# EKS GIRT SYSTEM
## INSTALLATION GUIDE

Composite Z-Girt / Sub-Girt Installation for Panelized Exterior Cladding

| | |
|---|---|
| **Document No.** | EKS-IG-001 |
| **Revision** | 1.3 |
| **Issue Date** | 12 August 2024 |
| **Status** | Field Reference |
| **Application** | Exterior panelized cladding sub-framing |

**GOVERNING REQUIREMENT**

Project-issued shop drawings, structural engineering, approved product data, manufacturer instructions and applicable code requirements take precedence over this guide.

*Prepared for consistent field installation, inspection and project coordination.*

# 1. PURPOSE, SCOPE AND DOCUMENT CONTROL

This guide provides typical installation guidance for the EKS girt system used as the sub-framing platform for EKS MCP exterior panelized cladding, Mac Metal siding. It is intended to support repeatable field execution while protecting the wall assembly, maintaining the cladding plane and preserving the weather-resistive barrier (WRB).

**IMPORTANT — PROJECT-SPECIFIC REQUIREMENTS CONTROL**

Do not use generic spacing or fastening values from this guide where project-issued drawings or engineering provide different requirements.

## Revision summary

| | |
|---|---|
| **Rev 1.3** | Required girt cutting method: fine-tooth blade, cool-cut operation and reverse rotation; most standard hand-held saws can meet these criteria when fitted and configured appropriately. |
| **Rev 1.2** | Professional black-and-white field-guide format; clarified girt spacing versus fastener spacing; strengthened WRB, quality-control and hold-point requirements; |
| **Rev 1.1** | Original EKS installation guide dated 05 February 2023. |

## EKS system benefits — reference claims

The following points reflect prior EKS project and product materials. They are useful for project coordination and sustainability discussions, but they are not installation acceptance criteria and should be supported by current EKS test data before use in specifications, submissions or published claims.

| Benefit | Project relevance |
|---|---|
| **Thermal continuity** | Composite sub-framing is intended to reduce conductive thermal bridging compared with conventional all-metal sub-framing. Prior EKS materials cite thermal efficiency up to approximately 93% in specific assemblies. |
| **Lower handling weight** | Prior EKS materials cite the girt system as approximately 70% lighter than conventional alternatives, supporting easier handling and reduced installer fatigue. |
| **Installation efficiency** | Prior EKS materials cite installation rates up to approximately 60% faster where the EKS configuration reduces component count and field handling. |
| **Material efficiency** | EKS product materials describe the girt components as recyclable and suited to continuous-insulation / rainscreen construction. |

# 2. SYSTEM OVERVIEW

The EKS girt system typically consists of Z-girts and, where required, secondary hat channels installed over the exterior sheathing and WRB. The system creates a rainscreen cavity and a continuous fastening plane for exterior cladding panels. Girt orientation and spacing must follow the project shop drawings and panel layout.

