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The details shown on the following pages are suggestions or guidelines for installing the MasterLok-90 (ML90) roof panel system. The installation details shown here are proven methods of construction, but they are not intended to cover all building requirements, designs or codes. The details may require changes or revisions due to individual project conditions.

Installation procedures shall be in accordance with the manufacturer's printed instructions, details or approved shop drawings. Installers should thoroughly familiarized themselves with all instructions prior to beginning the installation process.

The designer/installer is responsible to ensure the following:

That the details here meet the particular building requirements.

Awareness of and allowance for expansion/contraction of the roof panels.

That adequate water tightness is maintained.

That a proper uniform substructure is used to avoid panel distortion and that the substructure meets necessary code requirements.

That all supporting members have been examined and are straight, level and plumb.

McElroy Metal can provide all flashings and accessories shown in the installation drawings unless noted otherwise. Panels, flashing and trim shall be installed true and in proper alignment with any exposed fasteners equally spaced for the best appearance. Sealant shall be field applied on a clean, dry surface.

Some field cutting and fitting of panels and flashings is to be expected and to be considered a part of normal installation work. Workmanship shall be of the best industry standards and with installation performed by experienced metal craftsmen.

Oil canning of metal panels is inherent in the product and is not a cause for rejection. Striated panels are recommended as they reduce the appearance of oil canning.

Contents of this manual are subject to change without notice. To confirm this book is the most current copy, please visit McElroy Metal's website at www.mcelroymetal.com.
FASTENER PATTERNS

MASTERLOK-90

LOCATION: EAVE
FASTENERS 1–9 ~ 1/4–14 X 1 1/4” TEK2 ZAC

LOCATION: END LAP
FASTENERS 1–8 ~ 1/4–14 X 1 1/4” TEK2 ZAC

FACTORY APPLIED SEAM SEALANT

MASTELOK-90 PANEL

CLIP

MASTERLOK-90 SNAPPED IN PLACE ON CLIP
INSTALLATION AIDS

MASTERLOK-90 MODULE BOARD

MODULE BOARD:
FIELD CUT OR FABRICATE
FROM 2 X 4 OR OTHER
JOB SITE MATERIAL.

23 11/16"

3 1/2"

1 3/4"

2 5/16"

19 3/16"

2 3/16"

2'-0" MODULE
NOTES: 1. Eave Plate to run from steel line to steel line.
2. Simple Eave Trim to run from out of wall to out of wall.
3. Attach Simple Eave Trim to Eave Plate with temporary fasteners. Attach to wall panel major ribs with 1/4-14 x 7/8" Lap Tek fasteners.
4. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.
5. Install Metal Inside Closure @ 2'-0" O.C. Use 6" long piece of 3/32" x 1" Roll Tape Sealant under closures.
6. Apply continuous run of 3/16" x 7/8" Double Bead on top of Simple Eave Trim.
7. Add 4" long ~ 7/32" x 1 3/8" Strip Tape @ Minor Ribs before installing panel.
8. 3" long ~ 3/32" x 1" Roll Tape Sealant must marry into Double Bead Sealant below and Seam Sealant above.
1. Install Metal Inside Closure @ 2'-0" O.C. Use 6" long piece of 3/32" x 1" Roll Tape Sealant under closures.
2. Simple Eave Trim to run from out of wall to out of wall.
3. Attach Simple Eave Trim to Eave Plate with temporary fasteners. Attach to wall panel major ribs with 1/4-14 x 7/8" Lap Tek fasteners.
4. Trim pieces and Gutter lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.
5. Install Metal Inside Closure @ 2'-0" O.C. Use 6" long piece of 3/32" x 1" Roll Tape Sealant under closures.
6. Apply continuous run of 3/16" x 7/8" Double Bead on top of Simple Eave Trim.
7. Add 4" long ~ 7/32" x 1 3/8" Strip Tape @ Minor Ribs before installing panel.
8. 3" long ~ 3/32" x 1" Roll Tape Sealant must marry into Double Bead Sealant below and Seam Sealant above.

