

**Metal Profiled / Flat Sheet Cladding / Covering**

**DRAFT SPECIFICATION**

**Ref: Specification No. xxxxxx/xx (Project Name & Location)**

To be read with Preliminaries/General conditions

**\*Delete as necessary**

**120 METAL ROOF SYSTEM:**

MRC 'Secret Fix' Profile Over-Roofing System incorporating Guardian Warranty.

**Warranty:** Guardian System Warranty INCLUDING design, materials, workmanship and maintenance for up to 20 years.

(All equivalent warranty systems to provide an all encompassing warranty INCLUDING matching the material product guarantee with a workmanship warranty for the same term.)

**Datasheet Reference:** [MRC 'Secret Fix' Over-Roofing System Ref No. MRC/FR/SF/ORM/001](#)

**System Supplier:** MRC Group, Unit 6, Almar Centre, Crompton Street  
Pinetown, KZN, South Africa, KZN.  
Web: [www.mrc-group.co.za](http://www.mrc-group.co.za)  
Email: [info@mrc-group.co.za](mailto:info@mrc-group.co.za)

**Profile Reference:** MRC 'Secret Fix' Roofing System

**Profile Dimensions:** 41/233/700

**Material:** Aluminium zinc coated steel.

**Aluminium coated Coating:** AZ150 – Inland / non-corrosive conditions

***Guarantee of the coating of the aluminium zinc coated steel to be requested depending on the location of the project.***

**Thickness/Gauge:** 0.55mm (A certificate verifying material compliance including coating and gauge, shall be issued by the manufacturer.)

**External finish/colour:** ZincAL Mill Finish

**Internal finish:** MRC Breather Membrane if the thermal insulation is NOT installed.

**Accessories:**

- Ashgrid Bar and Bracket Support System to suit R-Value and thermal insulation.
- MRC 'Secret Fix' Metal Profile Serrated Closures.
- MRC 'Secret Fix' Profile Polyethylene Closures Ridges, Penetrations & Headwalls.

**Spacer System:** MRC 'Secret Fix' Clip, Ashgrid Bar & Bracket Support System.

**Fasteners:** MRC 'Secret Fix' Clip fixed to Ashgrid Bar using 3 number Class 4 Ashfix steel self-driller with wafer head per clip, all as per Structural Engineer's design. Fastener to be supplied with accredited third party test results confirming compliance with Australian Standard AS 3566.2-2002 & South African Standard SANS 1273-2011.

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Ashgrid bracket fixed through the existing roof sheet into the support structure using 2 No. Ashfix LS25 self driller with integrated 16mm integrated washer flange.

|                                     |                                                                                                                                                                                                                                                                            |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Optional Thermal Insulation:</b> | R-Value (4.00 / 5.00 / 5.56 / 6.35) m <sup>2</sup> .K/W as clause 271.                                                                                                                                                                                                     |
| <b>Ashgrid Bar &amp; Bracket:</b>   | As clause in conjunction with clause 265.                                                                                                                                                                                                                                  |
| <b>Existing roof system:</b>        | As clause 241                                                                                                                                                                                                                                                              |
| <b>Pitch:</b>                       | ≥ 2 degree minimum if perimeter details and penetrations are correctly formed.                                                                                                                                                                                             |
| <b>Supports:</b>                    | Light gauge galvanised steel purlins under the existing roof system.                                                                                                                                                                                                       |
| <b>Intermediate supports:</b>       | Subject to MRC 'Secret Fix' load/span charts.                                                                                                                                                                                                                              |
| <b>Eaves / ridge overhang:</b>      | 125-300mm from centre of 'Secret Fix' clip.                                                                                                                                                                                                                                |
| <b>Side laps:</b>                   | Interlocking side ribs with associated clips.                                                                                                                                                                                                                              |
| <b>Experienced Contractors:</b>     | All contractors to be experienced in installing MRC 'Secret Fix' Roof Systems, Ashgrid Support Systems backed with 'Guardian' System Warranty. All contractors must be member of the Green Building Council SA, Master Builders Association & a level 4 BBBEE contributor. |

