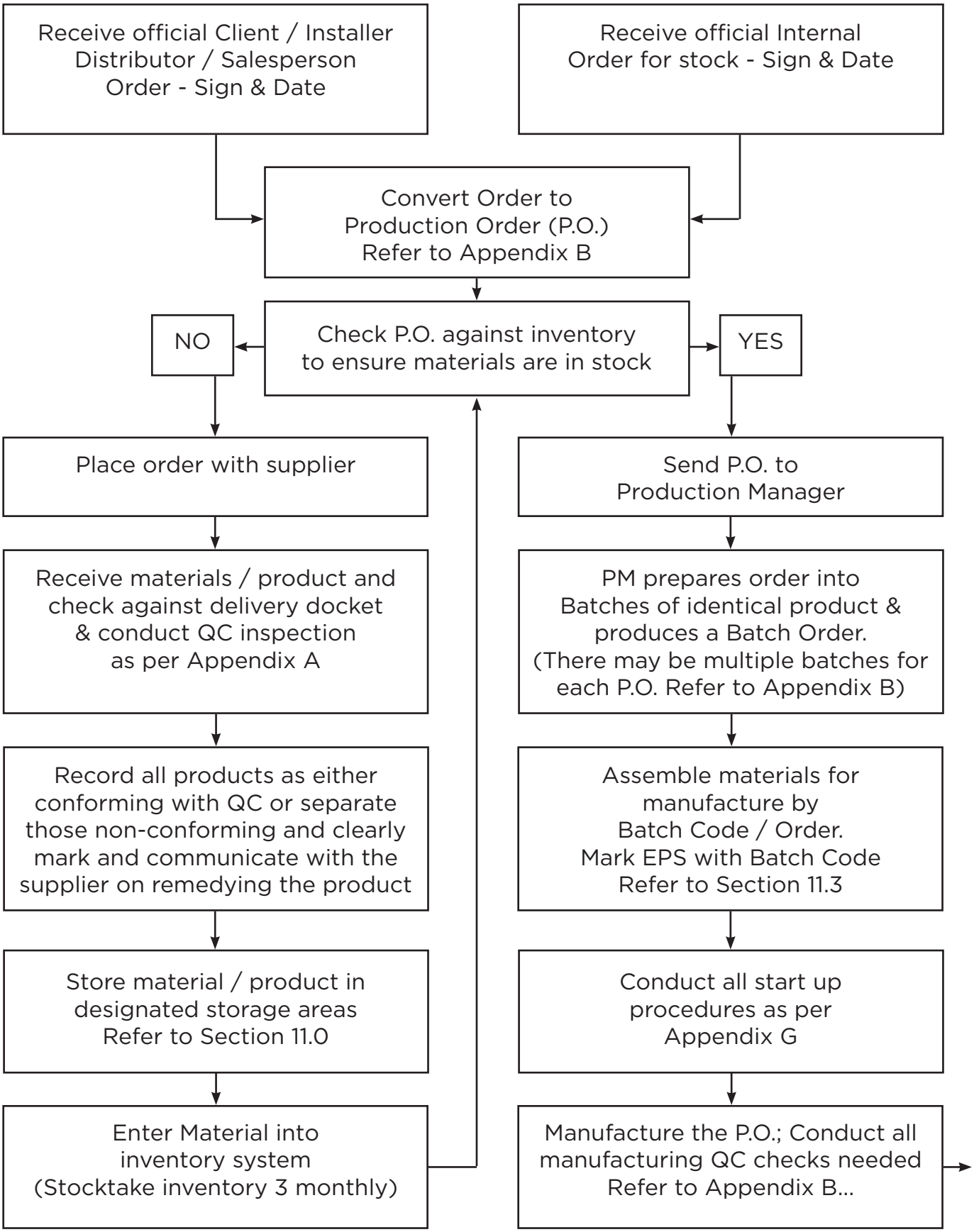
# 6.0 Flow Chart of processes from Raw Material to Finished Product on site



Cntd...*Manufacture the P.O.*
*Conduct all manufacturing QC checks needed*
*Refer to Appendix B...*

↓

Conduct all Close down procedures as per Appendix G

↓

Attach PINK B.O. to P.O. and hand this to the Production Manager

Attach GREEN B.O. to panels

↓

Store manufactured panels in designated area
Refer to 11.2.1

↓

Conduct Post manufacturing Quality Control checks
Refer to Appendix B

↓

For panels that conform:

Prepare delivery docket and arrange transport with client / installer / distributor

→ Non-conforming panels:

Place a new P.O. for those specific panels and repeat manufacturing steps

↓

Prepare order for dispatch with all labels, packaging, documentation attached
Refer to Section 11.4

→ Deal with Non-conforming delivery, refer to Section 12.0 and fill out Complaint Form found in Appendix D

↓

Gain confirmation of Satisfactory delivery

↓



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Ctnd... *Gain confirmation of Satisfactory delivery*

Panels arrive on site

Confirmation of Certified MagRoc Installer on site installing / supervising the job.

MagRoc Installer provides ROC as per Appendix E to MagRoc Office

MagRoc Installer completes maintenance / warranty form and hands it to the owner (reference Appendix H)

Home Owner registers with MagRoc NZ Limited to initiate Warranty Policy

Panels arrive on site:

Training required for Installer to become a MagRoc Certified Installer

Training is arranged with MagRoc Operations Manager BEFORE job gets underway

All training manuals, BPQP, and Technical Installation manual are given to be reviewed by installer

Training is conducted on site, along with theoretical aspects completed off site

Installer conducts first job with supervision from MagRoc with periodical checks completed and becomes certified

MagRoc Installer provides ROC as per Appendix E to MagRoc Office

# 7.0 General Description of Product Supplied

## 7.1 MagRoc Structural Insulated Panel System

MagRoc (NZ) Limited manufactures a high end, quality, SIP (Structural Insulated Panel) System including all or part of External and Internal Walls, WarmRoof Panels, and MagFloor Panels. SIP's are a Structural alternative to conventional stud construction techniques that meets the requirements of the MagRoc™ (NZ) Limited Beal appraisal. Ref 1130.

The benefits of the MagRoc (NZ) Limited SIP systems are:

- Better thermal insulation and airtightness of the home
- Strength and durability – reduces damage and sustains high impact
- Environmentally friendly product
- Mould, Water, and Fire resistant
- High level of quality, with versatility of finishing options
- Assists with project management
- Lightweight – weight advantage over concrete or cement board
- 50 year manufacturers warranty for the Structural elements of the building.
- Low maintenance.
- Installation service available by approved and credited local distributors / installers.

## 7.2 MagRoc MagClad

The MagClad System is an exterior wall cladding system that provides a light weight, high quality, and highly durable cladding solution perfectly suited to the needs of residential housing and light commercial buildings. The MagClad System incorporates a drained cavity and MagRoc Approved exterior finishing system for superior weather protection and moisture management. MagClad system is a sensible cladding system for the New Zealand market.

MagClad is a variation of a MagRoc SIP panel made from S Grade Expanded Polystyrene (EPS) over which sheets of MagRoc board are adhered on each side. Thickness of panel can range from 50mm to 100mm, to suit your particular requirement. Standard MagRoc facing & backing boards are 4.5mm & 8mm or 8mm & 8mm. The MagClad panels exposed surfaces are coated with an approved reinforced plaster and exterior finishing system to produce the selected high build texture finish.


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# 8.0 Component Specifications:

## 8.1 Criteria to Supply to MagRoc

All material supplied in raw form to MagRoc must have their own extensive quality control programmes in place that meet or exceed AS/NZ standards. They have to demonstrate to MagRoc they continue to abide by these controls and ideally continuing to improve them. They will be subject to periodical audits from MagRoc if deemed necessary.

For the MagRoc (NZ) Limited SIP System the components specified also have to prove they have extensive quality control processes in place, and have undergone a BEAL or BRANZ appraisal process that meets or exceeds all AS/NZ building standards.

Only products specified in this BPQP are to be used in the manufacturing or constructing of MagRoc's SIP System. The specifications for those materials deemed to be high or medium risk in Section 10.0 are included at the rear of this BPQP in Appendix C.