## Typical wall assembly

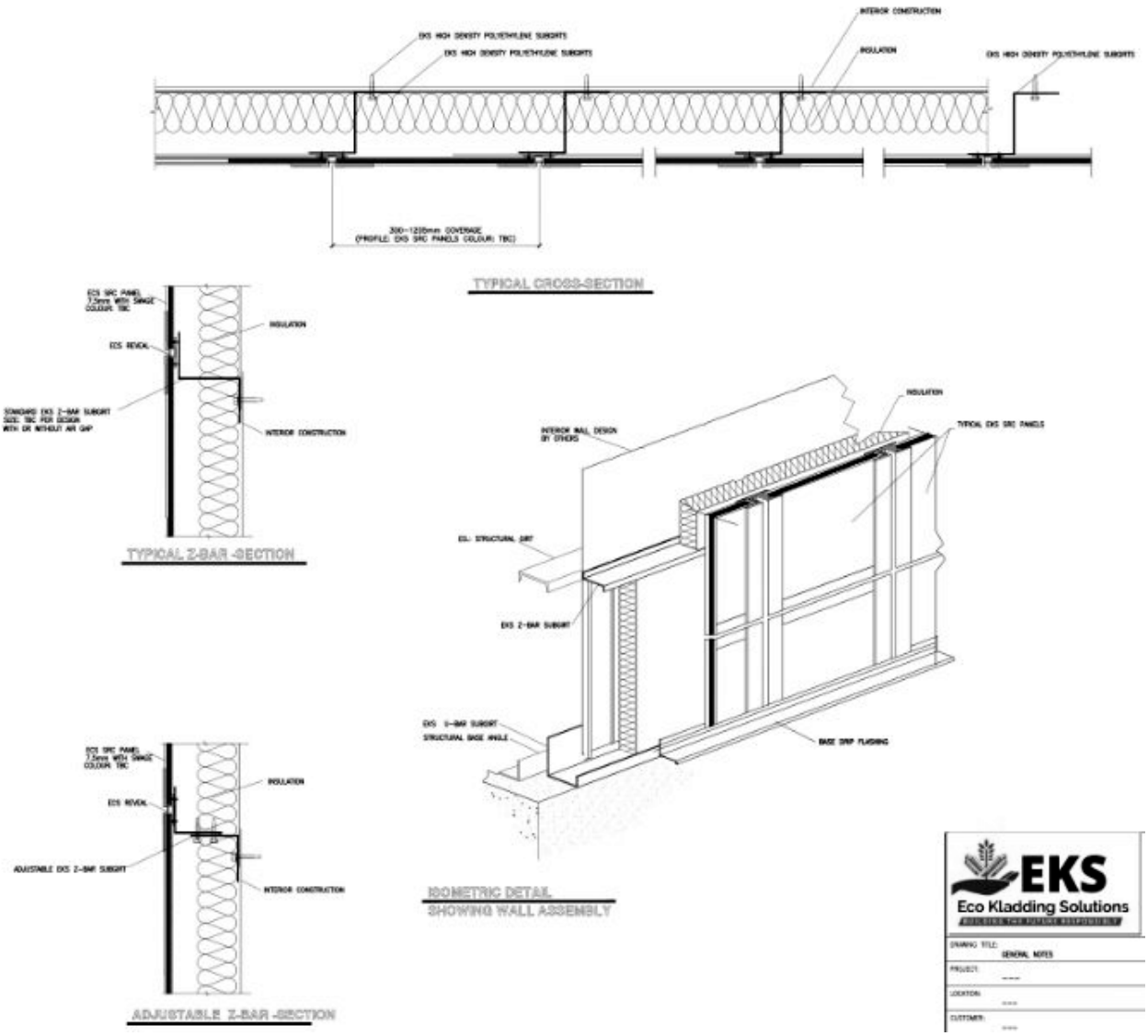



*Figure 1 — Typical EKS wall assembly / Z-bar sub-framing concept. Reference only; project-issued details govern.*

## Core installation principles

- Establish the required panel plane before cladding installation begins.
- Align girts with panel joints, perimeters, corners and opening conditions shown on the approved layout.
- Maintain WRB continuity. Every unintended penetration, cut or tear must be repaired using the WRB manufacturer’s approved method.
- Keep intended drainage and ventilation paths open. Do not seal or block designed cavity drainage.
- Coordinate insulation thickness, girts, flashing, trims, windows, doors and other penetrations before fastening work proceeds.

# 3. GIRT PROFILE AND LAYOUT REFERENCE

The profile below is a reference representation of the 3 in EKS Z-girt. Confirm the actual profile, material, orientation, length and attachment requirements from the current project submittal and shop drawings.