**Other Requirements:**

- MRC 'Secret Fix' Clips to be set out using the manufacturers setting out template.
- All penetrations to be installed correctly including polyclosures, mastics, sealants and tapes to ensure weather-tightness.
- All perimeter details and penetrations to be backed with the 'Guardian' System Warranty.
- MRC 'turn up' and 'turn down' tool to be used at the ridge / eaves.
- MRC 'Secret Fix' Roof sheeting to be supplied in single lengths i.e. ridge to eaves with no end laps.
- MRC Fabrications to be used for all flashings, weathered upstands, barge, sidewall, headwall flashings, soakers or specialised fabrications as all specified in all flashing clauses or as indicated on the drawings.
- Mobile On-site manufacturing of the MRC roof profile available.

**160 'GUARDIAN' SYSTEM WARRANTY**

|                           |                                                                                                                                                                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Warranty Supplier:</b> | MRC Group, Unit 6, Almar Centre, Crompton Street<br>Pinetown, KZN, South Africa, KZN.<br>Web: <a href="http://www.mrc-group.co.za">www.mrc-group.co.za</a><br>Email: <a href="mailto:info@mrc-group.co.za">info@mrc-group.co.za</a> |
| <b>Reference:</b>         | 'Guardian' System Warranty up to 20 years including design, materials, workmanship & maintenance.                                                                                                                                   |
| <b>Notes:</b>             | The 'Guardian' System Warranty is a warranty covering design, specified materials and perimeter details, workmanship and maintenance of a roofing and /or cladding installation.                                                    |

The roofing contractor is to read all tender drawings in conjunction with the specification and should ensure that he is complying with the design intent, specification & drawings of the building designer.

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**GENERAL REQUIREMENTS**

**170 Design:**

Complete the design of the cladding system in accordance with manufacturers recommendations & guidelines and co-ordinate detailed design with that of all related works. Submit detailed design proposals to the client's architect before commencing any cladding fabrication work.

**172 Thermal Performance / Bridging:**

Requirement: Complete thermal design of the cladding/covering system to minimise thermal bridging.

**175 Product Samples:**

Before commencing detailed design provide the clients' architects with identified samples of the Roofing System to obtain approval before proceeding.

**176 Fastener Samples:**

When submitting detailed design, provide the clients' architects with identified samples of each type of fastener.

**DESIGN / PERFORMANCE REQUIREMENTS**

**180 Generally:**

Requirements specified in this section unless indicated otherwise, apply to the whole roofing system including incorporated metal cladding, flashings and abutments with associated sealants, tapes & fasteners. Full allowance must be made for deflections and other forms of movement.

**185 Verification of Performance:**

Submit evidence and calculations demonstrating compliance of the design with performance requirements (thermal, acoustic, structural) before commencing fabrication of any part of the roofing. Reports, certificates and calculations must be based on approved laboratory testing or computer modelling.

**187 Deflection of Metal Cladding:**

Maximum permitted roof cladding deflection under distributed loads as a multiple of span and due to:

Cladding serviceability L/750 based on residual deflection  
SANS10237 for both dead and wind loads.

**192 Sound Transmittance of Metal Profiled / Covering System:**

Should thermal insulation be installed in conjunction with the 'Secret Fix' roof sheeting a minimum weighted sound reduction index ( $R_w$ ) within 100 to 3150 Hz frequency range: 40 dB/other. Location: Through roof.

**194 Internal Sound Absorption of Metal Profiled / Covering System:**

Minimum sound absorption coefficients ( $a_s$ ) : N/A  
One third octave band centre frequency (Hz) : N/A

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**195 Integrity of Metal Profiled / Covering System:**

Determine profile(s), size(s) and thickness(es) of sheets, the size(s), number and spacing of fixings, configuration and location of support spacer systems and incorporation of other accessories and fittings to ensure the roofing system will resist all dead, imposed and design live loads, and accommodate all deflections and thermal movements without damage.

**198 Water Penetration:**

Underside exposure conditions, moisture must not penetrate onto internal surfaces or into cavities not designed to be wetted. Therefore length and gauge of flashings, use of tapes and sealants are to be considered, to ensure long term weather-tightness.