All Suppliers of Raw material are from single location factories overseas. We will continue to monitor if these suppliers expand from 1 to 2 factories but at this stage it is unlikely this situation will happen. If it does we will amend our criteria to specify the supply from a single factory.

## 8.2 Manufactured Components Specified:

| | |
|---|---|
| **MAGROC ™ MgO Board (Magnesium oxide board):** | 3, 4.5, 6, 8, 10, 12, 15, 18, & 21mm thick – nominal sizes 2440, 2745, 3050 long by 1200 or 1220 wide sheets. All MgO shall comply with MagRoc Quality Control Inspections as per Appendix A and meet standards in section 3.1 of the AC386 from ICC ES. |
| **EPS:** | Expanded Polystyrene – Grade S or better.<br>All EPS shall comply with AS 1366.3 - 1992 |
| **Panel Laminating Glue:** | Ashlands Isogrip SP polyurethane<br>Complies with ISO9001:2008 Reg #FM549050,<br>Reference found in Appendix A |

## 8.3 Sourced Components Specified:

| | |
|---|---|
| **Timber Plates:** | **MSG-8 H1.2 or better in structural areas**. Complying with;<br>Amendment 4 NZS 3603:1993 Timber Structures Standard.<br>Amendment 2 NZS 3604:1999 Timber Framed Buildings.<br>Amendment 1 NZS 3622: 2004 Verification of Timber Properties.<br>http://www.verifiedtimber.co.nz/Structural-Timber-Information.pdf |

**Foam Adhesive:**

Low expandable PU foam adhesive that has been approved by MagRoc (NZ) Limited.

**Specified: Penosil Goldgun Low Expandable Foam**
http://www.acis.co.nz/docs/1/techdocs/TDS%20Penosil%20 - Gold%20Gun%20Low%20Expansion.pdf

**Building Sealant:**

Non-solvent based Silicone Sealant approved and tested by MagRoc.

**Specified: Sika MS**
http://www.branz.co.nz/cms_branz_show_appraisal.php?id=95

**Flashing Tape:**

MagRoc tested and approved flexible flashing tape.

**Specified: Tescon Extora Flashing Tape**
http://www.productspec.net/products/38874/pro-clima-nz-ltd/tescon-extora-weatertight-sealing-tape.aspx

**Flashings & Mouldings:**

For all window and external extrusions, the MagRoc Technical Manual Window and Extrusion details should be followed.

**PEF Rod:**

MagRoc tested and approved PEF Rod

**Specified: Sika PEF Rod**
http://www.flexiseal.co.nz/Sika-PEF-Rod.htm

**Adhesive for Flashings & Mouldings:**

MagRoc approved construction adhesive, which is non-solvent based.

**Specified: Sika Nailbond Premium**
http://nzl.sika.com/en/solutions_products/02/02a012/02a012sa03.html

**Timber Battens:**

**MSG-8 H3 or better in structural areas**. Complying with;
Amendment 4 NZS 3603:1993 Timber Structures Standard.
Amendment 2 NZS 3604:1999 Timber Framed Buildings.
Amendment 1 NZS 3622: 2004 Verification of Timber Properties.
http://www.verifiedtimber.co.nz/Structural-Timber-Information.pdf


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**Screws:** All screws shall be either:
**- Class3 galvanised, CP3 polymer coated or**
**- Stainless steel, and comply with AS3566.2**

For fixing splines and jointing MagRoc board specify:
**8G x 32mm Quikdrive Cement Board Hi Lo galv. screws**

For fixing timber corner studs to MagRoc Board we specify:
**10G X 2 1/2" Surefast Woodscrew Csk Square Class 3 Galv**

For fixing timber plates (that are not engineered design) we specify: **Bremick Type 17 Bugle Batten 14-10x100 Class 3 Galv or 14g x 75mm Type 17 Quickdrive Countersunk Batten Screw**

**Paint & Plaster System:** Only paint or plaster systems approved by MagRoc and certified by BEAL or BRANZ shall be used for MagRoc™ SIP system.

**Other Cladding:** Only cladding systems approved by MagRoc and certified by BEAL shall be used with MagRoc ™ SIP's that meet the NZBC for E2 and B2 for weather tightness and durbility.

# 9.0 Quality Control Inspections:

## 9.1 Raw Materials:

Quality Control Inspections of each material are conducted on receipt from the manufacturer. MagRoc adheres to strict quality controls from both international testing via Intertek, and local audits from BEAL. Our testing of each raw product is described in Appendix A.

## 9.2 Manufactured Materials:

MagRoc staff have strict international standard testing in place when manufacturing MagRoc SIP's. This testing is conducted at the start, end and during the batch / production run. All MagRoc SIP's are then QC inspected, numbered and recorded before they are dispatched. These tests and records are described in full in Appendix B.

## 9.3 External Quality Control Inspections:

BEAL will run external quality control audits on MagRoc's Tests and Records annually. Please refer to Section 14.0 and 15.0 off this document.

# 10.0 TESTING:

Testing is an essential step in maintaining ongoing and continuous quality. Samples of the MagRoc™ Structural Insulated Panels from each batch are tested by the Production Manager before approval is given for acceptance. Random samples of the products are tested periodically by BEAL to ensure compliance with the standard.

The testing is to ensure the performance requirements under the BEAL Appraisal Certificate are maintained continuously. These tests are carried out both annually and biannually by BEAL laboratories and some products testing is conducted upon every new shipment to the facility. (refer to Section 8.2 with corresponding product listed below)

| ITEM | RISK | CHECKS/TESTS |
|---|---|---|
| Components list | | |
| MagRoc™ SIP's | Medium | as per appendix B |
| EPS | Low | as per appendix A |
| Laminating Glue | Low | as per appendix A |
| Sealants | Medium | as per appendix C |
| Screws | Low | as per appendix C |
| Flashings | Medium | as per appendix C |
| External Claddings | Medium | as per appendix C |
| Timber Plates | Medium | as per appendix C |

# 11.0 Storage, Labelling, and Despatch

## 11.1 Storage of Raw materials

The 3 main components that make up the MagRoc SIP or MagClad are MagRoc Board, EPS, and Laminating Glue.

**MagRoc Board:**

i. Bundles are to be de-banded and all plastic and corner protection removed prior to inspection. For bundles not being inspected straight away the plastic and bands should be left on until use is required.
ii. If the pallet is damaged ensure proper dunnage is substituted to level sheathing stack.
iv. Place bundles on even surface. Bundles that are on an uneven surface will allow sheathing to bend or deform.
v. Mark bundle with paint stripe associated with batch #, dimension of product.
vi. Conduct QC inspection on MagRoc board as per Appendix A.


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**EPS:**

i. Stack EPS on dry level ground within a covered area.
ii. Conduct visual inspections as per QC in Appendix A
iii. Prepare for manufacturing process.

**Laminating Glue:**

i. Handle with extreme care and position in designated Glue Storage Area
ii. Record all QC inspection as per Appendix A
iii. Prepare for manufacturing process.

## 11.2 Storage of Manufactured Materials

- Product is stored in a clean, dry, level area for a curing time of no less than 24hrs at ambient curing temperature
- Quality Control inspections are conducted as per Appendix A
- Once signed off by QC Manager they are packaged and cleared for dispatch to nominated destination, with all paper work signed off and recorded.
- The dispatch freight note is filled out with customer address and products dispatched.
- A copy of the freight dispatch note goes with the product to the customer and the other copies stay in the book for end of the month charge out.

## 11.3 Labelling of Manufactured SIP's

All manufactured SIP's carry an individual number or identification code to provide us with permanent tracking and labelling information. This code provides us with all the relevant information needed to track the SIP back to its origin from any given job.

The code that will appear on the top of the panel will look like this:

# Ch-1-22-04-12-RGE24-1

The set of numbers represents the manufacturing date, location and batch code:

a. Plant location – **Ch**
b. Press #1 or 2 - **1**
c. Day – **22**
d. Month – **04**
e. Year – **12**
f. Batch Code - **RGE24**
g. Panel number – **1**

The Batch Code represent a set of panels in which ALL there dimensions match in board and EPS thickness, width, length, and offset for splines and top / bottom plates. This is shown on the Production Order with an accompanying Batch Order Form (Refer to

Appendix B). From this the operator will be able to know exactly how large the batch of 'regular' sized panels they have to produce for every job. There is numerous 'regular' variations but these will be kept in stock for quick delivery for standard orders, a registry of Batch Codes can be seen in Appendix B.

