

## GENERAL DETAILS

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EA3010 - VERTICAL RIB GENERAL NOTES

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DESIGN AND PERFORMANCE CRITERIA

**ROOF SYSTEM**  
THE ROOF SYSTEM CONSISTS OF 24 GAUGE PANELS WITH A NOMINAL COVERAGE OF 1'-4" AND A PANEL SEAM THAT IS 2'-0" TO 2'-10" HIGH (DEPENDS ON CLIP TYPE USED). REFER TO THE DETAILS AND SECTIONS FOR SPECIFIC PANEL, CLIP TYPE.

**PANEL CLIP SPACING**  
THE ROOF SYSTEM USES A CLIP TO ATTACH THE PANELS TO THE ROOF SECONDARY MEMBERS. PANEL CLIP SPACING REQUIREMENTS AS A STANDARD ARE REQUIRED AT EVERY PURIN AND ROOF JOIST.

**PANEL CLIP FASTENING REQUIREMENTS**  
STANDARD CLIP FASTENERS ARE DESIGNED TO FASTEN TO A STEEL STRUCTURAL MEMBER OF .800" MINIMUM THICKNESS (IN G.I.). A MINIMUM OF TWO FASTENERS ARE REQUIRED TO ENGAGE THE STRUCTURAL MEMBER AT EVERY PANEL CLIP LOCATION. IN CERTAIN INSTANCES, THREE FASTENERS MAY BE REQUIRED PER CLIP REQUIRED. LOOK ON CHART AT RIGHT AND IN THE DETAIL DRAWINGS FOR YOUR SPECIFIC FASTENING REQUIREMENTS. FASTENER PULLOUT VALUES ARE DEPENDENT UPON PROJECT LOCATION, SIZE, BUILDING CODE AND LOADING.

**ROOF JOIST UNITS AND CURB SUPPORTS**  
THE ROOF SYSTEM IS ELEVATED ABOVE THE TOP OF THE ROOF SECONDARY STRUCTURAL MEMBERS. THE ROOF CURB SUB FRAMING IS LEVEL WITH THE SECONDARY STRUCTURAL MEMBERS. REFER TO THE DETAILS FOR ROOF JOIST LOCATIONS AND DIMENSIONS.

THE ROOF SYSTEM IS DESIGNED AS A FLOATING SYSTEM. CURB FRAMING AND FLASHING MUST BE DESIGNED ACCORDINGLY TO ALLOW THE CURB SYSTEM TO FLOAT WITH THE ROOF DURING THERMAL EXPANSION AND CONTRACTION. ROOF CURBS SHALL NOT SPIN THE ROOF OF A BUILDING.

**INSULATION REQUIREMENTS**  
INSULATION IS RECOMMENDED TO BE USED IN ALL ROOF APPLICATIONS TO AVOID PROBLEMS WITH CONDENSATION FORMING ON THE UNDERSIDE OF THE SHEETING. THIS ALSO PROVIDES A BUFFER BETWEEN THE PURLINS AND THE ROOF TO ELIMINATE NOISE AND POSSIBLE DAMAGE DUE TO METAL-TO-METAL CONTACT. NOISE REDUCING FOAM TAPE CAN BE SUPPLIED FOR USE IN LIMITED APPLICATIONS (CANOEELS, ETC.) WHEN INCLUDED AS PART OF THE ROOF ORDER. REFER TO THE DETAILS FOR FOAM TAPE REQUIREMENTS.

**PAINTED ROOF**  
PANELS FOR PAINTED ROOF PANELS ARE OFTEN PROVIDED BY MBS. IN THIS CASE, GUTTER BRACKETS AND OUTSIDE CLOSURES WILL BE PAINTED TO MATCH THE ROOF COLOR AS A STANDARD.

MASTIC APPLICATION

**TEMPERATURE EXTREMES**  
TEMPERATURE EXTREMES MUST BE CONSIDERED DURING INSTALLATION OF THE ROOF DUE TO THE SENSITIVITY OF MASTICS. THE RECOMMENDED INSTALLATION TEMPERATURE RANGE IS 20 TO 28 DEGREES FAHRENHEIT. AT COLDER TEMPERATURES, THE MASTIC STIFFENS RESULTING IN LOSS OF ADHESION AND COMPRESSIBILITY. AT HIGHER TEMPERATURES, THE MASTIC BECOMES TOO SOFT FOR PRACTICAL HANDLING. ON COLD BUT SUNNY DAYS, THE PANEL SURFACE MAY BECOME WARM ENOUGH TO ACCEPT THE APPLICATION OF HEATED MASTIC EVEN THOUGH THE AIR TEMPERATURE IS BELOW 20 DEGREES FAHRENHEIT.

WHEN OVERHEAT TEMPERATURES FALL BELOW FREEZING, THE MASTIC SHOULD BE STORED IN A HEATED ROOM SO IT WILL BE WARM ENOUGH TO USE THE FOLLOWING DAY. ON HOT DAYS, THE MASTIC CARTONS SHOULD BE STORED OFF THE ROOF IN A COOL AND SHADDED AREA. WHILE ON THE ROOF, MASTIC ROLLS SHOULD BE KEPT SHADDED UNTIL ACTUAL USE.

IN VERY COLD WEATHER, IT IS RECOMMENDED THAT THE FASTENERS BE TIGHTENED SLOWLY AND ONLY THIN ENOUGH THAT THE MASTIC IS IN FULL CONTACT WITH THE PANEL OR FLASHING. THEN ON THE NEXT SUNNY DAY, COMPLETE THE TIGHTENING PROCESS AFTER THE SUN WARMS THE PANEL AND FLASHING SURFACES.

**CONTAMINATION**  
TO ASSURE PROPER ADHESION AND SEALING, THE MASTIC MUST HAVE COMPLETE CONTACT WITH ADJOINING SURFACES. CONTAMINANTS SUCH AS WATER, OIL, DIRT AND DUST PREVENT SUCH CONTACT. THE PANEL AND FLASHING SURFACES MUST BE DRY AND THOROUGHLY CLEANED OF ALL CONTAMINANTS. BEFORE APPLYING TAPE, MASTIC, THE MASTIC SHOULD BE CHECKED FOR CONTAMINANTS. IF THE MASTIC SURFACES ARE CONTAMINATED, IT MUST NOT BE USED.

DURING COOL WEATHER, CONDENSATION OR LIGHT MIST CAN ACCUMULATE ON THE PANEL AND FLASHING SURFACE AND NOT BE EASILY NOTICED. IT IS RECOMMENDED THAT THE MASTIC ALWAYS BE KEPT UNDER PROTECTIVE COVER AND THAT THE PANEL AND FLASHING SURFACES BE WIPED DRY IMMEDIATELY BEFORE INSTALLATION.

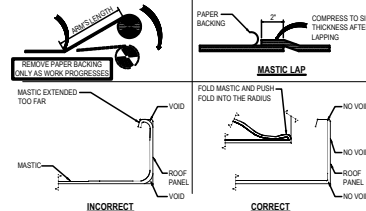
TAPE MASTIC IS PROVIDED WITH A PROTECTIVE PAPER TO REDUCE CONTAMINATION. INCOMPLETE REMOVAL OF THE PROTECTIVE PAPER WILL PREVENT THE MASTIC ADHESION TO THE PANEL OR FLASHING SURFACES. ALWAYS CHECK THAT THE PROTECTIVE PAPER IS COMPLETELY REMOVED. DO NOT REMOVE THE PROTECTIVE PAPER UNTIL IMMEDIATELY BEFORE THE PANEL OR FLASHING IS INSTALLED OVER THE MASTIC.