**NOTES:**
- Eave Plate to run from steel line to steel line.
- Simple Eave Trim to run from out of wall to out of wall.
- Attach Simple Eave Trim to Eave Plate with temporary fasteners. Attach to wall panel major ribs with 1/4-14 x 7/8" Lap Tek fasteners.
- Trim pieces and Gutter lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.
- Install Metal Inside Closure @ 2'-0" O.C. Use 6" long piece of 3/32" x 1" Roll Tape Sealant under closures.
- Apply continuous run of 3/16" x 7/8" Double Bead on top of Simple Eave Trim.
- Add 4" long ~ 7/32" x 1 3/8" Strip Tape @ Minor Ribs before installing panel.
- 3" long ~ 3/32" x 1" Roll Tape Sealant must marry into Double Bead Sealant below and Seam Sealant above.
NOTES: 1. Eave Plate to run from steel line to steel line.  
2. Sculptured Eave Trim to run from out of wall to out of wall.  
3. Attach Sculptured Eave Trim to Eave Plate with temporary fasteners. Attach to wall panel major ribs with 1/4-14 x 7/8" Lap Tek fasteners.  
4. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.  
5. Install Metal Inside Closure @ 2'-0" O.C. Use 6" long piece of 3/32" x 1" Roll Tape Sealant under closures.  
6. Apply continuous run of 3/16" x 7/8" Double Bead on top of Sculptured Eave Trim.  
7. Add 4" long ~ 7/32" x 1 3/8" Strip Tape @ Minor Ribs before installing panel.  
8. 3" long ~ 3/32" x 1" Roll Tape Sealant must marry into Double Bead Sealant below and Seam Sealant above.
NOTES:
1. Install Back-up Plate with panel.
2. Place 3/16" X 7/8" Double Bead Roll Tape Sealant on the bottom and sides of Outside Closure and place in line with the factory notching. Attach with 1/4-14 x 1 1/4" Tek2 Zac Fasteners at (8) per panel.
3. Check for voids around closure and fill with Butyl Tube Sealant.
4. Place 3/32" x 1" Roll Tape Sealant on top flange of Outside Closures continuously along Ridge.
5. Attach Fixed Ridge Trim to Outside Closures with 1/4-14 x 7/8" Lap Tek ZAC fasteners at 6" O.C.
6. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or 3/16" Ø bead of Butyl Tube Sealant at trim laps and secure trim joints with 1/4-14 x 7/8" Lap Tek Zac Fasteners at 4" O.C.
NOTES: 1. Install Back-up Plate with panel.
2. Place 3/16" X 7/8" Double Bead Roll Tape Sealant on the bottom and sides of Outside Closure and place in line with the factory notching. Attach with 1/4-14 x 1 1/4" Tek2 Zac Fasteners at (8) per panel.
3. Check for voids around closure and fill with Butyl Tube Sealant.
4. Place 3/32" x 1" Roll Tape Sealant on top flange of Outside Closures continuously along Ridge.
5. Attach Floating Ridge Trim to Outside Closures with 1/4-14 x 7/8" Lap Tek Zac fasteners at 6" O.C.
6. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or 3/16" Ø bead of Butyl Tube Sealant at trim laps and secure trim joints with 1/4-14 x 7/8" Lap Tek Zac Fasteners at 4" O.C.
**NOTES:**

1. Install Back-up Plate with panel.
2. Place 3/16" x 7/8" Double Bead Roll Tape Sealant on the bottom and sides of Outside Closure and place in line with the factory notching. Attach with 1/4-14 x 1 1/4" Tek2 Zac Fasteners at (8) per panel.
3. Check for voids around closure and fill with Butyl Tube Sealant.
4. Place 3/32" x 1" Roll Tape Sealant on top flange of Outside Closures continuously along Ridge.
5. Attach High Side Eave Trim to Outside Closures with 1/4-14 x 7/8" Lap Tek ZAC fasteners at 6" O.C.
6. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or 3/16" Ø bead of Butyl Tube Sealant at trim laps and secure trim joints with Pop-Rivets as shown on page C-22.