The code will look like this: **RGE24**
This stands for:

| Batch Number # | Quantity | Overall Legnth | Overall Width | Overall Thickness | Offset Left | Offset Right | Offset Top | Offset Bottom | Taper Inside | Taper Outside |
|---|---|---|---|---|---|---|---|---|---|---|
| RGE24 | 1 | 2400 | 1200 | 165 | 75 | 75 | 45 | 45 | Y | Y |

If the panel is not a 'stock' or 'regular' size it will turn up as a 'Special Order' or SO. From here the operator can instantly recognise this will be a one off or a small and unusual quantity:

| Batch Number # | Quantity | Overall Legnth | Overall Width | Overall Thickness | Offset Left | Offset Right | Offset Top | Offset Bottom | Taper Inside | Taper Outside |
|---|---|---|---|---|---|---|---|---|---|---|
| SOE23.5 | 1 | 2350 | 1200 | 165 | 75 | 45 | 45 | 45 | Y | N |

This is all recorded with each job and filed permanently at the MagRoc facility, along with a copy heading out on site for the installers reference.

## 11.4 Dispatch

Once the panels have been signed off after clearing the Quality Control Inspection and have been labelled and stacked ready for dispatch the following steps are carried out.

1. Client number and location / date or arrival are confirmed with installer / distributor
2. Transport is organised with installer / distributor
3. All paperwork is confirmed and attached to order.
   This includes:
   - Packing slip
   - Manufacturing labels
   - Quality Control documents
   - Panel layout on-site for transport
   - Technical installation manual for installer (if its the first job)
4. Job leaves for the building site / distributors warehouse.


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# 12.0 Complaints / Recall Procedure

MagRoc (NZ) Limited holds the right to investigate all complaints and non-conforming product before any recall action is taken of any description by the distributor / installer, and end consumer. Any actions taken before MagRoc is informed will be liable to the parties described above and not held accountable to MagRoc (NZ) Limited.

## 12.1 Complaints Procedure

Complaints of all natures (verbal, written, or electronic) will be directed and recorded by the Operations Manager. From here MagRoc will assign a permanent reference number to the complaint and appropriate action will be undertaken.

This action may involve as little as placing a resupply order, chasing up a delivery, or worse case taken to a higher management meeting to figure out how the complaint has happened, and how to resolve it from that point on. All complaints will be brought up and reviewed in monthly management meetings.

The most common complaints are around Non-conforming or damaged panel to the job site. Please see below the procedures that should be undertaken if this has happened:

## 12.2 Identifying Non-Conforming or Damaged Panels

**Products found to be non-conforming in the factory:**

i. Policy and Procedure
   a. All products found to be non-conforming to the specifications will be segregated and clearly marked as non-conforming.
   b. The following procedure is in place to investigate the cause of non-conformances, fix the problem and to re-evaluate materials as certified products.

ii. Possible defects

1. Panel out of square
   Remedy – check with square on exposed side in squaring table and ends before pressing.
   Adjust blocks or shim posts if necessary.
2. Panel thickness out of spec more than 1mm.
   Remedy: check raw product thickness again.
   Check panel lamination pressure.
   Measurement should be between board away from corners.
3. EPS not positioned properly.
   Remedy: EPS not positioned properly. Check blocks in squaring table on unglued panel. Adjust as necessary.
4. No noticeable adhesive expansion past edge of EPS.
   Remedy: EPS may not have been sprayed with water mist. Do a pull test on the corner of the panel. If it shears easily at bond discard panel as non-conforming.

**Products found to be non-conforming or damaged on the job site:**

All panels will be signed off and checked before being distributed by the QC Manager via the QC inspection. Once they have left the manufacturing facility and arrive on site they should again be checked over for any damage or faults that may have occurred during transportation.

Some key factors to look out for:

- Size and dimensions of the panels are appropriate for the job.
- No dunnage or panels are damaged before or after being placed from the transport to the job site. With the main focus on scratches, cracks or marks that are placed on the panels from the lifting equipment.

### 12.2 Recall Procedure

MagRoc is to be informed immediately before any recall action is taken. From here the following steps are to be followed.

1. The installer / distributor is to communicate clearly what damage or non-conforming issues there are with the panels to MagRoc.
2. A complaint form is filed with MagRoc and signed off by both parties. Refer to Appendix D.
3. MagRoc will then give the corrective advice or arrange for the appropriate action to be taken to remedy the situation.
4. New or alternative panels may be supplied for the situation.
5. MagRoc will investigate and resolve the issue with all parties concerned, with the intention of reducing the possibility of the issue arising again.

## 13.0 Training of Distributors / Installers / Staff:

### 13.1 MagRoc Staff Training

MagRoc management have been trained and continues to have technical consultation from its Canadian based associates and developers of the MagRoc system Quze Inc, Canada. From this MagRoc NZ has allocated training roles on various fronts with both directors being trained up in all technical aspects of the MagRoc SIP system.

The Directors, have also be trained and supervised, and now allocated the roles of training new staff in the production techniques required to manufacture and install MagRoc SIP's.


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With the Operations Manager in charge of keeping all records of staff trained, distributors contracted, and installers certified by MagRoc (NZ) Limited. For a full list of employees, distributors, and Installers please refer to Appendix F. This knowledge base and on going consultation with Quez Inc will insure MagRoc staff are kept up to date and leading the market in SIP construction.

## 13.2 Distributors:

Distributors are to ensure they comply with the strict conditions of a custom made individual distributors contract with MagRoc (NZ) Limited. All products distributed must be installed by approved MagRoc (NZ) Limited installers / distributors at all times to comply and be eligible for the MagRoc Limited Liability Warranty. This contract will also include there contractual obligations to this BPQP document.

An internal audit by MagRoc (NZ) Limited will be conducted annually with all distributors. This will focus on the strict conditions of the distributors contract with MagRoc (NZ) Limited, and therefore will be subject to an annual renewal clause based on the criteria set in the audit.

Note: For Distributors that cross over as installers, the below also applies.

## 13.3 Installers

Only trained and approved installers by MagRoc (NZ) Limited will be issued a License and sign off to MagRoc's Limited Liability Warranty. They will also be subject to BEAL inspections on site and theoretical audits. This license will be issued once the Training Checklist and Sign off is complete (found in Appendix I)

Installers will have to complete written and practical elements from this checklist to showcase their understanding of the Technical Installation Manual and MagRoc BPQP requirements.

The frame work is set out on the following page show how an installer becomes licensed and what obligations they will need to carry out to continue to install MagRoc SIP's.

Records will be kept of there quality of work via 'Records of Construction', which is based on a series of photos and descriptions of stages throughout the building job process. (found in Appendix E)

These will be recorded by MagRoc and placed in permanent files with sign offs from that installer concerned certifying all work is up to MagRoc Technical Installation Manual & BPQP requirements.

# 13.4 MagRoc Licensing / Training Framework

**Apply to us for training and Licensing**

↓

**Applicant background check**
Must be LBP Registered, or supervised by an LBP at all times.
Any other supporting training (i.e Master builder, Certified Builder, etc)

↓

**Applicant accepted, Training Session is booked in**
Session date and time is negotiated with applicant

↓

**MagRoc sends out the Training manual & Assessment checklist to the applicant**
Option of our Technical Installation Manual provided in paperback form at a small fee, or directed to our online version for free.

↓

**Date confirmed to attend training session**

↓

**Training conducted with practical and theoretical assessments carried out.**
Builder is signed off against MagRoc Training Checklist

↓

**Preliminarily License is issued**
Builder enters into a contract with MagRoc stating all obligations, liabilities, and terms & conditions.