**COMPRESSION**  
TO ASSURE PROPER COMPRESSION AND SEAL, THE TAPE MASTIC MUST BE COMPRESSED BETWEEN THE PANEL AND FLASHING SURFACES WITH FIRM AND UNIFORM PRESSURE. IN MOST CASES, THE REQUIRED PRESSURE IS APPLIED BY THE CLAMPING ACTION OF SCREWS PULLING THE ADJOINING SURFACES TOGETHER. HOWEVER, THE TAPE SEALANT'S RESISTANCE TO PRESSURE BECOMES GREATER IN COLD WEATHER.

DURING COLD WEATHER, THE FASTENERS MUST BE TIGHTENED SLOWLY TO ALLOW THE MASTIC TIME TO COMPRESS. IF THE FASTENERS ARE TIGHTENED TOO FAST, THE FASTENERS MAY STOP BEFORE THE MASTIC COMPRESSES. ADEQUATELY, OR THE PANEL OR FLASHING MAY DEFORM IN THE IMMEDIATE AREA OF THE FASTENER, LEAVING THE REST OF THE MASTIC INSUFFICIENTLY COMPRESSED.

**INSIDE CORNERS**  
AN INSIDE CORNER, SUCH AS WHERE THE PANEL PLATE MEETS A RIB, IS USUALLY THE MOST CRITICAL AREA TO SEAL. A COMMON MISTAKE FOR THE INSTALLER IS TO BRIDGE THE MASTIC ACROSS THE INSIDE RADIUS.

WHEN THE LAPPING PANEL OR FLASHING IS PUSHED INTO PLACE, THE BRIDGED MASTIC IS STRETCHED AND THINNED. THE MASTIC MAY THEN BE TOO THIN TO ADEQUATELY SEAL. THIS CRITICAL AREA, WHEN TAPE MASTIC IS APPLIED AT AN INSIDE RADIUS, IT IS RECOMMENDED THAT THE MASTIC BE FOLDED BACK, THEN PUSH THE MASTIC FOLD INTO THE RADIUS.



ERECTORS RESPONSIBILITY

**REGULATIONS**  
REGULATIONS SET FORTH BY THE OCCUPATIONAL SAFETY AND HEALTH ACT, LOCAL, STATE, AND/OR FEDERAL AGENCIES SHOULD BE ADHERED TO AT ALL TIMES. MBS IS NOT RESPONSIBLE FOR INJURY, DAMAGE, OR FAILURE, WHICH MAY BE THE RESULT FROM FAILING TO MEET ANY OF THESE REGULATIONS.

IN COMPLIANCE WITH THE HAZARD COMMUNICATION RULE 1910-1200, MATERIAL SAFETY DATA SHEETS (MSDS) HAVE BEEN PROVIDED FOR YOUR USE AND SAFETY. THESE DATA SHEETS SHOULD BE MADE AVAILABLE TO ALL PERSONNEL THAT COME IN CONTACT WITH THESE PRODUCTS. THESE DATA SHEETS WILL GIVE YOU THE NECESSARY INFORMATION TO PROPERLY HANDLE SUCH MATERIALS AND WHAT TO DO IN CASE OF AN EMERGENCY. (THE MSDS FILES ARE LOCATED ONLINE AND ARE AVAILABLE UPON REQUEST).

THE ERECTOR OF THE ROOF SYSTEM IS RESPONSIBLE FOR THE SAFE EXECUTION OF THIS MANUAL. THESE INSTRUCTIONS ARE INTENDED TO DESCRIBE THE SEQUENCE AND PROPER PLACEMENT OF PARTS. THEY ARE NOT INTENDED TO PRESCRIBE COMPREHENSIVE SAFETY PROCEDURES. THE PROCEDURES IN THIS MANUAL ARE BELIEVED TO BE RELIABLE. HOWEVER, MBS SHALL NOT BE RESPONSIBLE FOR INJURY, DAMAGE, OR FAILURE DUE TO THE MISAPPLICATION OF THESE PROCEDURES, IMPROPER ERECTION TECHNIQUES, OR NEGLIGENCE.

**WALKING AND WORKING ON ROOF PANELS**  
DO NOT PLACE BUNDLES OF PANELS OR THE ROOF STRUCTURE WITHOUT FIRST VERIFYING THE STRUCTURE WILL SAFELY SUPPORT THE CONCENTRATED WEIGHT OF THE PANELS AND THE WEIGHT OF THE INSTALLATION CREW. SOME ROOF STRUCTURES MAY NOT BE DESIGNED TO SUPPORT THE WEIGHT OF A FULL PANEL BUNDLE WITHOUT ADDITIONAL STRUCTURE SUPPORT.

DO NOT USE A ROOF PANEL AS A WORKING PLATFORM. AN UNSUPPORTED PANEL COULD COLLAPSE UNDER THE WEIGHT OF A PERSON STANDING BETWEEN PURLINS OR AT THE PANEL END.

DO NOT WALK ON THE LAST INSTALLED PANEL RUN, AS THE UNSUPPORTED EDGE COULD COLLAPSE UNDER A PERSON'S WEIGHT. WHEN INSTALLING CLIPS OR MARKING END LAP CONNECTIONS, ETC., STAND WHERE THE ROOF STRUCTURAL WILL SUPPORT YOUR WEIGHT.

**SAFETY EQUIPMENT**  
THE USE OF SAFETY EQUIPMENT FOR THE ROOF PANEL INSTALLATION IS RECOMMENDED AT ALL TIMES DURING THE INSTALLATION PROCESS. HOWEVER, WHEN USING LADDERS, ENSURE THAT THE CLIP, BED PUNCHES AND WIRE CABLES ARE COVERED IN SUCH A MANNER THAT THEY WILL NOT SCRATCH THE PANEL SURFACE IF ACCIDENTALLY SWUNG ALONG THE PANEL.

**CREW SIZE**  
THE NUMBER OF THE INDIVIDUAL ROOF PANELS SHOULD BE CONSIDERED WHEN DETERMINING CREW SIZE. IT IS RECOMMENDED THAT UNDER NORMAL CONDITIONS, THERE BE ONE PERSON FOR EVERY TEN FEET OF PANEL LENGTH, PLUS ONE.

**PANEL OVERHANG**  
DO NOT STAND ON THE END OF UNSUPPORTED (CANTILEVERED) PANELS AT THE EAVE OR RIDGE. STANDING ON THE CANTILEVER PORTION MAY RESULT IN PANEL COLLAPSE.

**POINT LOADS**  
WHEN PROPERLY SUPPORTED BY THE STRUCTURAL STEEL, PANELS ARE DESIGNED TO SUPPORT UNIFORM LOADS, WHICH ARE EVENLY DISTRIBUTED OVER THE PANEL SURFACES. POINT LOADS THAT OCCUR IN SMALL OR CONCENTRATED AREAS, SUCH AS HEAVY EQUIPMENT, LADDER, OR PLATFORM FEET, ETC., MAY CAUSE PANEL DEFORMATION OR EVEN PANEL COLLAPSE.