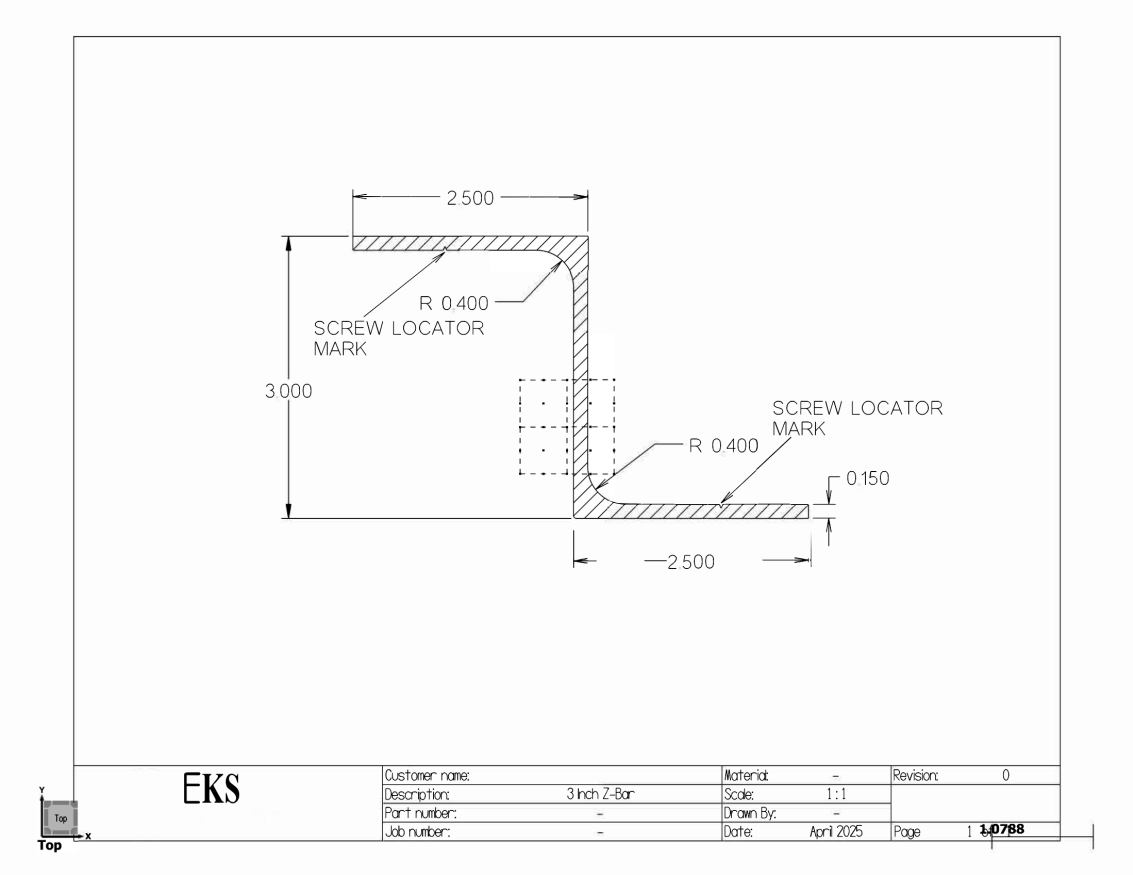



*Figure 2 — 3 in Z-girt profile detail.*

## Spacing terminology — do not combine

| | |
|---|---|
| **Girt spacing** | Distance between adjacent girts. Example project drawings referenced 400 mm (16 in) on-center, for certain locations [24in] spacing is also verified. |
| **Girt-to-framing fastener spacing** | Distance between attachment screws along a girt. Must follow project shop drawings / engineering. Do not infer this value from the girt-spacing dimension. |
| **Panel-to-girt fastener spacing** | Must follow the panel manufacturer and project shop drawings. The original guide referenced an example maximum of 16 in on-centre and a minimum 3/4 in panel edge distance for one project. |

**FIELD HOLD POINT — BEFORE FASTENING**

Confirm the marked girt layout against the approved panel layout, opening details and structural framing. Resolve conflicts before drilling or fastening through the WRB.

# 4. MATERIALS, HARDWARE AND TOOLS

## Typical components

| Component | Typical description | Installation note |
|---|---|---|
| **WRB / air barrier** | Project-specified membrane over sheathing. | Install, flash and repair strictly to WRB manufacturer requirements. |
| **EKS Z-girts / sub-girts** | EKS profile as specified, including 3 in Z-girt, L bar, adjustable L/Z bar where applicable. | Spacing and orientation per approved shop drawings. |
| **Secondary hat channel** | EKS hat channel / furring where specified. | Use only where required by the approved wall assembly. |
| **Insulation** | Mineral wool or other continuous insulation where specified. | Fit tightly; avoid gaps, excessive compression and blocked drainage. |
| **Girt-to-framing fasteners** | #12/3/4” stitch self-drilling / tapping screws, project-specified length. | Verify structural substrate, embedment and corrosion resistance. |
| **Panel fasteners** | #14x2”Gal screws with EPDM washer / colour-matched head where specified. | Seat washer evenly; do not over-drive. |
| **Flashing, trims and sealants** | Project-specified metal trims, closures, flashings and sealants. | Maintain drainage paths and expansion provisions. |