↓

**First job is assessed and signed off by MagRoc**
Builder must carry out ROC obligations, may require onsite inspections from MagRoc

↓

**Full MagRoc License is Issued**
First renewal period is 2 years / or after the following 2 jobs

↓

**Renewal of the MagRoc License is every 5 years**
MagRoc conducts an audit of the builders work (no. of builds per yr / complaints / ROC Compliance)


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## 14.0 BPQP Audit Responsibilities:

- The overall responsibility for ensuring that this BPQP is implemented is the Managing Director.
- The person at head office responsible for carrying out periodic internal audits of this BPQP document and attachments is Steve Knewstubb
- Each 'MagRoc (NZ) Limited, SIP systems Approved Installer' shall be responsible for the on-site application of this BPQP as it applies to their work and shall be responsible for having periodic reviews of their documentation and diary notes that are related to the BPQP. In addition each MagRoc (NZ) Limited, SIP Systems approved installer will complete for each installation the MagRoc (NZ) Limited, SIP Systems – Checklist and provide photos of the various stages of the install through the Record of Construction in Appendix E.

## 15.0 BPQP Audit Requirements:

- This BPQP will be reviewed every 6 months at Head Office by the Operations Manager.
- The BPQP of 'MagRoc (NZ) Limited' will be audited every twelve months by BEAL AUDITING SERVICES LTD.
- The BPQP of each 'MagRoc (NZ) Limited SIP Systems Approved Installer' will be audited per job (see above ref to MagRoc (NZ) Limited, SIP Systems Checklist).
- Use will be made of the checklist at the back of the BEAL Auditing Services Ltd. Standard document.
- Records of each audit completed will be filed in the BPQP file (folder) under the tab entitled MagRoc (NZ) Limited, SIP Systems AUDIT BPQP.
- A copy of each audit record shall be forwarded to the Managing Director as soon as practical.
- Where there is a non-conformance found, a note for the reason shall be written into the checklist.
- Where the non-conformance is seen to be important (such as for a high or medium risk material) then a meeting with the relevant management people shall be held as soon as practical to:
  - a) determine the importance of the non-conformance;
  - b) determine who shall be responsible for correcting the non-conformance;
  - c) determine whether or not there needs to be a correction or addition to the BPQP documents;
  - d) write up a record of when the non-conformance was dealt with and the names of any other parties that may have been involved in achieving the corrective action. These notes should be filed in a manner that enables them to be easily found in the event that there is a repeat of the non-conformance.

# 16.0 Appendices

**APPENDIX A:** **Raw Material - Quality Control Testing / Certificates**
- MagRoc Board QC Arrival Inspection Check List
- Quze Manufacturing QC Summary
- MagRoc EPS QC Arrival Inspection Check List
- Longs Plastics EPS BRANZ Certificate
- Laminating Glue QC Arrival Check List
- AshLands IsoGrip 4020D ISO9001 Certificate

**APPENDIX B:** **Manufactured Material - Quality Control Testing**
- MagRoc Glue Application Rate Test
- MagRoc Shear Bond Test
- MagRoc QC Post Manufacturing Inspection Check List
- MagRoc Production Order Form
- MagRoc Batch Order Form
- MagRoc Batch Code Registry

**APPENDIX C:** **Criteria / Checklists for MagRoc SIP Sourced Components**
- Screws
- Sealants / Foams / Adhesives
- Flashings
- Timber Plates
- Exterior Claddings
- Interior Finishes
- Flashing Tape
- PEF Rod

**APPENDIX D:** **MagRoc Complaint Form**

**APPENDIX E:** **Record of Construction Template**

**APPENDIX F:** **MagRoc certified Trainers, Distributors, & Installers**

**APPENDIX G:** **Manufacturing Start Up / Close Down Procedure**

**APPENDIX H:** **MagRoc Maintenance and Limited Liability Warranty**

**APPENDIX I:** **MagRoc Training Checklist and Sign Off**


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314 Port Hills Road, Hillsborough 8022, Christchurch, New Zealand

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# Appendix A

## Raw Material
## Quality Control Testing / Certificates

MagRoc Board QC Arrival Inspection List

Quze Manufacturing QC Summary

MagRoc EPS QC Arrivial Inspection List

Longs Plastics EPS BRANZ Aprasial Certificate

Laminating Glue QC Arrivial Inspection List

AshLands ISO Grip 4020D ISO9001 Certificate

# MagRoc Board Quality Control Inspection - Arrival

Inspection Conducted By:_____

Container Number:_____ Date of Arrival:_____ MAF Inspector:_____

| Desctiption of Product: | | | |
|---|---|---|---|
| Size | Quanty of Boards | Qauntity of Pallets | Test Board Selected from |
| | | | |

| Visual Inspections: | | | | | |
|---|---|---|---|---|---|
| Dimensions: | Correct / Incorrect | | Out by:_____ | | Acceptable / Declined |
| Depth: | Correct / Incorrect | | Out by:_____ | | Acceptable / Declined |
| Taper: | Correct / Incorrect | | Out by:_____ | | Acceptable / Declined |
| | Bad | | Pass | | Good |
| Finish | 1 | 2 | 3 | 4 | 5 |
| Colour | 1 | 2 | 3 | 4 | 5 |

| Scientific tests |
|---|
| Density:_____ g / m2 |
| Ductility Test:_____ MPA |
| Impact Test:_____ kj / m2 |
| Screw Hold:_____ N/m |

# Quze Inc

## MagRoc Sheathing Quality Control Summary – China Plant

**Confidential**

**Evaluation Center**
**Intertek Testing Services NA Ltd**
**1500 Brigantine Drive**
**Coquitlam, B.C. V3K 7C1**
**Canada**

**Rendered to**
**Quze Inc (Owner/Listee of Product and Listing)**
**333 Schooner Cove NW**
**Calgary, Alberta. T3L 1Z3**
**Canada**

**Contact Person: Dean Winter**
**Email: dean@magroc.com**
**Phone: 403-607-5780**

## Product: MgO Sheathing

**Report # 100442106COQ-017A**

**Manufacturing Plant China: Dezhou Meide Construction Material Co. Ltd**
**East of University Road, Dezhou, Shandong Province, China**

**Contact Person: Mr. Hara Keisuke**
**Email: dz-fg@163.com**
**Phone: 86-534-2752788**

| Property | | Specification/Tolerance |
|---|---|---|
| Appearance | | No damage, ripple, cracking or delaminating |
| Size | Length | 0, -2mm |
| | Width | 0, -2mm |
| | Thickness | (1) <6mm: +-0.20mm<br>(2) 6 – 10mm: +-0.30mm<br>(3) >10mm: +-0.50mm |
| | Difference of Diagonal | <1 mm |
| Bending Strength | | |
| | Thickness: <6mm | >10 MPA |
| | Thickness 6 – 10mm | >15 MPA |
| | Thickness >10 MPA | >20 MPA |
| Resistance to Impact Strength | | >1.5 kj/$m^2$ |
| Apparent Density | | +-10% |
| Water Content | | <8% |
| Dry Shrinkage Rate | | <0.3% |
| Wet Swell Rate | | <0.6% |
| Screw Holding Capacity | | |
| | Thickness <6mm | >15 N/m |
| | Thickness 6 – 10mm | >20 N/m |
| | Thickness >10mm | >25 N/m |
| Content of ($Cl^1$) | | <10% |

# MagRoc EPS Quality Control Inspection - Arrival

Inspection Conducted By:_____

Client Number:_____ Date of Arrival:_____

| Desctiption of Product: | | Visual Inspection: | | |
|---|---|---|---|---|
| Quantity Ordered | Size Ordered: | Quantity Correct: | Measurements on Arrival | Variation from Order on Arrival |
| | | | | |

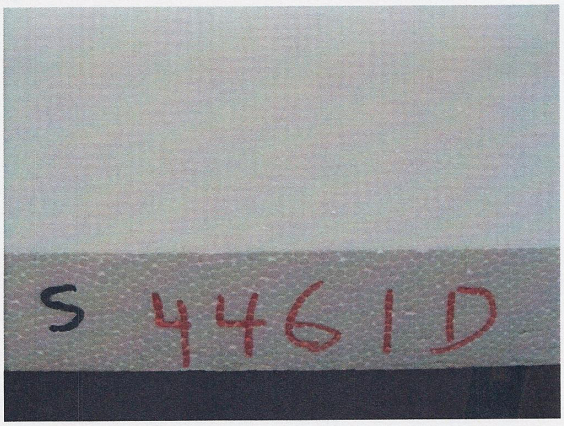
Correct EPS Type: YES / NO

Signed off by:_____

Building New Zealand Better

# TP1759/DU01/02

## Thermal Resistance of a Long Plastic S-Grade Sample




**Author:** Sheng-Huei Huang
Technician
IANZ Approved Signatory

**Reviewer:** Roger Stanford
Senior Technician
IANZ Approved Signatory

All tests reported herein have been undertaken at the BRANZ Ltd laboratories located in Judgeford, Porirua, New Zealand, unless stated otherwise.