**FIXING CLADDING**

**202 Avoidance of Surface Condensation:**

Requirement: Determine surface condensation risk of cladding/ covering system. Ensure that damage and nuisance from surface condensation does not occur.

If the thermal insulation is not installed then a breather membrane should be installed between the Ashgrid support system and the 'Secret Fix' clip, in conjunction with soffit, headwall & ridge ventilation solutions, creating a cold roof system.

**210 Structure:**

Check that structure is in a suitable state to receive cladding before commencing fixing. Roofing Contractor must confirm acceptance to Clients Architects and Structural Engineer.

**210 Structural tolerances:**

Purlin Bearing width: To Structural Engineers' Details, min 65mm.  
Purlin Spacing: To Structural Engineers' Details

**220 Structure:**

Do not fix cladding until final coats of paint have been applied to outer surfaces of supporting structure.

**217 Protection:**

Store metal sheets and panels under cover to keep dry and prevent staining. Pack to be stored at an angle to allow trapped water to drain. Limit height of stacks to avoid distortion. Adequately secure stored sheets/panels to prevent wind and mechanical damage.

**219 Fastenings Generally:**

Flashings, liner, spacer and clip fixings, type(s), size(s), material(s) and finish(es) as specified, or in the absence of such specification, as recommended for the purpose by the roof system manufacturer.

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Web: [www.mrc-group.co.za](http://www.mrc-group.co.za)  
Email: [info@mrc-group.co.za](mailto:info@mrc-group.co.za)

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**221 Fittings and Accessories Generally:**

Cappings, closure pieces, flashings, fabrications, trims, sills, gutters, fillers, spacers, tapes, sealants, fixings etc, where not specified to be types recommended by roof system manufacturer and/or indicated on the project drawings.

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**230 Isolating Tapes:**

A type recommended for the purpose by roof system manufacturer. Apply to those surfaces of supports, which would otherwise be in contact with cladding or accessories after fixing.

**234 Rainwater Goods if required:**

Gutters and downpipes, with associated finishes, joints, fixings and brackets to suit project requirements.

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Web: [www.mrc-group.co.za](http://www.mrc-group.co.za)  
Email: [info@mrc-group.co.za](mailto:info@mrc-group.co.za)

**234 Valley Gutters:**

**System Supplier:** MRC Group, Unit 6, Almar Centre, Crompton Street  
Pinetown, KZN, South Africa, KZN.  
Web: [www.mrc-group.co.za](http://www.mrc-group.co.za)  
Email: [info@mrc-group.co.za](mailto:info@mrc-group.co.za)

Material: To suit span and site conditions.  
Gauge/Thickness: To suit the girth and size of the gutter.  
Size: In accordance with Latest Building Regulations.  
Insulation: N/A  
Gutter joints: C/w cross linked butyl mastic sealant and associated fixings.  
All details to ensure water-tightness.  
Rainwater pipes: To suit drainage requirements.

**235 Lightweight Eaves Gutters:**

**System Supplier:** MRC Group, Unit 6, Almar Centre, Crompton Street  
Pinetown, KZN, South Africa, KZN.  
Web: [www.mrc-group.co.za](http://www.mrc-group.co.za)  
Email: [info@mrc-group.co.za](mailto:info@mrc-group.co.za)

Material: To suit span and site conditions.  
Gauge/Thickness: To suit the girth and size of the gutter.  
Size: In accordance with Latest Building Regulations.  
Insulation: N/A  
Gutter joints: C/w cross linked butyl mastic sealant and associated fixings.  
All details to ensure water-tightness.  
Rainwater pipes: To suit drainage requirements.

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**241 Existing Roof System:**

**System Supplier:** N/A.

Reference: Unknown roof system.

Profile: Unknown at this stage.

Material: Unknown material.

Thickness: N/A.

Finish/Colour: N/A.

Please note that it is the client's structural engineer to check whether the existing structure will be able to withstand the new imposed loads from the roof and over-roofing system.