*NOTE: SOME TRIM ITEMS AND FASTENERS HAVE BEEN REMOVED FOR CLARITY OF ISOMETRIC DETAIL.*
**NOTES:**

1. Install Back-up Plate with panel.
2. Place 3/16" x 7/8" Double Bead Roll Tape Sealant on the bottom and sides of Outside Closure and place in line with the factory notching. Attach with 1/4-14 x 1 1/4" Tek2 Zac Fasteners at (8) per panel.
3. Check for voids around closure and fill with Butyl Tube Sealant.
4. Place 3/32" x 1" Roll Tape Sealant on top flange of Outside Closures continuously along Ridge.
5. Attach Fixed Hi-Side Tie-In Trim to Outside Closures with 1/4-14 x 7/8" Lap Tek ZAC fasteners at 6" O.C.
6. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or 3/16" Ø bead of Butyl Tube Sealant at trim laps and secure trim joints with 1/4-14 x 7/8" Lap Tek Zac Fasteners at 4" O.C.
**NOTES:**

1. Install Back-up Plate with panel.
2. Place 3/16" x 7/8" Double Bead Roll Tape Sealant on the bottom and sides of Outside Closure and place in line with the factory notching. Attach with 1/4-14 x 1 1/4" Tek2 Zac Fasteners at (8) per panel.
3. Check for voids around closure and fill with Butyl Tube Sealant.
4. Place 3/32" x 1" Roll Tape Sealant on top flange of Outside Closures continuously along Ridge.
5. Attach Floating Hi-Side Tie-In Trim to Outside Closures with 1/4-14 x 7/8" Lap Tek ZAC fasteners at 6" O.C.
6. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or 3/16" Ø bead of Butyl Tube Sealant at trim laps and secure trim joints with 1/4-14 x 7/8" Lap Tek Zac Fasteners at 4" O.C.

*NOTE: SOME TRIM ITEMS AND FASTENERS HAVE BEEN REMOVED FOR CLARITY OF ISOMETRIC DETAIL.*
NOTES: 1. Install roof panels in the numbered order sequence.
2. Refer to page C-10 for a detailed view of the End Lap condition.
NOTES: 1. Install Back-up Plate on upper end of lower panels.
2. Use Temporary Fasteners to hold Back-up Plates in place.
3. 1/8" x 1 1/2" Roll Tape Sealant shall be applied between panels and secured with fasteners through the Cinch Strap, Panels and into the Back-up Plate to form a compressed joint.
4. Apply 3/16" Ø bead of Tube Sealant at panel notch on male leg of upper ML-90 panel.
5. Please refer to pages C-11 for more detailed installation information on End Laps.

*CNote: Some trim items and fasteners have been removed for clarity of isometric detail.*
NOTES: 1. Slide one end of Back-up Plate over the purlin, fully engaging the teeth of the other end with the end of the panel. If the Back-up Plate is not held firmly at both ends, the fasteners to be used in completing the splice could force the plate away and cause it not to seal properly. Field modify first and last plates, see detail above.
2. Apply Tube Sealant on the male seam 3" past notch.
3. Panel clip must be installed only after Back-up Plate is in place.
4. Place 1/8" x 1 1/2" Roll Tape strip exactly 3" from the end of the panel. Do not position the tape strip past the notch. See detail for location of tape strip. Press sealant into the corners of the panel configuration without excessive pressure and peel off paper backing. See application detail for proper procedure.
5. Place Tube Sealant approximately 1" uphill of Pre-Cut Tape sealant, as shown in the above detail.
NOTES:

1. Floating Rake Support Angle to be installed flush with steel line using 1/4-14 x 1 1/4" HWH Tek2 fasteners @ 1'-0" O.C. into the Rake Angle.
2. Apply 3/32" x 1" Roll Tape Sealant along the female leg of panel from eave to ridge.
3. Attach Rake Trim to panel with 1/4-14 x 1 1/4" Tek2 ZAC fasteners at 1'-0" O.C. making sure to fasten into Floating Rake Support Angle.
4. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.
5. Attach Rake Slide with 1/4-14 x 7/8" Lap Tek Fasteners at major ribs of wall panels.