**Contact:**
BRANZ Limited
Moonshine Road
Judgeford
Private Bag 50908
Porirua City
New Zealand
Tel: +64 4 237 1170
Fax: +64 4 237 1171
www.branz.co.nz

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation.

# MagRoc Laminating Glue
# Quality Control Inspection - Arrivial

Inspection Conducted By:_____

Laminating Glue Model Name and Code:_____

Batch Number:_____ Date of Arrival:_____

Expiry Date:_____ Quantity matching Packing Slip:_____

Visual Inspection:
Size of barrel / tote: Correct / Incorrect

Seal Broken: Yes / No

Damage to Glue Barrel / Tote: Yes / No If Yes descibe what:_____

_____

_____

_____

_____

_____

Signed off By:_____

Building New Zealand Better

# Certificate of Registration

## QUALITY MANAGEMENT SYSTEM - ISO 9001:2008

*This is to certify that:*

**Ashland Perfomance Materials**
**5200 Blazer Parkway**
**Dublin**
**Ohio**
**43017**
**USA**

*Holds Certificate No:* **FM 549050**

*and operates a Quality Management System which complies with the requirements of ISO 9001:2008 for the following scope:*

The manufacture, blending, and supply of thermoset, solvent based, water based, and radiation cured adhesive, coatings, binders, laminates, and water treatment.

*For and on behalf of BSI:*

*President, BSI America, Inc.*

Originally Registered: **05/04/2009** Latest Issue: **08/26/2010** Expiry Date: **08/16/2012**



This certificate remains the property of BSI and shall be returned immediately upon request.
An electronic certificate can be authenticated online. Printed copies can be validated at www.bsigroup.com/ClientDirectory
To be read in conjunction with the scope above or the attached appendix.
Americas Headquarters: 12110 Sunset Hills Road, Suite 200, Reston, VA 20190, USA.

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# Appendix B

## Manufactured Material - Order Processing & Quality Control Testing

MagRoc Glue Application Rate

MagRoc Shear Bond Test

MagRoc QC Post Manufacturing Inspection List

MagRoc Production Order Form

MagRoc Batch Order Form

MagRoc Batch Code Registry

Version 5, May 2013

**Quze Inc** **Addendum "C"**

**MagRoc New Zealand SIP Production**

# Adhesive Application Rate Monitoring

Name of Operator: _____ Date: _____ Production Line: _____

No# Panels Made During Test: _____ Product Description: _____

Glue Storage Temp in 'C: _____ Curing Air Temp in 'C: _____ Glue Barrel / Batch #:_____

| Adehesive Application | #1 Try | Panel #:_____ | #2 Try | Panel #:_____ | #3 Try | Panel #:_____ | #4 Try | Panel #:_____ |
|---|---|---|---|---|---|---|---|---|
| After | _____ | g | _____ | g | _____ | g | _____ | g |
| Before | _____ | g | _____ | g | _____ | g | _____ | g |
| Adhesive Weight | _____ | g/300mm2 | _____ | g/300mm2 | _____ | g/300mm2 | _____ | g/300mm2 |

Overall Average Adhesieve Weight During Production Run: _____ g/sq ft

Notes:

_____

_____

_____

_____

Initials: _____

**Quze Inc** **Addendum "C"**

**MagRoc New Zealand SIP Production**

# Shear Bond Test

Name of Operator: _____ Date: _____ Production Line: _____

No# Panels Made During Test: _____ Product Description: _____

Curing Air Temp in 'C: _____ Time left for curing:_____

| Day | Mo | Year | Product Code | Observation | Pass/Fail | Operator Initials |
|---|---|---|---|---|---|---|
| | | | | | | |
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Notes:

# MagRoc Post Production Quality Control Inspection

Client / Job reference:_____

Name of Supervisor: _____ Date: _____

Name of Operators:_____ Production Line: _____

Total Number of Panels Produced: _____

| Product Description | | Visual Check | | | | |
|---|---|---|---|---|---|---|
| Code | Qauntity | Conforming | Non-Conforming | Reason Why? | Reproduced | |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |
| | | | | | Y | N |

All Panels coded correctly: Y / N

All Quality Control Paperwork is Filled out and filed correctly: Y / N

Panels ready for dispatch: Y / N

Signed Off By:_____

# MagRoc Production Order

P/O #:_____ Date:____/_____/_____

Client:_____ Ordered by:_____

Client Order Number:_____ Completed by:_____

| Batch Code #'s | Quantity | In Stock | Specifically Produced | Complete |
|---|---|---|---|---|
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| Other Material Required | Quantity | Width | Thickness | Legnth | In Stock | Re-order Amount | Complete |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
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| Accessories | Model / Spec | Quantity | In Stock | Re-Order Amount | Complete |
|---|---|---|---|---|---|
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# MagRoc Batch Order

Ordered by:_____ Date:____/_____/_____

Client:_____ Completed by:_____

Client Order Number:_____

| Batch Code # | Quantity | Overall Legnth | Overall Width | Overall Thickness | Offset Left | Offset Right | Offset Top | Offset Bottom | Taper Inside | Taper Outside |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
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# MagRoc Batch Code Registry

| Batch Number # | Overall Legnth | Overall Width | Overall Thickness | Offset Left | Offset Right | Offset Top | Offset Bottom | Taper Inside | Taper Outside |
|---|---|---|---|---|---|---|---|---|---|
| RGE24 | 2400 | 1200 | 165 | 75 | 75 | 45 | 45 | Y | Y |
| RGEC24 | 2400 | 1200 | 165 | 75 | 45 | 45 | 45 | Y | Y |
| RGE27 | 2745 | 1200 | 165 | 75 | 75 | 45 | 45 | Y | Y |
| RGEC27 | 2745 | 1200 | 165 | 75 | 45 | 45 | 45 | Y | Y |
| RGE30 | 3050 | 1200 | 165 | 75 | 75 | 45 | 45 | Y | Y |
| RGEC30 | 3050 | 1200 | 165 | 75 | 45 | 45 | 45 | Y | Y |
| RGI24 | 2400 | 1200 | 106 | 75 | 75 | 45 | 45 | Y | Y |
| RGIC24 | 2400 | 1200 | 106 | 75 | 45 | 45 | 45 | Y | Y |
| RGI27 | 2745 | 1200 | 106 | 75 | 75 | 45 | 45 | Y | Y |
| RGIC27 | 2745 | 1200 | 106 | 75 | 45 | 45 | 45 | Y | Y |
| RGI30 | 3050 | 1200 | 106 | 75 | 75 | 45 | 45 | Y | Y |
| RGIC30 | 3050 | 1200 | 106 | 75 | 45 | 45 | 45 | Y | Y |
| RGF24 | 2400 | 1200 | 264 | IB45 | IB45 | 45 | 45 | N | N |
| RGFE24 | 2400 | 1200 | 264 | IB45 | 45 | 45 | 45 | N | N |
| RGF27 | 2745 | 1200 | 264 | IB45 | IB45 | 45 | 45 | N | N |
| RGFE27 | 2745 | 1200 | 264 | IB45 | 45 | 45 | 45 | N | N |
| RGF30 | 3050 | 1200 | 264 | IB45 | IB45 | 45 | 45 | N | N |
| RGFE30 | 3050 | 1200 | 264 | IB45 | 45 | 45 | 45 | N | N |
| RGR24 | 2400 | 1200 | 264 | IB45 | IB45 | 45 | 45 | Y | N |
| RGRE24 | 2400 | 1200 | 264 | IB45 | 45 | 45 | 45 | Y | N |
| RGR27 | 2745 | 1200 | 264 | IB45 | IB45 | 45 | 45 | Y | N |
| RGRE27 | 2745 | 1200 | 264 | IB45 | 45 | 45 | 45 | Y | N |
| RGR30 | 3050 | 1200 | 264 | IB45 | IB45 | 45 | 45 | Y | N |
| RGRE30 | 3050 | 1200 | 264 | IB45 | 45 | 45 | 45 | Y | N |

| Key | |
|---|---|
| RG | Regular Panel |
| E | External |
| I | Internal |
| C | Corner |
| F | Floor |
| R | Roof |

# Appendix C

## Criteria / Checklists for MagRoc SIP Sourced Components

- Screws
- Sealants / Foams
- Flashings
- Exterior Claddings
- Timber Plates
- Interior Finishes
- Flashing Tape
- PEF Rod
- Adhesives

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## Specific Checklist:

All products are specifically specified in the MagRoc Technical Installation Manual (External Document you can request from MagRoc). For these products to be chosen and used for the MagRoc SIP System we use the criteria and check lists below to ensure the quality of all our sourced components meets and exceeds our BEAL appraisal, and all relevant AS/NZ Standards..