**SLIP SURFACES**  
PANEL SURFACES AND STRUCTURAL STEEL SURFACES ARE HARD, SMOOTH, AND NONABSORBENT, WHICH CAUSES THESE SURFACES TO BE VERY SLIP WHEN WET OR COVERED WITH SNOW OR ICE. EVEN BLENDED SAND OR GRAVY AUST CAN MAKE THESE SURFACES DIFFICULT TO WALK ON WITHOUT SLIPPING.

UNPAINTED METAL SURFACES ARE OFTEN COATED WITH OIL TO ACCOMMODATE THE PANEL FABRICATION PROCESS. ALTHOUGH DESIGNED TO WASH AWAY OR EVAPORATE DURING NORMAL WEATHER, THE OIL ON NEW PANELS CAN BE EXTREMELY SLIP, ESPECIALLY DURING PERIODS OF LIGHT RAIN AND NEW CAUTION MUST BE EXERCISED TO PREVENT SLIPPING AND FALLING ONTO THE ROOF SURFACE OR EVEN SLIDING OFF THE ROOF. NON-SLIP FOOTWEAR IS A NECESSITY AND NON-SLIP WORKING PLATFORMS ARE RECOMMENDED.

**ELECTRICAL CONDUCTANCE**  
METAL PANELS ARE EXCELLENT ELECTRICAL CONDUCTORS. A COMMON CAUSE OF INJURY IS THE CONTACT OF METAL PANELS WITH POWER LINES DURING HANDLING AND INSTALLATION. THE LOCATION OF ALL POWER LINES MUST BE NOTED AND, IF POSSIBLE, FLAGGED. THE INSTALLATION PROCESS MUST BE ROUTED TO AVOID ACCIDENTAL CONTACT WITH ALL POWER LINES AND HIGH VOLTAGE SERVICES AND EQUIPMENT. ALL TOOLS AND POWER CORDS MUST BE PROPERLY INSULATED AND GROUNDED AND THE USE OF APPROVED GROUND FAULT CIRCUIT BREAKERS IS RECOMMENDED.

**FALSE SENSE OF SECURITY**  
BLURRY AND ROSE BORDERS INSULATION BLOCK THE INSTALLER'S VIEW OF THE GROUND BELOW THE ROOF. SERIOUS INJURY CAN OCCUR WHEN THE INSTALLER GETS A FALSE SENSE OF SECURITY BECAUSE HE CANNOT SEE THE GROUND AND STEPS THROUGH THE INSULATION.

**SHARP EDGES**  
SOME EDGES OF PANELS AND FLASHING ARE RAZOR SHARP AND CAN CAUSE SEVERE CUTS IF PROPER PROTECTIVE HAND GEAR IS NOT WORN. BE CAREFUL NOT TO INJURE OTHERS WHILE MOVING PANELS AND FLASHING.

**COORDINATION WITH OTHER TRADES**  
SUPPORTS FOR THE ROOF SYSTEM SHALL BE PROVIDED AND ARE REQUIRED AS SHOWN IN THE SECTIONS AND AS NOTED IN THESE SPECIFICATIONS. ALL NECESSARY CLEARANCE DIMENSIONS FOR PROPER ELEVATIONS RELATIVE TO THE ROOF PANELS HAVE BEEN SHOWN. THE ERECTOR SHALL BE RESPONSIBLE FOR COORDINATING THESE DIMENSIONAL REQUIREMENTS WITH OTHER TRADES ASSOCIATED WITH THE BUILDING ROOF SYSTEM.

**ERECTION CARE**  
THE ERECTOR MUST BE SKILLED IN THE ERECTION OF METAL BUILDING SYSTEMS AND IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, FEDERAL, AND STATE CONSTRUCTION AND SAFETY REGULATIONS INCLUDING OSHA REGULATIONS AS WELL AS ANY APPLICABLE REQUIREMENTS OF LOCAL, NATIONAL, OR INTERNATIONAL UNION RULES OR PRACTICES. THE ERECTOR REMAINS SOLELY RESPONSIBLE FOR THE SAFETY AND APPROPRIATENESS OF ALL TECHNIQUES AND METHODS UTILIZED BY ITS CREWS IN THE ERECTION OF THE METAL BUILDING SYSTEM AND/OR THE ROOF SYSTEM. THE ERECTOR IS ALSO RESPONSIBLE FOR SUPPLYING ANY SAFETY DEVICES SUCH AS SCAFFOLDS, RUNWAYS, NETS, ETC. WHICH MAY BE REQUIRED TO SAFELY ERECT THE METAL BUILDING SYSTEM AND/OR ROOF SYSTEM.

THE ERECTOR OF THE ROOF SYSTEM SHALL EXERCISE GREAT CARE AND ATTENTION TO THE DETAILS AS SHOWN ON THESE DRAWINGS TO INSURE A SECURE AND PROPER FIT OF ALL COMPONENTS. MBS SHALL NOT BE RESPONSIBLE FOR SUPERVISING AND/OR COORDINATING THE ERECTION OF THE ROOF SYSTEM WITH OTHER TRADES.

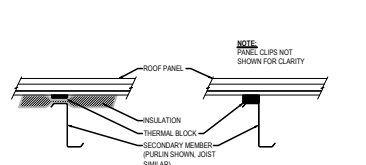
DUE CONSIDERATION MUST BE GIVEN BY THE ERECTOR TO THE EFFECTS OF THERMAL EXPANSION AND CONTRACTION WHEN ERECTING A ROOF TO BE AN EXISTING STRUCTURE TO INSURE A SAFE, SECURE, WEATHERTIGHT CONDITION. FLASHING FOR THE INS TO EXISTING BUILDINGS IS TYPICALLY NOT INCLUDED AS PART OF THE MATERIAL PROVIDED BY MBS. REFER TO THE SECTION DETAILS FOR SPECIFIC MATERIALS PROVIDED BY MBS.

THERMAL BLOCKS

**PURPOSE**  
THERMAL BLOCKS ARE USED IN BOTH INSULATED AND UNINSULATED CONDITIONS. THEY PROVIDE IMPROVED THERMAL PERFORMANCE WHERE INSULATION HAS BEEN COMPRESSED AT THE SECONDARY MEMBERS UNDER THE PANEL. THEY ALSO PROVIDE SUPPORT TO THE PANEL AND REDUCE PANEL FUTTERING AND RUMBLE IN UNINSULATED CONDITIONS. UNINSULATED CONDITIONS UTILIZE THERMAL BLOCKS OR FOAM SPACERS THAT HAVE ADHESIVE TO ADHERE TO THE SECONDARY MEMBER TO PREVENT THEM FROM FALLING OUT OF PLACE.

**LOCATIONS**  
THERMAL BLOCKS OR FOAM SPACERS ARE TO BE USED UNDER ANY SECONDARY MEMBER WITH THE EXCEPTION OF THE EAVE MEMBER WHERE THE EAVE PLATE IS LOCATED.