*NOTE: Some trim items and fasteners have been removed for clarity of isometric detail.
NOTES:  
1. Rake Support Angle to be installed flush with steel line using 1/4-14 x 1 1/4" HWH Tek2 fasteners at 1'-0" O.C. into the Rake Angle.
2. Apply 3/32" x 1" Roll Tape Sealant along the female leg of panel from eave to ridge.
3. Attach Rake Trim to panel with 1/4-14 x 1 1/4" Tek2 ZAC fasteners at 1'-0" O.C. making sure to fasten into Rake Support Angle. Attach Rake Trim to wall panels with 1/4-14 x 7/8" Lap Tek fasteners at major ribs.
4. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.
NOTES:
1. Floating Rake Support Angle to be installed flush with steel line using 1/4-14 x 1 1/4" HWH Tek2 w/ Shoulder fasteners at 1'-0" O.C. into the Rake Angle.
2. Apply 3/32" x 1" Roll Tape Sealant along the male leg of panel from eave to ridge.
3. Attach Rake Trim to panel with 1/4-14 x 1 1/4" Tek2 ZAC fasteners at 1'-0" O.C. making sure to fasten into Rake Support Angle. Attach Rake Trim to wall panels with 1/4-14 x 7/8" Lap Tek fasteners at major ribs.
4. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.
5. Attach Rake Slide Trim with 1/4-14 x 7/8" Lap Tek fasteners at major ribs of wall panel.
1. Rake Support Angle to be installed flush with steel line using 1/4-14 x 1 1/4" HWH Tek2 fasteners at 1'-0" O.C. into the Rake Angle.
2. Apply 3/32" x 1" Roll Tape Sealant along the male leg of panel from eave to ridge.
3. Attach Rake Trim to panel with 1/4-14 x 1 1/4" Tek2 ZAC fasteners at 1'-0" O.C. making sure to fasten into Rake Support Angle. Attach Rake Trim to wall panels with 1/4-14 x 7/8" Lap Tek fasteners at major ribs.
4. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.
NOTES: 1. Rake Support Angle to be installed flush with steel line using 1/4-14 x 1 1/4" HWH Tek2 fasteners at 1'-0" O.C. into the Rake Angle.
2. Attach Rake Trim to Rake Support Angle with 1/4-14 x 1 1/4" Tek2 ZAC fasteners at 1'-0" O.C. making sure to fasten into Rake Support Angle. Attach Rake Trim to wall panels with 1/4-14 x 7/8" Lap Tek fasteners at major ribs.
3. Apply 3/32" x 1" Roll Tape Sealant along the male leg of panel and on top of Rake Trim from eave to ridge.
4. Attach Termination Trim to panels with 1/4-14 x 7/8" Lap Tek Zac fasteners at 1'-0" O.C.
5. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.
NOTES:
1. Floating Rake Support Angle to be installed flush with steel line using 1/4-14 x 1 1/4" HWH Tek2 fasteners at 1'-0" O.C. into the Rake Angle.
2. Attach Rake Trim to Rake Support Angle with 1/4-14 x 1 1/4" Tek2 ZAC fasteners at 1'-0" O.C. making sure to fasten into Rake Support Angle. Attach Rake Trim with Rake Slide to wall panels with 1/4-14 x 7/8" Lap Tek fasteners at major ribs.
3. Apply 3/32" x 1" Roll Tape Sealant along the male leg of panel and on top of Rake Trim from eave to ridge.
4. Attach Termination Trim to panels with 1/4-14 x 7/8" Lap Tek ZAC fasteners at 1'-0" O.C.
5. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.
NOTE: SOME TRIM ITEMS AND FASTENERS HAVE BEEN REMOVED FOR CLARITY OF ISOMETRIC DETAIL.