## Screws:

- [ ] Must hold appropriate testing appraisal with Quality Management systems in place, which includes meeting relevant performance requirements of the NZ building code.
- [ ] Must be Class 3 Glavanised, Stainless Steel, or CP3 Polymer Coated
- [ ] Must have a cutting head suitable for MagRoc Board
- [ ] Must have a thread suitable for high tension screw hold in MagRoc Board (these include but are not limited to high / low thread patterns, fibre cement patterns, and hardwood timber patterns)
- [ ] Must have a thread pattern continuously up to the head of the screw, and the suitable depth to penetrate through the MagRoc Board or timber it is going into.

## Sealants/ Foams:

- [ ] Must hold appropriate testing appraisal with Quality Management systems in place, which includes meeting relevant performance requirements of the NZ building code.
- [ ] Must be Non-Solvent based sealant, with quality adhesion
- [ ] Must offer a warranty that matches the building code requirements
- [ ] Foam must be a Low Expanding PU foam with high adhesion qualities, and re-expansion qualities once applied.
- [ ] Foam and or Sealant must be a closed cell product with high water resistant qualities.

## Flashing Tape:

- ☐ All flashing tape must hold appropriate testing appraisal with Quality Management systems in place, which includes meeting relevant performance requirements of the NZ building code.
- ☐ All flashing tape must offer the appropriate warranty for its specific purpose / use on the exterior of MagRoc SIP system.
- ☐ All flashing tape must be approved by MagRoc and its specific designs as tested and approved by BEAL or BRANZ.

## Exterior Claddings:

- ☐ Must hold appropriate testing appraisal with Quality Management systems in place, which includes meeting relevant performance requirements of the NZ building code.
- ☐ All exterior claddings must be approved by MagRoc.
- ☐ All exterior cladding must provide a warranty and maintenance policy that covers the appropriate specification required under the Building Code concerning durability and suitability for the building envelope.

## Timber Plates:

- ☐ Must hold appropriate testing appraisal, which includes meeting the AS / NZS1748 KD 104 standard. Complying with;
  Amendment 4 NZS 3603:1993 Timber Structures Standard.
  Amendment 2 NZS 3604:1999 Timber Framed Buildings.
  Amendment 1 NZS 3622: 2004 Verification of Timber Properties.
- ☐ All timber must be MSG8- H1.2 or better with clearly indicated treatment and standards stamped on every length.

## Interior Finishes:

- ☐ Must hold appropriate testing appraisal with Quality Management systems in place, which includes meeting relevant performance requirements of the NZ building code.
- ☐ All paint systems applied to the interior of the house must be approved by MagRoc and the applicable paint company, with sufficient testing provided on MagRoc Board.

- [ ] All tile and slate underlay treatment must be approved by MagRoc with sufficient testing completed on MagRoc board.
- [ ] All interior plaster systems must be approved by MagRoc with sufficient testing completed on MagRoc Board

## Flashings:

- [ ] All flashings must be approved and tested by MagRoc and BEAL before being installed.
- [ ] All flashing details must adhere specifically to our MagRoc Technical Installation Manual, and no variation is to be installed without prior notification to MagRoc NZ Limited
- [ ] The supplier of our flashing systems must have a Quality Control Management programme in place. With external audits standards they comply with.

## PEF Rod:

- [ ] All PEF Rod must hold appropriate testing appraisal with Quality Management systems in place, which includes meeting relevant performance requirements of the NZ building code.
- [ ] All PEF Rod must offer the appropriate warranty for its specific purpose / use as a sealent for MagRoc SIP system.

## Adhesives:

- [ ] Must hold appropriate testing appraisal with Quality Management systems in place, which includes meeting relevant performance requirements of the NZ building code.
- [ ] Must be Non-Solvent based adhesive, with quality adhesion to MagRoc Board as proven by third party testing by the adhesive company.
- [ ] Must offer a warranty that matches the building code requirements
- [ ] Must be approved by MagRoc before installation

# Appendix D

## MagRoc Complaint Form

# MagRoc
# Complaint Form

Client / Job Reference:_____

Date:_____/_____/_____

## Your Details:

Name:_____

Company:_____

Address:_____

Email: _____

Contact Number:_____

Office Reference Only:

Date recieved:

_____/_____/_____

Recieved By:

_____

Reference Number:

_____

Followed up on:

_____/_____/_____

Resolved on:

_____/_____/_____

## Job Details:

Description of the Problem:

_____

_____

_____

_____

_____

_____

How can we solve this problem:_____

_____

_____

_____

Signed: _____

# Appendix E

## Record of Construction Template

# Record of Construction (ROC)

All MagRoc installs must have a ROC submitted to MagRoc (NZ) Limited HQ to be permanently filed with the production run of this job. The following steps must be recorded via digital pictures and emailed to enquiry@magroc.co.nz or sent via digital storage device (CD / USB stick) to PO Box 12204, Beckenham 8242, Christchurch.

This sheet is also to be checked off, dated, and signed by the supervising installer and submitted electronically or physically to the above addresses.

Client / Job reference:_____

Date: ____/_____/_____

Supervising Installer:_____

All other installers:_____

## Checklist:

## MagRoc MagFloor:

- [ ] Photos of the Piles and Bearers prep'd for the MagFloor installed
- [ ] Photos of the fixing details between the I-Beam and the bearer
- [ ] Photos of specific load bearing points on the MagFloor, and any specifically designed details between the floor and bearers.
- [ ] Photos of ALL panels in place BEFORE boundary joists are placed

## MagRoc SIP Walls:

- [ ] Photos of the bottom plates in place showing fixing details (screws & glue) along with any bracing elements.
- [ ] Photos of Internal and External bottom plate placement
- [ ] One of standard spline connection with screw and foam pattern displayed at various stages (i.e. pre-connection, post connection)
- [ ] Photos of any specific connection designs

- [ ] Photos of Internal and External Corners with pre-connection and post connection detailing stud foaming pattern and fixing details.
- [ ] Photos of window details done on site
- [ ] Photos of headers / lintels placed on site
- [ ] Photos of any exterior penetrations
- [ ] Photos of top plate fixings
- [ ] Photos of any bracing or strap elements placed between the walls and roof sections.
- [ ] Photos of Point Load details - Posts, plates, & Brackets

## MagRoc WarmRoof:

- [ ] Photos of attachements between top plates and WarmRoof
- [ ] Photos of load bearing points on walls from the WarmRoof
- [ ] Photos of the fixing details (screws & glue) between the I-Beam and load bearing walls
- [ ] Photos of any specifically designed details between the WarmRoof and walls.
- [ ] Photos of ALL panels in place BEFORE Rim boards are installed

I sign this Record of Construction certifying that all installation methods were in accordance to the MagRoc Technical Installation Manual and MagRoc BPQP.

**Signed off by:** _____

_____
(print name)

**Date:** _____/_____/_____

MagRoc
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# Appendix F

## MagRoc (NZ) Limited
## Structural Insulated Panel System

-Trained Manufacturers
-Certified Installers
-Contracted Distributors

Version 5, May 2013

## MagRoc (NZ) Limited SIP System Trained Manufacturers

Qualified Trainers:

Steve Knewstubb - Director
Joel Nichol - Operations Manager

Trained Staff / External Contractors:

Cambell Wetton

## MagRoc (NZ) Limited SIP System Certified Installers

Qualified Trainers:

Steve Knewstubb - Director
Greg Kaschik - Quze Inc Canada
Joel Nichol - Operations Manager

Certified Installers:

There is currently no certified installers of MagRoc SIP System.