INSULATED ROOF					UN-INSULATED ROOF				
INSULATION	BLOCK	BLOCK			INSULATION	BLOCK	BLOCK		
IN. THICK	MM # 1	THICK	CLIP		IN. THICK	MM # 1	THICK	CLIP	
R7	2"	N/A	N/A	SHORT	H3300	1/2"	SHORT		
R10	3/8"	N/A	N/A	SHORT	H3300	1/2"	TALL		
R11	3/8"	N/A	N/A	SHORT					
R13	4/8"	N/A	N/A	SHORT					
R13	4/8"	H4400	13/16"	TALL					
R18	1 1/4"	H4400	13/16"	TALL					
R19	6/8"	H4400	13/16"	TALL					
R25	8"	H4400	13/16"	TALL					



ROOF SYSTEM COMPONENT WITH DETAILING

**DEFINITION**  
COMPONENTS WITH DETAILING DEFINITION IS A CASE WHERE MBS IS PROVIDING THE ROOF SYSTEM TO BE USED IN CONJUNCTION WITH ANOTHER STRUCTURE. MBS REFERS TO THAT AS A "COMPONENTS WITH DETAILING". THIS SIMPLY MEANS THAT MBS SHALL CALCULATE THE QUANTITIES AND LENGTHS FOR THE MATERIAL REQUIRED. MBS IS PERFORMING AN ENGINEERING STUDY OF THE EXISTING STRUCTURE. THE ENGINEER OF RECORD ON THE PROJECT SHALL BE RESPONSIBLE FOR COORDINATING THE ROOF SYSTEM WITH THE OTHER TRADES OF THE PROJECT TO INSURE A SAFE, QUALITY AND PROPER APPLICATION OF THE ROOF SYSTEM.

**DIAPIRISM**  
PANELS ARE DESIGNED TO ACCOMMODATE THERMAL EXPANSION AND CONTRACTION AND WILL NOT ACT AS A DIAPIRISM FOR RESISTING LATERAL LOAD FORCES OR PROVIDING LATERAL STABILITY TO THE ROOF STRUCTURAL MEMBERS. DUE CONSIDERATION FOR THIS MUST BE ADDRESSED BY THE PROJECT ENGINEER OF RECORD. IN ADDITION, THE ROOF SYSTEM, BECAUSE IT IS DESIGNED TO FLOAT, WILL NOT SUPPORT STRUCTURAL MEMBERS. LATERALLY, WHEN REPLACING AN EXISTING SCREWDOWN ROOF, ADDITIONAL BRACING MAY BE REQUIRED TO LATERALLY SUPPORT THE MEMBERS. ENGINEERING AND MATERIAL FOR THESE USES SHALL NOT BE PROVIDED BY MBS.

BUILDING & PANEL PREPARATION

**STEP 1: PLUMB AND SQUARE**  
THE FIRST STEP IN THE SUCCESSFUL INSTALLATION OF WALL PANELS IS TO HAVE THE PRIMARY FRAMING PLUMB AND SQUARE. FOR BEST RESULTS, IT IS RECOMMENDED THAT A TRANSIT BE USED WHEN ERECTING THE STRUCTURAL STEEL. MAKE SURE THAT THE FOUNDATION AND BUILDING STRUCTURE IS SQUARE, LEVEL, AND CORRECT TO THE CUT-TO-CUT STEEL LINE DIMENSIONS. SEE FIGURE "A".

**FIELD CUTTING PANELS**  
WHEN FIELD CUTTING OR MITERING WALL PANELS, NON-ABRASIVE CUTTING TOOLS SUCH AS NIBBLERS OR TIN SNIPS SHALL BE USED. ABRASIVE CUTTING TOOLS SUCH AS MECHANICAL GRINDERS OR POWER SAWS CAN DAMAGE THE MATERIAL FINISH AND CREATE EXCESS METAL SHAVINGS THAT CAN CORRODE THE PANELS. THE USE OF UNAPPROVED CUTTING DEVICES MAY VOID THE FACTORY WARRANTY.

ANY METAL SHAVINGS THAT ARE CREATED NEED TO BE CLEANED FROM THE PANEL TO PREVENT SCORING DURING AND/OR CORROSION. THE MANUFACTURER WILL NOT ACCEPT CLAIMS FOR DAMAGE/DETERIORATION DUE TO USE OF UNAPPROVED TOOLS.

SPECIAL CONDITION AT A STRONG-BACK EAVE BEAM

IF THIS PROJECT HAS AN EAVE BEAM WITH (2) PURLINS, AS SHOWN, DO NOT ATTACH ROOF CLIPS TO THE "SECOND" PURLIN.



FASTENER INSTALLATION

**RECOMMENDED TOOL TYPES (SEE ALSO FASTENER SCHEDULE)**  
A RIMP OR HIGHER RATED TOOLS (DO NOT USE IMPACTING TOOLS)  
2000 - 2500 RPM SCREW GUN WITH TORQUE ADJUSTABLE CLUTCH  
MANUAL OR ELECTRIC RIVET TOOL

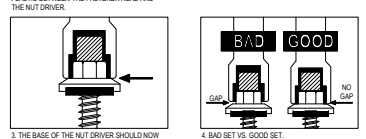
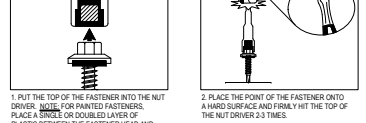
**DO NOT USE IMPACTING TOOLS**  
TO ASSURE PROPER VOLTAGE TO THE TOOL, EXTENSION CORDS SHOULD BE CHECKED FOR PROPER WIRE SIZE/CORD LENGTH.  
16 GAUGE WIRE, MAXIMUM CORD LENGTH = 100'  
14 GAUGE WIRE, MAXIMUM CORD LENGTH = 200'  
12 GAUGE WIRE, MAXIMUM CORD LENGTH = 300'

**DRIVING TIPS**  
SET THE NUT DRIVER AS DESCRIBED BELOW PRIOR TO INSTALLING FASTENERS TO PREVENT FASTENER WOBBLING.

SOCKET EXTENSIONS (IF ANY) ARE RECOMMENDED TO BE USED FOR INSTALLING PANEL CLIP FASTENERS TO MAINTAIN VERTICAL FASTENER INSTALLATION.

EXCESSIVE PRESSURE CAN CAUSE DRILL POINT FAILURE. LET THE FASTENER DO THE WORK.

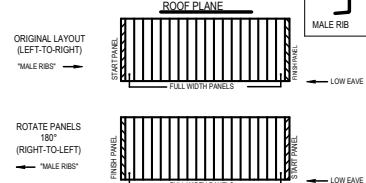
DO NOT OVER TIGHTEN FASTENERS AS THIS WILL LEAD TO PANEL DIMPLING AND DISTORTION.



ROOF SHEETING DIRECTION

1) THE ROOF SHEETING PLAN IS SHOWN WITH THE ROOF PANELS BEING ERECTED FROM "LEFT TO RIGHT". IF THE DESIRE IS TO ERECT THE ROOF PANELS FROM "LEFT TO RIGHT", FOLLOW THE ROOF SHEETING PLAN AS SHOWN. IF THE DESIRE IS TO ERECT THE ROOF PANELS FROM "RIGHT TO LEFT", FOLLOW THE INSTRUCTIONS SHOWN BELOW.

2) WHEN SETTING BUNDLES OF PANELS ON THE ROOF, THE "MALE RIB" MUST ALWAYS BE AWAY FROM THE END OF THE BUILDING WHERE THE SHEETING WILL BEGIN.



**Loc Seam NOTES**  
EAVE GUTTER DETAIL - WALL PANELS  
SEE WALL SHEETING CREATION NOTES FOR WALL PANEL FASTENER LOCATIONS

EA3010

Detailer Notes:

1) THIS DETAIL REQUIRED ON EVERY VERTICAL RIB ROOF PROJECT.

## EA3011 - VERTICAL RIB PANEL INSTALLATION

Download the DWG file by clicking here.