## Tools and safety equipment

- Laser or rotary level; long straightedge.
- Measuring tape, chalk line and permanent markers.
- Impact driver / screw gun; torque-controlled tool recommended for washered fasteners.
- Cutting EKS girts: use a fine-tooth blade with a cool-cut saw setup. Reverse rotation is required. Most standard hand-held saws can meet these criteria when fitted with the correct blade and configured for reverse rotation.
- Sealant tools, approved WRB repair materials and primers/tapes.
- PPE required by site conditions: cut-resistant gloves, eye and hearing protection, and fall protection where required.

**CUTTING REQUIREMENT**

Use a fine-tooth blade and a cool-cut saw setup when cutting EKS girts. Reverse rotation is required. Most standard hand-held saws meet these criteria when equipped with the correct blade and configured for reverse rotation.

# 5. INSTALLATION PROCEDURE — PREPARATION AND GIRT INSTALLATION

### 1. Pre-installation checks

Confirm the current shop drawings, approved submittals, panel layout and substrate conditions. Verify structural framing is located, plumb and within project tolerance. Confirm the WRB / air barrier is complete, flashed and sealed at transitions and openings.

**Field control:** Do not start girt installation on damaged, incomplete or unaccepted WRB.

### 2. Set layout lines

Transfer the approved girt layout to the wall. Mark girt centre-lines and all opening, corner, base, parapet and panel-joint conditions. Use a laser to maintain alignment and a consistent final plane.

**Field control:** Check the layout against panel module dimensions before drilling.

### 3. Install perimeter and termination girts

Install girts at wall terminations, corners, parapets, base conditions and around openings first. Fasten only in accordance with the project shop drawings / engineering. Shim where permitted to establish a true plane without distorting the substrate.

**Field control:** Record any framing or wall-plane condition that requires abnormal shimming or field modification.

### 4. Install intermediate girts

Install the remaining girts at the approved spacing and orientation. Continuously check straightness and plane using a laser or long straightedge. Keep penetrations neat and repair the WRB immediately where required.

**Field control:** Do not use panel fasteners later to pull out-of-plane girts into alignment.

**HOLD POINT — GIRT PLANE**

Before insulation, secondary supports or cladding conceal the work, verify girt location, straightness, fastener installation and WRB repairs. Correct deficiencies now.

# 6. INSTALLATION PROCEDURE — INSULATION, EKS MCP PANELS – Mac Metal siding AND CLOSEOUT

### 5. Install insulation where specified

Install mineral wool or other continuous insulation within / between the girt system as detailed. Fit insulation tightly and continuously without gaps. Avoid excessive compression and maintain drainage or ventilation paths shown in the wall assembly.

**Field control:** Coordinate insulation around fasteners, openings, flashings and terminations.

### 6. Install secondary supports where specified

Where the project uses a secondary hat channel or sub-girt, install it over the primary girts in the orientation and spacing shown on the approved drawings. Confirm fasteners do not interfere with flashings, window systems or other critical interfaces.

**Field control:** Check the completed secondary plane before cladding starts.

### 7. Install cladding MCP/MAC panels

Install panels to the girt system using the project-specified fasteners and fastening pattern. Where EPDM washered screws are specified, seat the washer uniformly. Follow panel edge-distance requirements and do not over-torque.

**Field control:** The original guide referenced a 3/4 in minimum edge distance and an example maximum 12 in on-centre panel fastener spacing for one project; use the current project drawings.

### 8. Install trims, flashings and sealants

Install trims, closures, flashings and sealants in the sequence shown on the approved details. Protect panel edges and maintain drainage continuity. Seal only where required; do not block intended drainage paths.