## MagRoc (NZ) Limited SIP System Contracted Distributors

There is currently no contracted distributors of MagRoc SIP System.

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# Appendix G

## Manufacturing
## Start Up / Close Down
## Procedure

- Adhesive Start Up / Shut Down
- Press Start Up
- Laminating Panels

Version 5, May 2013

## Adhesive Start Up - MagRoc Spatter Line

1. Open adhesive container vent valve and all supply valves at container and pump.
2. Check pump toggle switch is in down position and plug in air line.
3. Ensure adhesive ball valve on handle is closed and flip pump switch up.
4. Turn on air at gun.
5. Open adhesive ball valve at spray wand and clear nozzle of petroleum jelly.
6. Spray test pattern on plastic and adjust air level at spray wand.
7. Spray panels in a vertical fashion (Up and Down) while rotating the wand in a circle slowly allowing the adhesive to overlap.

**NOTE: Keep spray wand back from face of panel 1 to 2 meters. On extreme heat and humidity days slow air rate down and spatter in larger beads.**

## Adhesive Shut Down

1. Leave air running at nozzle until shut down process is complete.
2. Run adhesive until pump shaft is completely extended out.
3. Thoroughly clean off shaft with clean dry cloth including face of pressure washer.
4. Coat shaft with petroleum Jelly.
5. Place grease gun on grease circ on pressure washer nut and apply very low stroke pressure as shaft slides into pump.
6. Turn off pump air toggle switch - to down position.
7. Open ball valve at spray wand and release adhesive until the pump shaft is fully retracted. Close ball valve on spray wand.
8. Run petroleum jelly through grease circ at end of spray wand until only petroleum jelly is spraying.
9. Close all ball valves on pump and supply lines. Unplug air supply line.
10. Close vent ball valve on drum or tote.

***During Holidays cycle adhesive minimum every 7 days.**

**NOTE: If adhesive begins to plug spray nozzle, shut off spray wand ball valve and insert a proper sized drill bit into the adhesive tip. If problem continues remove aluminum tip and clean thoroughly. Also remove grease circ and clean out threaded hole. Be sure to cover exposed adhesive even temporarily with petroleum jelly.**



MagRoc (NZ) Limted, Po Box 12204, 0800 MAGROC, www.magroc.co.nz
314 Port Hills Road, Hillsborough 8022, Christchurch, New Zealand

## Press Start Up - MagRoc Platen Press

1. Turn on power @ plug above press.
2. Raise platen & cycle up and down 4 to 6 times to circulate hydraulic fluids and stabilize levelling of platen.
3. While platen is raised turn on press conveyor and in-feed conveyor. Cycle 2 times.
4. Adjust platen at maximum raised height to panel height plus 50mm. Adjust by moving power shut off lever at left of control box, up or down. Cycle platen to ensure proper adjustment.
5. Check for proper "insulation setback blocks" on squaring table. Change out as necessary.

**NOTE: Always check above and below platen for materials or tools temporarily placed that may be crushed, before cycling platen.**

## Laminating Panels

1. Place front side sheet of MagRoc onto squaring table and assure it is tight to all three squaring posts.
2. Load insulation coated with adhesive with wire chase side up (back side of insulation). Drop end closest to end post first and move tight to squaring posts. Slide opposite end down tight to sheathing and push tight to squaring post.
3. Load final sheet of MagRoc in the same fashion end post first and push tight to all three squaring posts.
4. Lift press platen (by pressing and holding up button) until high shut-off activates. This is assuming there is already a panel being pressed.
5. Turn on conveyance in press.
6. Turn on conveyance on in-feed table. Shut off (release start button) as soon as panel clears end of table.
7. Press stop button on press conveyance just before panel reaches the center of the press.
8. Press the down button on the platen. Platen will stop automatically when the pressure shut off on the manometer is reached.
9. Press start on timer.

**NOTE: Physically you should see about a 1.5mm to 2mm crush of the panel when the platen touches down. If different adjust the manometer accordingly.**

# Appendix H

## MagRoc (NZ) Limited
## Maintenance and Warranty Policy

www.magroc.co.nz

MagRoc

# Maintenance and Limited Liability Warranty Policy

**Valid for:** _____

(Address of Property)

**Authorised By:** _____

(Certified MagRoc Installer)

**From:** _____

**0800 MAGROC**
MagRoc (NZ) Limted, Po Box 12204,
314 Port Hills Road, Hillsborough 8022, Christchurch, New Zealand

## Maintenance

MagRoc SIP panels are a structural substrate suitable for many cladding systems. They will never be used in an untreated situation or left exposed. Although their durability meets the relevant building code - i.e. clause B2 - Durability,- regular maintenance must be maintained to uphold the warranty.

It is the responsibility of the home owner to maintain the integrity in both weather tightness and structural envelope of the building and exterior cladding of choice during the life of the structure.

## For All Cladding Systems:

Regular maintenance is essential in maintaining the water tightness and longevity of all cladding systems and the SIP substrate.

**Key tasks that must be done:**

- The cladded system must be cleaned at least once a year to remove grime, dirt and growth and to maximize the life and appearance of the cladding.
- Cleaning must be done in accordance with the relevant cladding systems documented maintenance program. Please refer to the cladding systems recommended maintenance and warranty requirements.

While performing this cleaning program, an inspection must be made to ensure that all aspects of the cladding system, including the coating system, plaster, flashings and any control joints remain intact. Most cladding systems also require a minimum ground clearance to be maintained to ensure a waterproof condition.

Any cracks, damaged areas or areas showing signs of deterioration must be repaired immediately. Ground build-up or plant growth next to cladding that would allow moisture ingress, must also be corrected immediately.

**Typical things to look for during annual inspection:**

- Places where water can enter the structure
- Signs that water has already entered are: holes, cracks, loose plaster, loose fixings, joints that have separated, gaps in joinery flashings, failed or cracked sealants.
- Staining and other visible water damage.
- Musty smells.
- Efflorescence
- Mould or moss growth.
- Blistering, cracking, bubbling, peeling or fading of paintwork.

# Limited Liability Product Warranty

Affective as of February 2013, Version 2, Amendment 1

## 1. Warranty

1.1 MagRoc (NZ) Limited ("MagRoc") warrants to the owner (or its successors in ownership) ("Owner") of the Structural Insulated Panel manufactured by MagRoc ("SIP" or "the Product") for a period of fifteen (15) years ("Term") that the Product and the MagRoc board used by MagRoc to manufacture the Product ("the MagRoc Board") will be free from any defects arising solely and directly due to manufacture, subject to the terms and conditions set out in this warranty.

1.2 In the event of a breach of the warranty set out in clause 1.1, MagRoc will repair or replace (at MagRoc's reasonable discretion) the defective Product or part (as applicable) without cost to the Owner, and including the installation and labour costs of a MagRoc certified and trained installer (if any).

## 2. Terms and Conditions

2.1 For this warranty to be effective:

2.1.1 The Product must be installed by MagRoc certified and trained installers in accordance with the MagRoc SIP System Technical and Field Installation Manual dated November 2012 (as updated from time to time) ("the Installation Manual"), the BEAL Appraisal Certificate C1130 dated October 2012 (as updated from time to time) ("the Appraisal Certificate"), the Building Act 2004 ("Act") the New Zealand Building Code ("NZBC"), any applicable New Zealand standards and all relevant statutory and local requirements of the area in which the Product is installed; and

2.1.2 The Product must be maintained in accordance with the MagRoc SIP Maintenance Manual (found in the MacRoc Building Product Quality Programme ("BPQP") Version 4 dated September 2012) (as updated from time to time) ("Maintenance Manual"), the Appraisal Certificate, the Act, the NZBC, any applicable New Zealand standards, and any other MagRoc literature issued in conjunction with the Product.

2.2 MagRoc will not be liable for a claim under this warranty unless the Owner:

2.2.1 provides proof of purchase and the date of purchase of the Product from MagRoc; and

2.2.2 makes a written claim to MagRoc within thirty (30) days of the defect becoming reasonably apparent or, if the defect was reasonably apparent prior to installation then the claim must be made prior to installation.