### BASIC INSTALLATION SEQUENCE

THE FOLLOWING STEPS OUTLINE THE BASIC INSTALLATION OF THE ROOF SYSTEM. REFERENCE THE SPECIFIC DETAILS WITHIN THIS ERECTION DRAWING SET FOR CONDITIONS SPECIFIC TO THIS PROJECT.

#### START PANEL PREPARATION

THE ROOF SYSTEM IS DESIGNED TO BE ELEVATED AND FLOAT ABOVE THE ROOF SUPPORT MEMBERS. BEGIN AT THE LOWER RAKE CORNER BY INSTALLING THE EAVE PLATE. (REFERENCE EAVE PLATE INSTALLATION BELOW)

AFTER EAVE PLATE HAS BEEN INSTALLED, STITCH THE FIRST ROLL OF ROOF INSULATION FROM RIDGE / HIGH EAVE TO LOW EAVE.

INSTALL THE RAKE CLIPS AND RAKE ANGLE TO SUPPORT / SECURE THE START PANEL. (REFERENCE RAKE ANGLE / RAKE CLIP PREPARATION TO THE RIGHT)

#### FIELD CUT AND INSTALL START PANEL

THE START PANEL IS SUPPLIED AS A FULL SHEET AND WILL NEED TO BE CUT. REFER TO THE ROOF SHEETING PLAN FOR START / FINISH DIMENSIONS AND RAKE DETAILS TO DETERMINE PROPER PANEL CUT. INSTALL THE START PANEL (LOW EAVE PANEL FIRST IF PANEL RUN IS LONG ENOUGH TO REQUIRE ENDLAPS) BY SECURING THE PANEL TO THE EAVE PLATE AND RAKE ANGLE. (REFERENCE LOW EAVE AND RAKE DETAILS). INSTALL PANEL CLIPS ON LEADING EDGE OF PANEL AS SHOWN IN THE PANEL CLIP DETAIL. CONTINUE TO INSTALL UPSLOPE START PANEL IF ENDLAPS ARE REQUIRED. REFERENCE THE BACKUP PLATE DETAIL AND ENDLAP DETAIL FOR ATTACHMENT OF START PANEL(S) AT RAKE ANGLE.

#### INTERMEDIATE PANEL & MODULARITY

THE INTERMEDIATE PANELS (FULL PANELS) SHOULD BE INSTALLED BY ROLLING THE PANEL INTO PLACE ENSURING THE SEAM IS FULLY ENGAGED. SECURE THE PANELS WITH PANEL CLIPS AND THE LOW EAVE ACROSS THE ROOF. IT IS RECOMMENDED TO INSTALL THE OUTSIDE CLOSURE AT THE HIGH EAVE / RIDGE AS THE ROOF PROGRESSES. THIS WILL HELP MAINTAIN MODULARITY. (REFERENCE HIGH EAVE / RIDGE DETAILS)

#### FINISH PANEL

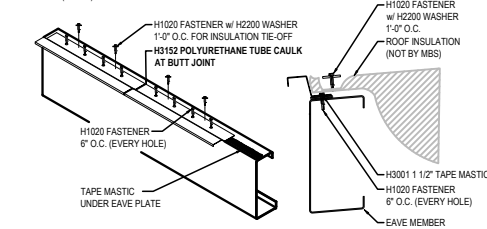
THE FINISH PANEL IS SIMILAR TO THE START PANEL INSTALLATION. THE RAKE ANGLE CLIPS AND RAKE ANGLE NEEDS TO BE INSTALLED ON TOP OF THE INSULATION PRIOR TO INSTALLING THE FINISH PANEL. THE FINISH PANEL SHOULD BE FIELD CUT AND ROLLED INTO PLACE AND SECURED TO THE RAKE ANGLE SIMILAR TO THE START PANEL.

#### TRIM INSTALLATION

TRIM INSTALLATION CAN BE DONE AFTER THE ROOF PANELS ALL HAVE BEEN INSTALLED OR CAN BE INSTALLED AS ENOUGH PANELS HAVE BEEN INSTALLED FOR ATTACHMENT OF TRIMS. (REFERENCE TRIM DETAILS)

### EAVE PLATE INSTALLATION

PLACE TAPE MASTIC ON TOP OF EAVE MEMBER PRIOR TO INSTALLING EAVE PLATE. INSTALL EAVE PLATE BY FASTENING EVERY HOLE TO EAVE MEMBER (6" O.C.) PRIOR TO INSULATION BEING INSTALLED. SECURE INSULATION WITH FASTENER & INSULATION RETAINER WASHER. NOTE: IF NO ROOF INSULATION IS USED SECURE EAVE PLATE IN EVERY HOLE (6" O.C.)

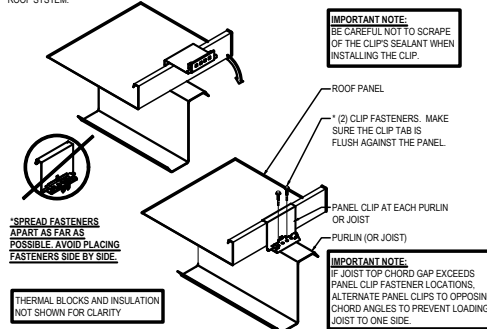


NOTE: H1020/H1070 (PURLIN/JOIST) FASTENER W/ H2200 WASHER 1'-0" O.C. FOR INSULATION TIE-OFF PROVIDED AT HIGH SIDE / RIDGE

SHORT EAVE PLATE	TALL EAVE PLATE
EPS108	BASIC EAVE / GUTTER
EPT108	BASIC EAVE / GUTTER

### PANEL CLIP INSTALLATION

BEFORE INSTALLING THE PANEL CLIP, FEEL FOR THE SUPPORT MEMBER BELOW THE INSULATION. ALIGN CLIP CENTERED OVER THE SUPPORT MEMBER AND ROLL CLIP OVER THE MALE HOOK OF THE PANEL. FASTEN CLIP WITH FASTENERS AS SPECIFIED IN THE DETAILS BASED ON THE SUPPORT MEMBER AND INSULATION UTILIZED FOR THE ROOF SYSTEM.



**IMPORTANT NOTE:**  
BE CAREFUL NOT TO SCRAPE OF THE CLIP'S SEALANT WHEN INSTALLING THE CLIP

(2) CLIP FASTENERS. MAKE SURE THE CLIP/TAB IS FLUSH AGAINST THE PANEL.

\*SPREAD FASTENERS APART AS FAR AS POSSIBLE. AVOID PLACING FASTENERS SIDE BY SIDE.