**Field control:** Check window heads, sills, jambs, transitions and terminations before closeout.

### 9. Final inspection and documentation

Verify the finished cladding plane, fastener installation, washer compression, flashing, trim continuity and WRB repair work. Record deviations and complete punch-list items before demobilization.

**Field control:** Photograph concealed conditions where required by the project quality plan.

# 7. QUALITY CONTROL AND FIELD ACCEPTANCE

## Quality-control checkpoints

| Checkpoint | Acceptance basis |
|---|---|
| **Approved documents** | Current shop drawings and details are available at the work area; superseded drawings removed. |
| **Substrate / framing** | Framing location and plane verified; unusual deviations documented and resolved. |
| **Girt layout** | Location, orientation and spacing match approved drawings and panel-joint requirements. |
| **Girt plane** | Flat and straight before cladding; shimming only where permitted. |
| **Fasteners** | Correct type, length, spacing, penetration/embedment and corrosion resistance. |
| **Washered screws** | EPDM washer uniformly compressed; no tilt, squeeze-out, splitting or under-drive gaps. |
| **WRB** | All unintended penetrations, tears and cuts repaired using approved materials; continuity maintained at openings. |
| **Insulation** | Continuous, tight-fitting and not excessively compressed; drainage/ventilation maintained. |
| **Openings** | Head, sill, jamb, back-pan and flashing conditions match project details. |
| **Closeout** | Punch-list items completed and concealed-work photos / records submitted where required. |

## Common issues and corrective action

| Observed condition | Required response |
|---|---|
| **Wavy panels / oil canning from out-of-plane girts** | Stop panel installation. Re-check the girt plane; shim or realign the sub-framing before work continues. |
| **Washer leaking, splitting or squeezed out** | Replace the fastener and verify correct fastener type and torque. Do not over-drive. |
| **WRB penetration left unsealed** | Stop and repair using the WRB manufacturer’s approved patch, primer and/or tape system. |
| **Fastener misses structural framing** | Do not leave an ineffective attachment. Verify framing location and obtain project direction before correction. |
| **Conflict at window / flashing detail** | Do not field-modify the assembly without approval. Coordinate with the project team and use the current detail. |

# 8. FIELD INSTALLATION REFERENCES

The following images are retained from the original EKS guide as field references. They illustrate typical vertical girt placement over the WRB and coordination around glazing. They are not project-specific acceptance drawings.

*Figure 3 — Example girt layout installed over WRB.*

## Glazing and opening coordination

Use opening perimeters as a dedicated inspection point. Confirm girt support, WRB continuity and interface alignment before glazing-adjacent conditions are concealed.

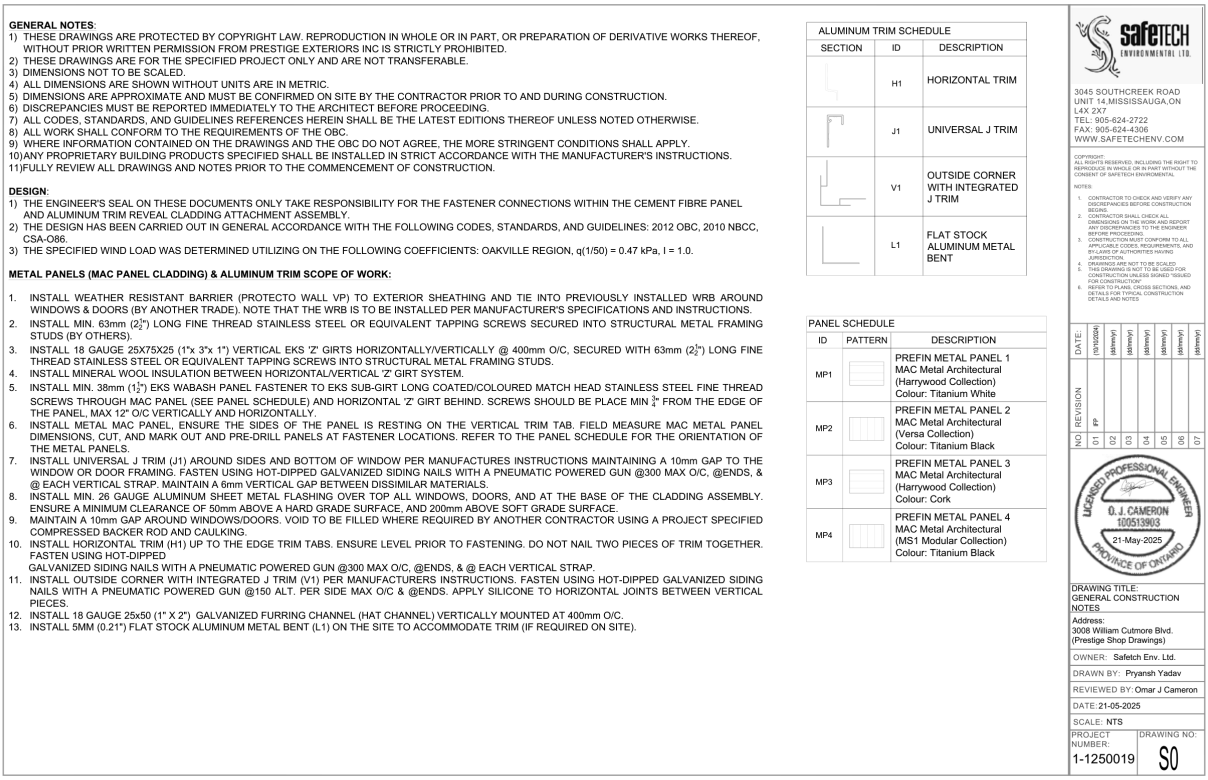
*Figure 4 — Example vertical girt layout and glazing coordination.*