2.3 MagRoc reserves the right to investigate all claims notified in accordance with clause 2.2.2 which will only be accepted if, after investigating the claim, MagRoc agrees there is a defect that has arisen solely and directly due to manufacture.

2.4 All other products, including coating and jointing systems, applied to or used in conjunction with the Product, must be applied or installed and maintained strictly in accordance with the relevant manufacturer's instructions, the Act, NZBC, any applicable New Zealand standards and all relevant statutory and local requirements of the area in which the Product is installed.

2.5 Where a defective part or Product is repaired or replaced under warranty, the balance of the original warranty Term will remain effective.

2.7 Where the defective part or Product is repaired or installed outside the metropolitan area or further than twenty-five (25) kilometers from a MagRoc certified and trained installer, the cost of travel may be charged to the Owner.

2.8 If meeting a claim under this warranty involves recoating the Product, the replacement Product may be a different colour from the original Product due to the effects of weathering and variations in materials over time or because MagRoc may not longer manufacture products of the same colour. The Owner may not reject the replacement Product for this reason.

## 3. Warranty Exclusions and Limitations

3.1 This warranty does not cover any defect to the Product or the MagRoc Board caused directly or indirectly by:

3.1.1 Incorrect installation or repairs, including installation by a person not certified and trained by MagRoc or failure to comply with Installation Manual, the Act, NZBC, any applicable New Zealand standards and all relevant statutory and local requirements of the area in which the Product is installed;

3.1.2 Failure to maintain the Product in accordance with the Maintenance Manual any applicable New Zealand standards and any other MagRoc literature issued in conjunction with the Product;

3.1.3 Poor workmanship of the MagRoc certified installer or the builder of the structure to which the Product is attached or forms part ("the Structure"), poor design or detailing of the Structure, settlement or structural movement of the Product or the Structure;

3.1.4 Acts of God, earthquake, war, storm, fire, flood, vandalism, misuse, abuse, negligence, accidental damage, maltreatment, severe weather conditions or unusual climatic conditions;

3.1.5 Efflorescence or performance of paint or coatings applied to the Product;

3.1.6 Normal wear and tear, growth of mould, mildew, fungi, bacteria or any organism on the Product (whether on the exposed or unexposed surfaces).

3.2 MagRoc is not liable for any damage to the Structure or any other property or any other loss or damage of any kind (including, for the avoidance of doubt, consequential loss and loss of profits) resulting directly or indirectly from a breach of warranty or services provided (either by

MagRoc or a MagRoc certified installer) under this warranty.

3.3 If clause 3.2 or any part of it or this warranty is found by a court to be invalid and unenforceable, MagRoc's liability for loss or damage resulting directly or indirectly from a breach of warranty or the provision of services under this warranty is limited at all times to the purchase price of the Product.

## 4. Consumer Guarantees Act 1993

4.1 If the Product has been acquired for personal, domestic or household use, this warranty does not limit any consumer rights or guarantees that may apply under the Consumer Guarantees Act 1993. If the Product has been acquired for the purposes of a business, the provisions of the Consumer Guarantees Act 1993 do not apply.

**DISCLAIMER:** The recommendations in MagRoc literature are based on good building practice, but are not an exhaustive statement of all relevant information and are subject to terms and conditions above. MagRoc has tested the performance of MagRoc SIP's when installed in accordance with the MagRoc SIP's technical specification, in accordance with the standards and verification methods required by the NZBC and those test results demonstrate the product complies with the performance criteria established by the NZBC. However, as the successful performance of the relevant system depends on numerous factors outside the control of MagRoc (e.g. quality of workmanship and design) MagRoc shall not be liable for the recommendations made in its literature and the performance of the relevant system, including its suitability for any purpose or ability to satisfy the relevant provisions of the NZBC, regulations and standards as it is the responsibility of the building designer to ensure that the details and recommendations provided in the relevant MagRoc installation manual are suitable for the intended project and that specific design is conducted where appropriate.

# Appendix I

MagRoc
Training Checklist and Sign Off

MagRoc
Building New Zealand Better

# Training Checklist & Sign Off

| | | |
|---|---|---|
| Applicants Name: | | |
| Company: | | |
| Date: | | |
| Applicants License Number: | | |
| Facitliy / Location of Training: | | |
| Training Instructor: | | |
| Acceptable Sign Off: | Yes | No |
| If No - Retraining Date: | | |

Signature of Applicant: _____

Signature of Training Instructor: _____

# MagRoc Training Checklist

The following areas have been identified as the critical stages within the MagRoc SIP construction process and therefore require sign off from your training instructor to show you have a confident understanding of how and why these processes are done within this system.

| Tools and Accessories | |
|---|---|
| | Knowledge of tools and proper method of use |
| | Source of tools |
| | Mechanical fasteners, source, methods and layout |
| | Adhesives, source, methods and layout |
| | Urethane fillers, use |

| Site Preparation | |
|---|---|
| | Staging area |
| | Removal of packing materials and inspection |
| | Layup of panels for prep including logistics from prep to wall location |
| | Access for applying exterior fasteners |

| Layout | | |
|---|---|---|
| | Plates, chalk line both sides of plate | |
| | Mark out all | |
| | | Setbacks at corners and approximate panel locations with rough allowances |
| | | Electrical services |
| | | Plumbing services |
| | | Point loads |
| | | Window and door openings |
| | | Bracing |
| | | Any specific engineering requirements |

| Bottom Plates | |
|---|---|
| | Pre-check of supplied materials for dimension |
| | Installing DPC as required on concrete slabs |
| | Marking of mechanical fastener locations |
| | Knowledge of proper installation techniques of specified fasteners |
| | Special mark out of doorways to ensure plates are not permanently fastened |

| Top Plate | |
|---|---|
| | Mark out point loads at MagRoc skin |
| | Double check all services have been marked out |
| | Familiar with installing hurricane ties and strapping as specified by the engineer |
| | Maintain 600mm joint spacing from panel edges where single top plates are being installed |
| | Correct process to ensure proper clearance for plates into EPS |
| | Proper urethane application and supporting background Science (Also applies to vertical joints) |
| | Using a jig to mark electrical holes |
| | Reasoning and importance of pre-drilling plates |

| Standing Walls | | |
|---|---|---|
| | Understand how to identify the correct panel for specific wall locations including; | |
| | | Factory coding |
| | | Pre-manufactured point load panels |
| | | Pre-manufactured Opening Rebate |
| | | Exterior fin placement |
| | | Spline rebate |
| | | Square vs. tapered skins |
| | Understand how to install a panel square and plumb and bearing versus square | |
| | Understand process of re-squaring top of wall and filling tapered box spline cavities | |
| | Proper installation of; | |
| | | Box Spline |
| | | Timber Spline |
| | | Lintel/Header |
| | | Spandrel/Footer |
| | | Partial panels before a corner |
| | | Stacking panels vertically |
| | Liaison process with other trades. Specifically services | |

| Openings and Penetrations | | |
|---|---|---|
| | Correct process to mark out an opening or penetration on interior and exterior of a panel | |
| | Correct process to mark and cut fall of sill in the case of a rebated window | |
| | Understand how to correctly rebate EPS around openings | |
| | Familiar with inserting; | |
| | | Timber Packers |
| | | MagRoc Jamb/Header inserts |
| | | MagRoc Sill for rebated windows |
| | | Waterproofing membrane |
| | | Face-fixed Sills/Flashings |
| | Correctly create a pipe/service penetration at the required 15 degree angle and flash appropriately | |
| | Understand process of a MagRoc meter-box installation | |

| MagRoof/MagFloor | | |
|---|---|---|
| | Understand connection details of MagFloor I-Joists, splines, beams and panels correctly to piles/bearers | |
| | Mechanical fasteners and adhesive, source, methods and layout | |
| | Understand other various connection details to supporting structures such as; | |
| | | Roof straps |
| | | Boundary joists |
| | | LVL plates |
| | | Bracing brackets |
| | Understand how to mark, drill/cut for all services required | |
| | Correct installation of MagRoc flashing and sealants | |
| | Correct installation procedure of WarmRoof to adjacent truss roof | |
| | Understand correct specification and detail of roof strapping and waterproofing over WarmRoof | |