THERMAL BLOCKS AND INSULATION NOT SHOWN FOR CLARITY

#### CLIP FASTENER SELECTION

##### PURLIN APPLICATION

H1020 FOR INSULATION ≤ R-19 (6 3/8")  
H1020 FOR INSULATION = R-25 (8")  
H1220 FOR UTILITY CLIP

##### JOIST APPLICATION

H1070 FOR INSULATION ≤ R-19 (6 3/8")  
H1070 FOR INSULATION = R-25 (8")

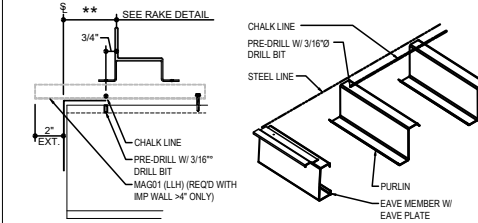
PART #	PART DESCRIPTION
H4550	UTILITY FIXED CLIP
LS5C-1	SHORT BEARING CLIP (USED WITH RIDGE BOARD)
LS5C-1	SHORT SLIDING CLIP
LS5C-2T	TALL SLIDING CLIP

### RAKE ANGLE / RAKE CLIP PREPARATION

PRIOR TO INSTALLING THE ROOF INSULATION THE SECONDARY MEMBER WILL NEED TO BE PRE-DRILLED FOR THE RAKE CLIPS. PRE-DRILLING WILL MAKE INSTALLATION OF THE RAKE AND CLIPS MUCH EASIER AFTER INSULATION IS IN PLACE. DO NOT INSTALL RAKE CLIPS UNTIL INSULATION (IF REQUIRED) IS INSTALLED. **RAKE CLIP IS INSTALLED ON TOP OF THE INSULATION.**

SNAP A CHALK LINE AS SHOWN BELOW FROM HIGH EAVE / RIDGE TO LOW EAVE. DRILL 3/16" Ø HOLE CENTERED ON SECONDARY MEMBER. THIS IS HELPS TO ALIGN THE START PANEL.

NOTE: IMP WALL PANEL >4" THICK REQUIRE ANGLES ON TOP OF SECONDARY MEMBER EXTENDED BEYOND STEEL LINE TO ALLOW FOR RAKE CLIP ATTACHMENT. ATTACH WITH (1) H1020 / H1070 TO PURLIN / JOIST PRIOR TO RAKE CLIP INSTALLATION.

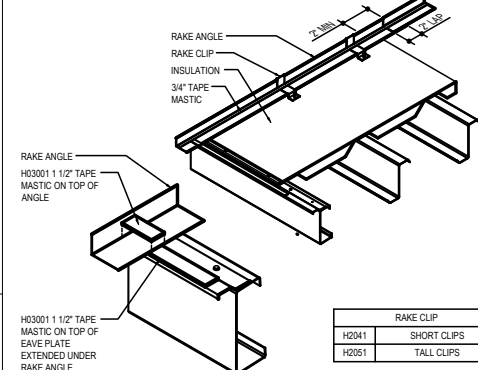


### RAKE ANGLE / RAKE CLIP INSTALLATION

AFTER INSULATION IS IN PLACE AND PRIOR TO INSTALLING THE RAKE CLIPS AND RAKE ANGLE APPLY 1 1/2" TAPE MASTIC ON TOP OF THE EAVE PLATE BUT ONLY REMOVE PAPER BACKING WHERE THE RAKE ANGLE WILL REST. THIS WILL SEAL BETWEEN THE EAVE PLATE AND THE RAKE ANGLE.

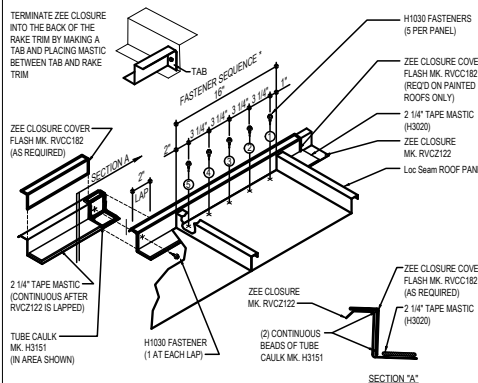
SLIDE RAKE CLIPS ONTO RAKE ANGLE PRIOR TO SECURING THE RAKE CLIPS TO THE SECONDARY MEMBERS. PLACE THE RAKE CLIPS AND ANGLE OVER THE INSULATION USING A SMALL DRIFT PIN TO LOCATE THE PRE-DRILLED HOLE. INSTALL FASTENER THROUGH OPPOSITE CLIP HOLE INTO SECONDARY MEMBER. REMOVE DRIFT PIN AND INSTALL SECOND FASTENER TO SECURE CLIP. NOTE: (2) SCREWS ARE REQUIRED IN EVERY CLIP. DO NOT CUT INSULATION OUT FROM AROUND THE CLIP.

PLACE ADDITIONAL PIECE OF 1 1/2" TAPE MASTIC ON TOP OF RAKE ANGLE AND MARRY INTO EAVE PLATE MASTIC. NEXT RUN 3/4" TAPE MASTIC ALONG BEND OF RAKE ANGLE.



RAKE CLIP	
H2841	SHORT CLIPS
H2851	TALL CLIPS

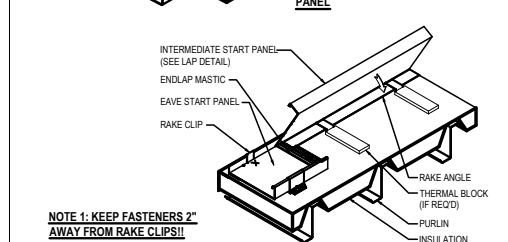
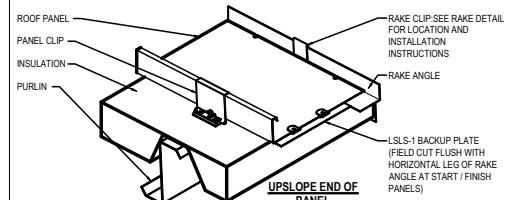
\* INSTALL FASTENERS IN EXACT SEQUENCE SHOWN TO PREVENT PANEL BUCKLING.



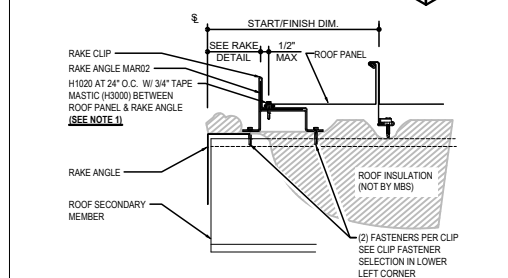
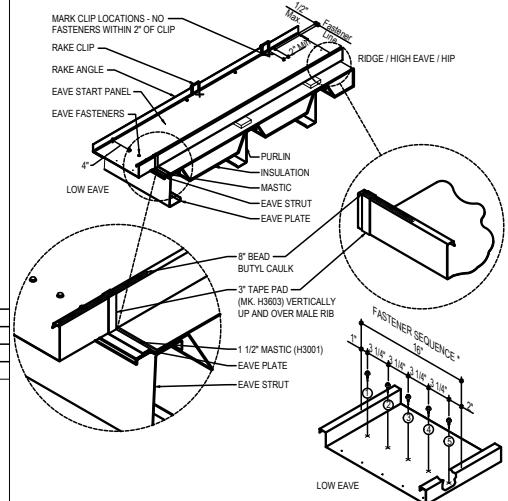
### RIDGE/HIGHSIDE ZEE CLOSURE DETAIL

### BACKUP PLATE INSTALLATION

THE BACKUP PLATE PROVIDES SUPPORT AT THE ENDLAP OF THE PANEL TO ALLOW FOR COMPRESSION OF SEALANTS. THE BACK UP PLATE HAS NOTCHES THAT SLIDE ONTO THE PANEL TO LOCATE AND HOLD THE BACKUP PLATE IN PLACE. AT THE RAKE CONDITION, THE BACKUP PLATE IS TO BE FIELD CUT FLUSH WITH THE HORIZONTAL LEG OF THE RAKE ANGLE. DO NOT EXTEND BACKUP PLATE ON TOP OF RAKE ANGLE.