**FIELD OBSERVATION**

Before panels conceal the sub-framing, confirm that vertical lines remain straight, perimeter conditions are fully supported, and WRB continuity is visibly maintained around all openings and penetrations.

# APPENDIX A — PROJECT SHOP DRAWING REFERENCE

The excerpt below is included only as a reference example from the original guide. Always use the latest project-issued and approved drawings at the work area.



**GENERAL NOTES**:
1) THESE DRAWINGS ARE PROTECTED BY COPYRIGHT LAW. REPRODUCTION IN WHOLE OR IN PART, OR PREPARATION OF DERIVATIVE WORKS THEREOF, WITHOUT PRIOR WRITTEN PERMISSION FROM PRESTIGE EXTERIORS INC IS STRICTLY PROHIBITED.
2) THESE DRAWINGS ARE FOR THE SPECIFIED PROJECT ONLY AND ARE NOT TRANSFERABLE.
3) DIMENSIONS NOT TO BE SCALED.
4) ALL DIMENSIONS ARE SHOWN WITHOUT UNITS ARE IN METRIC.
5) DIMENSIONS ARE APPROXIMATE AND MUST BE CONFIRMED ON SITE BY THE CONTRACTOR PRIOR TO AND DURING CONSTRUCTION.
6) DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT BEFORE PROCEEDING.
7) ALL CODES, STANDARDS, AND GUIDELINES REFERENCES HEREIN SHALL BE THE LATEST EDITIONS THEREOF UNLESS NOTED OTHERWISE.
8) ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE OBC.
9) WHERE INFORMATION CONTAINED ON THE DRAWINGS AND THE OBC DO NOT AGREE, THE MORE STRINGENT CONDITIONS SHALL APPLY.
10) ANY PROPRIETARY BUILDING PRODUCTS SPECIFIED SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
11) FULLY REVIEW ALL DRAWINGS AND NOTES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

**DESIGN**:
1) THE ENGINEER'S SEAL ON THESE DOCUMENTS ONLY TAKE RESPONSIBILITY FOR THE FASTENER CONNECTIONS WITHIN THE CEMENT FIBRE PANEL AND ALUMINUM TRIM REVEAL CLADDING ATTACHMENT ASSEMBLY.
2) THE DESIGN HAS BEEN CARRIED OUT IN GENERAL ACCORDANCE WITH THE FOLLOWING CODES, STANDARDS, AND GUIDELINES: 2012 OBC, 2010 NBCC, CSA-O86.
3) THE SPECIFIED WIND LOAD WAS DETERMINED UTILIZING ON THE FOLLOWING COEFFICIENTS: OAKVILLE REGION, q(1/50) = 0.47 kPa, I = 1.0.