NOTES:
1. Floating Rake Support Angle to be installed flush with steel line using 1/4-14 x 1 1/4" HWH Tek2 w/ Shoulder fasteners at 1'-0" O.C. into the Rake Angle.
2. Attach Rake Trim to Rake Support Angle with 1/4-14 x 1 1/4" Tek2 ZAC fasteners at 1'-0" O.C. making sure to fasten into Rake Support Angle. Attach Rake Trim with Rake Slide to wall panels with 1/4-14 x 7/8" Lap Tek fasteners at major ribs.
3. Apply 3/32" x 1" Roll Tape Sealant along the male leg of panel and on top of Rake Trim from eave to ridge.
4. Attach Termination Trim to panels with 1/4-14 x 7/8" Lap Tek Zac fasteners at 1'-0" O.C.
5. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.
NOTES: 1. Floating Rake Support Angle to be installed flush with steel line using 1/4-14 x 1 1/4" HWH Tek2 with Shoulder fasteners at 1'-0" O.C. into the Rake Angle.
2. Apply 3/32" x 1" Roll Tape Sealant along the female leg of panel from eave to ridge.
3. Attach Rake Tie-In Trim to Roof Panel and Support Angle with 1/4-14 x 1 1/4" Tek2 ZAC fasteners at 1'-0" O.C. making sure to fasten into Rake Support Angle.
4. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.
FLOATING RAKE START TIE-IN DETAIL
(OFF MODULE)

NOTES:
1. Install Floating Rake Plate to Rake Angle using 1/4-14 x 1 1/4" HWH Tek2 w/ Shoulder fasteners at 1'-0" O.C.
2. Apply 3/32" x 1" Roll Tape Sealant to top and bottom of Zee Closure from eave to ridge and attach with 1/4-14 x 1 1/4" Tek2 ZAC fasteners at 1'-0" O.C. into Floating Rake Plate.
3. Attach Rake Tie-In Trim to Zee Closure with 1/4-14 x 7/8" Lap Tek ZAC fasteners at 1'-0" O.C.
4. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.
NOTES: 1. Floating Rake Support Angle to be installed flush with steel line using 1/4-14 x 1 1/4" HWH Tek2 w/ Shoulder fasteners at 1'-0" O.C. into the Rake Angle.
2. Apply 3/32" x 1" Roll Tape Sealant along the female leg of panel from eave to ridge.
3. Attach Rake Tie-In Trim to Roof Panel and Support Angle with 1/4-14 x 1 1/4" Tek2 ZAC fasteners at 1'-0" O.C. making sure to fasten into Rake Support Angle.
4. Trim pieces lap 2". Apply 3/32" x 3/8" Butyl Tape or Butyl Tube Sealant in trim laps and Pop Rivet trims as shown on page C-22.
NOTE: 1. Apply 3/32" x 3/8" Roll Tape Sealant or a 3/16" Ø bead of Tube Butyl 1 1/2" back from the edge of the trim. Also, apply a piece of tape sealant or bead of Tube Butyl as a Pigtail to completely seal joint.
2. Notch the hems on the upper trim piece 2" so that the trim will fit flat in the lap joint.
3. Secure trim laps with Pop Rivets as shown above.

SET BEAD OF SEALANT 1 1/2" DOWN FROM EDGE OF TRIM

TRIM 2" OFF HEM AT LAPS

3/32" X 3/8" ROLL TAPE SEALANT OR 3/16" Ø BEAD OF TUBE BUTYL

RAKE TRIM

RAKE TRIM

GUTTER

EAVE TRIM

43D POP RIVETS

GUTTER

43D POP RIVETS

3/32" X 3/8" ROLL TAPE SEALANT OR 3/16" Ø BEAD OF TUBE BUTYL

ZEE CLOSURE

SLOPE

SLOPE

EAVE TRIM