**NOTE 1: KEEP FASTENERS 2" AWAY FROM RAKE CLIPS!!**



### LOC SEAM BASIC INSTALLATION DETAIL

BASIC PANEL INSTALLATION INSTRUCTIONS  
SEE ROOFLINE TRIM DETAILS FOR FURTHER INFORMATION

EA3011

### Detailer Notes:

1) THIS DETAIL REQUIRED ON EVERY VERTICAL RIB ROOF PROJECT.

EA3012 - VERTICAL RIB MODULARITY GUIDANCE

[Download the DWG file by clicking here.](#)

SPECIAL ATTENTION MUST BE GIVEN TO INSULATION SAG AND RECOMMEND PRE-DRILLING TO LOCATE CLIPS. MODULARITY TOOLS ARE AVAILABLE TO AID IN MODULARITY.

ENSURE THE INSULATION IS PERMITTED TO SAG AT MID-SPAN BETWEEN ROOF SECONDARY MEMBERS AND EXPANDED TO THE FULL THICKNESS WHILE STILL KEEPING CONTACT WITH BOTTOM OF PANEL.

DO NOT PULL THE INSULATION TAUT AS THIS WILL SIGNIFICANTLY REDUCE THE THERMAL PERFORMANCE OF THE ROOF SYSTEM AND COULD CAUSE ROOF PANEL MODULARITY ISSUES.

SINGLE OR MULT LAYERS OF FIBERGLASS BLANKET INSULATION, EXPANDED TO FULL THICKNESS

SINGLE OR MULT LAYERS OF FIBERGLASS BLANKET INSULATION, PULLED TOO TIGHT

INSULATION NOT SHOWN FOR CLARITY

MEASURE OVER 1'-4" FROM INSTALLED CLIP FASTENERS. PRE-DRILL (1) 3/8" Ø PILOT HOLE. BE SURE TO LOCATE HOLE NEAR EDGE OF PURLIN PLANGE. THIS WILL ENSURE THAT UP TO (3) FASTENERS CAN BE INSTALLED IN CLIP BASE (IF REQ'D BY DESIGN. REF. ERECTION DRAWINGS FOR FASTENER REQUIREMENTS).

USE RIB CLAMPS TO HOLD PANEL CLIPS IN PLACE, PRIOR TO FASTENING, TO MAINTAIN A CONSTANT 16" WIDE PANEL COVERAGE.

DO NOT ADJUST THE PANEL WIDTH BY MORE THAN ± 1/8" ON ANY PANEL.

RIB CLAMP (BUYOUT) MK. H7300

16" COVERAGE

±1/8" MAX.

±1/8" MAX.

CORRECT PANEL MODULARITY

ADJUSTING PANEL MODULARITY

**PANEL MODULARITY SEQUENCE**

THE PROCEDURES AND SEQUENCE SHOWN ARE RECOMMENDED TO AID IN MAINTAINING PANEL MODULARITY. THE TOOLS SHOWN ARE NOT REQUIRED BUT RECOMMENDED TO AID INSTALLATION.

**STAGE #1**

1. ROLL FIRST FULL PANEL IN PLACE AND ALIGN CENTER OF PANEL FLAT TO SQUARE AS SHOWN BELOW.
2. APPLY THE LOW EAVE CLAMP AS SHOWN TO DRAW PANEL TIGHT TO CLOSURE.
3. INSTALL THE EAVE FASTENERS STARTING AT LEADING RIB.
4. AS PANEL INSTALLATION PROGRESSES, INSTALL MORE CLAMPS UPLOPE AS SHOWN.
5. ADD, ADJUST OR LEAVE CLAMPS OFF TO MAINTAIN PANEL MODULARITY AS NECESSARY.
6. LEAVE CLAMPS ON FIRST FULL BEAM.

**STAGE #2**

1. INSTALL THE NEXT LOW EAVE PANEL AND ADD CLAMP.
2. REPEAT STEPS 2 THROUGH 6 FROM STAGE #1 NOTES.
3. LEAVE CLAMPS ON FIRST AND SECOND FULL BEAM.
4. INSTALL THE OTHER CLOSURE IN THE FIRST FULL PANEL.

**STAGE #3**

1. KEEP CLAMPS IN PLACE ON THE FIRST TWO SEAMS WITH THE EXCEPTION OF THE LOW EAVE CLAMP.
2. INSTALL THE NEXT LOW EAVE PANEL AND LEAP FROG CLAMP AS SHOWN.
3. REPEAT STEPS 2 THROUGH 5 FROM STAGE #1 NOTES.

**STAGE #4**

1. KEEP CLAMPS IN PLACE ON THE FIRST TWO SEAMS WITH THE EXCEPTION OF THE LOW EAVE CLAMP.
2. INSTALL THE NEXT LOW EAVE PANEL AND LEAP FROG THE CLAMP AS SHOWN.
3. INSTALL EAVE PLATE FASTENERS.
4. AS PANEL INSTALLATION PROGRESSES, LEAP FROG CLAMPS FROM THREE SEAMS BACK ONTO PANEL BEAM AS SHOWN.
5. MAINTAIN TWO RINGS OF CLAMPS ON PREVIOUS SEAMS AS PANEL INSTALLATION CONTINUES.
6. REPEAT ALL STEPS / STAGES OF THIS METHOD THROUGHOUT THE ROOF PANEL ERECTION.

**MODULARITY GUIDANCE**

SPECIAL ATTENTION TO ABOVE STEPS TO MAINTAIN PROPER PANEL MODULARITY AND THERMAL PERFORMANCE IS CRITICAL. FAILURE TO DO SO WILL RESULT IN UNSIGHTLY PANEL APPEARANCE.

EA3012

Detailer Notes:

1) THIS DETAIL REQUIRED ON EVERY VERTICAL RIB ROOF PROJECT.

## EA3015 - VERTICAL RIB ROOF CRIMPING NOTES

[Download the DWG file by clicking here.](#)

### IMPORTANT NOTE:

THE INSTRUCTIONS ON THIS PAGE ONLY ADDRESS THE USE OF THE HAND CRIMPING TOOLS. INSTRUCTIONS FOR MECHANICAL SEAMING, IF REQUIRED, ARE OUTLINED IN THE SEAMING MANUAL, WHICH IS INCLUDED WITH THE MECHANICAL SEAMER KIT PROVIDED BY THE SEAMER RENTAL COMPANY.

### SPECIALIZED SEAMING AND HAND CRIMPING TOOLS

THE FINISHED SEAM OF THE ROOF PANELS REQUIRES SPECIAL SEAMING TOOLS THAT ARE AVAILABLE ONLY THROUGH THE MBS. CAUTION: THE USE OF OTHER SEAMING / CRIMPING EQUIPMENT WILL RESULT IN FAULTY AND / OR DAMAGED SEAMS AND SHALL INVALIDATE ANY OF THE ROOF SYSTEM'S MATERIAL AND WEATHER TIGHTNESS WARRANTIES.

### SEAMING TOOL SOURCE

THE SEAMING TOOLS ARE PROVIDED BY MBS IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORDER DOCUMENTS. CONTACT YOUR SERVICE REPRESENTATIVE TO PURCHASE NECESSARY CRIMPING TOOLS. CONTACT THE SEAMER RENTAL COMPANY FOR RENTAL INFORMATION OF THE MECHANICAL SEAMER IF REQUIRED.