**METAL PANELS (MAC PANEL CLADDING) & ALUMINUM TRIM SCOPE OF WORK:**

1. INSTALL WEATHER RESISTANT BARRIER (PROTECTO WALL VP) TO EXTERIOR SHEATHING AND TIE INTO PREVIOUSLY INSTALLED WRB AROUND WINDOWS & DOORS (BY ANOTHER TRADE). NOTE THAT THE WRB IS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS.
2. INSTALL MIN. 63mm ($2\frac{1}{2}$") LONG FINE THREAD STAINLESS STEEL OR EQUIVALENT TAPPING SCREWS SECURED INTO STRUCTURAL METAL FRAMING STUDS (BY OTHERS).
3. INSTALL 18 GAUGE 25X75X25 (1"x 3"x 1") VERTICAL EKS 'Z' GIRTS HORIZONTALLY/VERTICALLY @ 400mm O/C, SECURED WITH 63mm ($2\frac{1}{2}$") LONG FINE THREAD STAINLESS STEEL OR EQUIVALENT TAPPING SCREWS INTO STRUCTURAL METAL FRAMING STUDS.
4. INSTALL MINERAL WOOL INSULATION BETWEEN HORIZONTAL/VERTICAL 'Z' GIRT SYSTEM.
5. INSTALL MIN. 38mm ($1\frac{1}{2}$") EKS WABASH PANEL FASTENER TO EKS SUB-GIRT LONG COATED/COLOURED MATCH HEAD STAINLESS STEEL FINE THREAD SCREWS THROUGH MAC PANEL (SEE PANEL SCHEDULE) AND HORIZONTAL 'Z' GIRT BEHIND. SCREWS SHOULD BE PLACE MIN $\frac{3}{4}$" FROM THE EDGE OF THE PANEL, MAX 12" O/C VERTICALLY AND HORIZONTALLY.
6. INSTALL METAL MAC PANEL, ENSURE THE SIDES OF THE PANEL IS RESTING ON THE VERTICAL TRIM TAB. FIELD MEASURE MAC METAL PANEL DIMENSIONS, CUT, AND MARK OUT AND PRE-DRILL PANELS AT FASTENER LOCATIONS. REFER TO THE PANEL SCHEDULE FOR THE ORIENTATION OF THE METAL PANELS.
7. INSTALL UNIVERSAL J TRIM (J1) AROUND SIDES AND BOTTOM OF WINDOW PER MANUFACTURES INSTRUCTIONS MAINTAINING A 10mm GAP TO THE WINDOW OR DOOR FRAMING. FASTEN USING HOT-DIPPED GALVANIZED SIDING NAILS WITH A PNEUMATIC POWERED GUN @300 MAX O/C, @ENDS, & @ EACH VERTICAL STRAP. MAINTAIN A 6mm VERTICAL GAP BETWEEN DISSIMILAR MATERIALS.
8. INSTALL MIN. 26 GAUGE ALUMINUM SHEET METAL FLASHING OVER TOP ALL WINDOWS, DOORS, AND AT THE BASE OF THE CLADDING ASSEMBLY. ENSURE A MINIMUM CLEARANCE OF 50mm ABOVE A HARD GRADE SURFACE, AND 200mm ABOVE SOFT GRADE SURFACE.
9. MAINTAIN A 10mm GAP AROUND WINDOWS/DOORS. VOID TO BE FILLED WHERE REQUIRED BY ANOTHER CONTRACTOR USING A PROJECT SPECIFIED COMPRESSED BACKER ROD AND CAULKING.
10. INSTALL HORIZONTAL TRIM (H1) UP TO THE EDGE TRIM TABS. ENSURE LEVEL PRIOR TO FASTENING. DO NOT NAIL TWO PIECES OF TRIM TOGETHER. FASTEN USING HOT-DIPPED GALVANIZED SIDING NAILS WITH A PNEUMATIC POWERED GUN @300 MAX O/C, @ENDS, & @ EACH VERTICAL STRAP.
11. INSTALL OUTSIDE CORNER WITH INTEGRATED J TRIM (V1) PER MANUFACTURERS INSTRUCTIONS. FASTEN USING HOT-DIPPED GALVANIZED SIDING NAILS WITH A PNEUMATIC POWERED GUN @150 ALT. PER SIDE MAX O/C & @ENDS. APPLY SILICONE TO HORIZONTAL JOINTS BETWEEN VERTICAL PIECES.
12. INSTALL 18 GAUGE 25x50 (1" X 2") GALVANIZED FURRING CHANNEL (HAT CHANNEL) VERTICALLY MOUNTED AT 400mm O/C.
13. INSTALL 5MM (0.21") FLAT STOCK ALUMINUM METAL BENT (L1) ON THE SITE TO ACCOMMODATE TRIM (IF REQUIRED ON SITE).