The over-roofing system is fixed through the existing roof system into the structure below.

**265 Ashgrid Spacer Support System:**

**System Supplier:** Ash & Lacy South Africa (Pty) Ltd, 29 Atlantic Drive, Bluewater Estate, Kommetjie, Cape Town, South Africa 7975  
Web: [www.ashandlacy.co.za](http://www.ashandlacy.co.za)  
Email: [dion.marsh@ashandlacy.com](mailto:dion.marsh@ashandlacy.com)

Bar Thickness / Material: 1.25mm thick galvanised steel.

Minimum Tensile: 460 N/mm<sup>2</sup>

Bar Profile: 40 x 40mm.

Bar Centres: As per the existing purlin centres please check with the Ashgrid load span tables.

Bracket Thickness /Material: 1.6mm thick galvanised steel with thermal pads.

Bracket Heights: 60mm to 280mm.

Bracket Centres: (600 / 800 / 1000mm centres)As per Ashgrid load span tables.

Fastenings: 2 No. Ashfix LS25 self driller with 16mm washer per bracket.

Working Loads Uplift: 1.88 kN/m<sup>2</sup>

Working Loads Download: 1.88 kN/m<sup>2</sup>

**271 Optional Insulation:**

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Web: [www.mrc-group.co.za](http://www.mrc-group.co.za)  
Email: [info@mrc-group.co.za](mailto:info@mrc-group.co.za)

Type: Flexible Glasswool Tested to SANS 10177 Part 5, Non-combustible with an inert binder.

Thickness: (115 / 135 / 180 / 220 / 280 mm) to suit (2.5 / 3.00 / 4.00 / 5.00 / 6.25) R-Value.

Thermal conductivity:  $\lambda=0.040\text{W/m.K}$

Installation: Install and secure as the work proceeds, ensuring continuity between and under purlin spacers and supports and over ridges / hips, pack tightly leaving no gaps. Keep dry.

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**280 Breather Membrane:**

**System Supplier:**

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Web: [www.mrc-group.co.za](http://www.mrc-group.co.za)

Email: [info@mrc-group.co.za](mailto:info@mrc-group.co.za)

**Material:**

1.6, single layer spun bonded polypropylene with associated tapes.

**Installation:**

Install and secure between the Ashgrid Bar & MRC 'Secret Fix' Clip.

**300 Profile Fillers:**

**Type(s):**

Supplied by the roof system manufacturer accurately matching the roof sheet system profiles.

**Material:**

Closed Cell Expanded Polyethylene Polyclosures.

**Location:**

Locate where shown on drawings and wherever necessary to close off corrugation cavities from the outside of the building. Ensure a tight fit, sealed with 8mm diameter sealer tape and leave no gaps. Provide purpose made raking cut filler blocks to each side of hips/valleys.

**310 Purpose made Cold Formed Metal Accessories:**

**System Supplier:**

MRC Group, Unit 6, Almar Centre, Crompton Street  
Pinetown, KZN, South Africa, KZN.

Web: [www.mrc-group.co.za](http://www.mrc-group.co.za)

Email: [info@mrc-group.co.za](mailto:info@mrc-group.co.za)

All these details are backed with the 'Guardian' System Warranty including design, materials, workmanship and maintenance.

All details to include tapes, sealants and fixings to ensure weather tightness, as per the MRC technical bulletins on the MRC Website – [Technical Bulletins](#) & [Technical Drawings](#).

**Detail: Headwall**

**MRC Technical Bulletin Ref:**

Generally as MRC/FR/SF/PDHW/BU/001.

**Drawing reference(s):**

Generally as MRC/FR/SF/PDHW/BU/DWG001.

**Material:**

To match the specified roof system.

**Thickness/gauge:**

Minimum 0.8mm

**Finish/Colour:**

To match the specified roof system.

**Sealants:**

8mm diameter self-adhesive butyl tape or impregnated polyurethane foam sealing strip.