ALUMINUM TRIM SCHEDULE

| SECTION | ID | DESCRIPTION |
|---|---|---|
| | H1 | HORIZONTAL TRIM |
| | J1 | UNIVERSAL J TRIM |
| | V1 | OUTSIDE CORNER WITH INTEGRATED J TRIM |
| | L1 | FLAT STOCK ALUMINUM METAL BENT |

PANEL SCHEDULE

| ID | PATTERN | DESCRIPTION |
|---|---|---|
| MP1 | | PREFIN METAL PANEL 1<br>MAC Metal Architectural<br>(Harrywood Collection)<br>Colour: Titanium White |
| MP2 | | PREFIN METAL PANEL 2<br>MAC Metal Architectural<br>(Versa Collection)<br>Colour: Titanium Black |
| MP3 | | PREFIN METAL PANEL 3<br>MAC Metal Architectural<br>(Harrywood Collection)<br>Colour: Cork |
| MP4 | | PREFIN METAL PANEL 4<br>MAC Metal Architectural<br>(MS1 Modular Collection)<br>Colour: Titanium Black |

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NOTES:
1. CONTRACTOR TO CHECK AND VERIFY ANY DISCREPANCIES BEFORE CONSTRUCTION BEGINS.
2. CONTRACTOR SHALL CHECK ALL DIMENSIONS ON THE WORK AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING.
3. CONSTRUCTION MUST CONFORM TO ALL APPLICABLE CODES, REQUIREMENTS, AND BY-LAWS OF AUTHORITIES HAVING JURISDICTION.
4. DRAWINGS ARE NOT TO BE SCALED.
5. THESE DRAWINGS ARE NOT 'ISSUED FOR CONSTRUCTION' UNLESS SIGNED 'ISSUED FOR CONSTRUCTION'
6. REFER TO PLANS, CROSS SECTIONS, AND DETAILS FOR TYPICAL CONSTRUCTION DETAILS AND NOTES

| NO | REVISION | DATE: |
|---|---|---|
| 01 | IFP | (13/10/2024) |
| 02 | | (dd/mm/yy) |
| 03 | | (dd/mm/yy) |
| 04 | | (dd/mm/yy) |
| 05 | | (dd/mm/yy) |
| 06 | | (dd/mm/yy) |
| 07 | | (dd/mm/yy) |

LICENSED PROFESSIONAL ENGINEER
O. J. CAMERON
100513903
21-May-2025
PROVINCE OF ONTARIO

DRAWING TITLE:
GENERAL CONSTRUCTION NOTES
Address:
3008 William Cutmore Blvd.
(Prestige Shop Drawings)
OWNER: Safetch Env. Ltd.
DRAWN BY: Pryansh Yadav
REVIEWED BY: Omar J Cameron
DATE: 21-05-2025
SCALE: NTS
PROJECT NUMBER: 1-1250019
DRAWING NO: S0

*Appendix Figure A1 — General notes / scope excerpt from example project shop drawings.*

# APPENDIX B — ELEVATION GIRT PLACEMENT REFERENCE

This elevation is retained as an example of coordinated girt placement. It is not a substitute for the current project-issued elevation or panel layout.

*Appendix Figure B1 — Elevation girt placement excerpt from example project shop drawings.*

**END OF GUIDE**

Installers and inspectors must resolve discrepancies against the current project documents before proceeding. Where field conditions differ from the approved assembly, obtain project direction rather than making unapproved field changes.