**Polyclosure:**

Closed Cell Polyethylene

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**Detail: Sidewall**

MRC Technical Bulletin Ref: Generally as MRC/FR/SF/PDSW/BU/001.  
Drawing reference(s): Generally as MRC/FR/SF/PDSW/BU/DWG002.  
Material: To match the specified roof system.  
Thickness/gauge: Minimum 0.55mm  
Finish/Colour: To match the specified roof system.  
Sealants: 8mm diameter self-adhesive butyl tape or impregnated polyurethane foam sealing strip.  
Polyclosure: Closed Cell Polyethylene

**Detail: Ridge**

MRC Technical Bulletin Ref: Generally as MRC/FR/SF/PDR/BU/001.  
Drawing reference(s): Generally as MRC/FR/SF/PDR/BU/DWG003.  
Material: To match the specified roof system.  
Thickness/gauge: Minimum 0.8mm  
Finish/Colour: To match the specified roof system.  
Sealants: 8mm diameter self-adhesive butyl tape or impregnated polyurethane foam sealing strip.  
Polyclosure: Closed Cell Polyethylene

**Detail: Eaves**

MRC Technical Bulletin Ref: Generally as MRC/FR/SF/PDE/BU/001.  
Drawing reference(s): Generally as MRC/FR/SF/PDE/BU/DWG006.  
Material: To match the specified roof system.  
Thickness/gauge: Minimum 0.55mm  
Finish/Colour: To match the specified roof system.

**Detail: Barge**

MRC Technical Bulletin Ref: Generally as MRC/FR/SF/PDB/BU/001.  
Drawing reference(s): Generally as MRC/FR/SF/PDB/BU/DWG004.  
Material: To match the specified roof system.  
Thickness/gauge: Minimum 0.55mm  
Finish/Colour: To match the specified roof system.  
Sealants: 8mm diameter self-adhesive butyl tape or impregnated polyurethane foam sealing strip.  
Polyclosure: Closed Cell Polyethylene

**Detail: Penetration**

MRC Technical Bulletin Ref: Generally as MRC/FR/SF/PDHW/BU/001.  
Drawing reference(s): Generally as MRC/FR/SF/PDHW/BU/DWG001.  
Material: To match the specified roof system.  
Thickness/gauge: Minimum 0.8mm  
Finish/Colour: To match the specified roof system.  
Sealants: 8mm diameter self-adhesive butyl tape or impregnated polyurethane foam sealing strip.  
Polyclosure: Closed Cell Polyethylene



## **Metal Profiled / Flat Sheet Cladding / Covering**

### **410 Cutting and Drilling Sheets Generally:**

On no account should abrasive wheel cutting methods be adopted. Cut sheets to give clean, true lines with no distortion. Remove burrs and any lubricant and apply a coating to the cut ends.

Remove all drilling swarf, dust and any other foreign matter before finally fixing sheets into position. Protect sheets adequately during fixing and up to practical completion against mechanical damage, corrosion and disfigurement. Rectify any defects as quickly as practicable to minimise damage and nuisance.

### **460 Thermal Movement:**

Accommodated within the design of the system. A fixed point is required.

### **Note:**

**Draft Specification for MRC 'Secret Fix' Roof Systems.**

**The purpose of this Draft Specification is to assist the Project Designer and Quantity Surveyor in producing their respective documentation for any project under consideration.**

**It is provided in good faith for use at the discretion of the respective consultant, to be amended and edited as required to suit the particular project requirements.**

**MRC Systems (PTY) Ltd is not privy to detailed contractual arrangements and documentation of an individual project and are therefore not in a position to co-ordinate related work by others. It is not the intention for this draft to relate to any particularly project but to provide a guide to the more common items to be encountered in MRC 'Secret Fix' systems.**

**Whilst it is the Project Designer/Quantity Surveyors/Planning Supervisor's responsibility to produce their respective documents and we can assist them in their duties, we cannot accept responsibility for any errors or omissions which may occur in tender or contract documents or for compliance with the requirements of Health and Safety/Construction Design and Management Regulations which may be applicable.**

**Please check to ensure that any amendments to the standard draft, represents a true interpretation of the Project Designer's requirements.**

### **DISCLAIMER**

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