### CRIMPING & SEAMING REQUIREMENTS

THE DESIGN OF THIS STRUCTURE REQUIRES SEAMING TO MEET DESIGN AND CODE REQUIREMENTS. SEE THE SEAMING PLAN FOR ROOF PLANE SPECIFIC SEAMING REQUIREMENTS.

THERE ARE THE TWO SEAM TYPES POSSIBLE WITH THE NBG Loc Seam AS NOTED BELOW. ALL OF THESE SEAM TYPES CAN BE ACHIEVED WITH THE AVAILABLE CRIMPERS. IT IS RECOMMENDED TO RENT A MECHANICAL SEAMER TO AID IN THE SEAMING PROCESS.

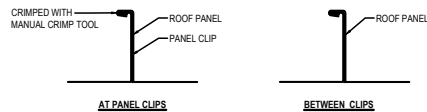
#### 1. NBG Loc Seam 90

THE Loc Seam 90 SEAM REQUIRES HAND CRIMPING THE ROOF PANEL WITH THE MANUAL SEAMING TOOL AT THE STARTING EAVE OR RIDGE END OF THE PANELS, AND AT THE END LAPS. ONCE THE HAND CRIMPING HAS BEEN COMPLETED, THEN SEAM THE FULL LENGTH OF THE ROOF PANELS WITH THE MOTORIZED SEAMING MACHINE.

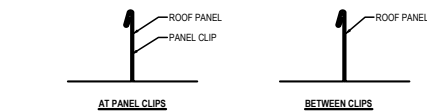
#### 2. NBG Loc Seam 360

THE Loc Seam 360 SEAM IS ACHIEVED BY RUNNING THE SINGLE DIRECTIONAL SEAMER OVER THE ENTIRE ROOF. THE ERECTOR MUST FIRST HAND CRIMP ENTIRE ROOF PANEL IN THE Loc Seam 90 SEAM WITH THE MANUAL SEAMING TOOL. BEFORE THE SEAMER IS LOCKED ON, THE LOW END OF THE PANEL MUST BE HAND CRIMPED INTO A NBG Loc Seam 360 SEAM, UTILIZING THE HAND CRIMPER THAT IS SUPPLIED IN THE SEAMER KIT. THIS WILL ENABLE YOU TO LOCK THE SEAMER ONTO THE PANEL SEAM. THEN SEAM THE FULL LENGTH OF THE ROOF PANEL.

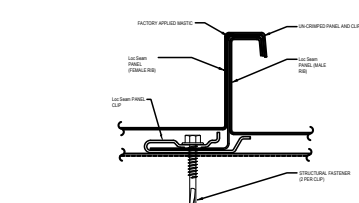
### NBG Loc Seam 90 SEAM



### NBG Loc Seam 360 SEAM



### CHECK PANEL ASSEMBLY



### SIDE LAP FIT-UP

BEFORE SEAMING, INSPECT THE FULL LENGTH OF EACH ROOF PANEL SIDE LAP. CHECK THAT THE TWO PANELS ARE PROPERLY HAND CRIMPED AT ALL CLIP LOCATIONS, LOW EAVE, HIGH EAVE AND END LAPS. ANY CONDITIONS WHERE THE PANEL IS NOT CRIMPED PROPERLY MUST BE CORRECTED BEFORE ATTEMPTING TO SEAM THE ROOF PANELS.

**UN-SEAMED ROOF PANELS CANNOT PROVIDE THEIR DESIGNED WIND LOAD AND WEATHER RESISTANCE.**

### CLIP ALIGNMENT

BEFORE CRIMPING AND / OR SEAMING, INSPECT THAT EACH ROOF PANEL CLIP IS PROPERLY ENGAGED IN THE SIDE LAP ASSEMBLY. ANY DISPLACED CLIPS MUST BE CORRECTED BEFORE ATTEMPTING TO CRIMP / SEAM THE ROOF PANELS. PANEL CLIPS THAT ARE NOT PROPERLY ENGAGED AND ALIGNED CAN CAUSE FAULTY CRIMP / SEAM AND OBJECTIONABLE SEAM APPEARANCE. **THE MBS NOR THE SEAMER RENTAL COMPANY CAN BE HELD RESPONSIBLE FOR ANY CONCERNS RELATED TO IMPROPERLY ALIGNED CLIPS.**

### SEAM DAMAGE

BEFORE CRIMPING AND / OR SEAMING, INSPECT THAT EACH ROOF PANEL MALE AND FEMALE ARE FREE FROM DISTORTION AND KINKS WHICH CAN LEAD TO DIFFICULTY AND / OR DAMAGE TO THE PANEL WHILE ATTEMPTING TO CRIMP / SEAM THE PANEL. ANY DISTORTIONS / KINKS MUST BE CORRECTED BEFORE ATTEMPTING TO CRIMP / SEAM THE PANELS. **THE MBS NOR THE SEAMER RENTAL COMPANY CAN BE HELD RESPONSIBLE FOR ANY CONCERNS RELATED TO DAMAGE CAUSED IN THE FIELD.**

### MANUAL CRIMPING TOOL OPERATION FOR Loc Seam 90 SEAM

#### ASSEMBLE THE SEAMING TOOL

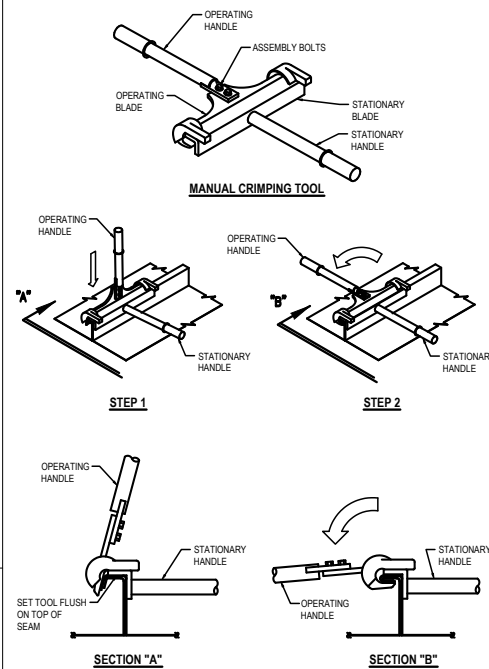
WHEN RECEIVED, THE MANUAL CRIMPING TOOL MAY BE DISASSEMBLED. ASSEMBLE THE HANDLE TO THE TOOL BODY WITH THE PROVIDED BOLTS.

#### TOOL ORIENTATION TO SEAM

ORIENT THE TOOL TO FIT CORRECTLY ON THE ROOF PANEL SEAM (SEE SECTION A BELOW). THE STATIONARY HANDLE MUST BE IN THE HORIZONTAL POSITION AND THE OPERATING HANDLE MUST BE ROTATED UP TO THE OPEN OR VERTICAL POSITION.

#### FORMING THE SEAM

WHEN THE TOOL IS CORRECTLY POSITIONED ON THE PANEL, PUSH THE STATIONARY BLADE SOLIDLY AGAINST THE TOP OF THE SEAM. WHILE HOLDING THE STATIONARY HANDLE IN THE HORIZONTAL POSITION, ROTATE THE OPERATING HANDLE DOWN TO THE HORIZONTAL POSITION. THIS WILL FORM THE SEAM (SEE SECTION B BELOW).



### MANUAL CRIMPING TOOL OPERATION FOR Loc Seam 90 SEAM CONT.

#### TOOL POSITION ON THE ROOF

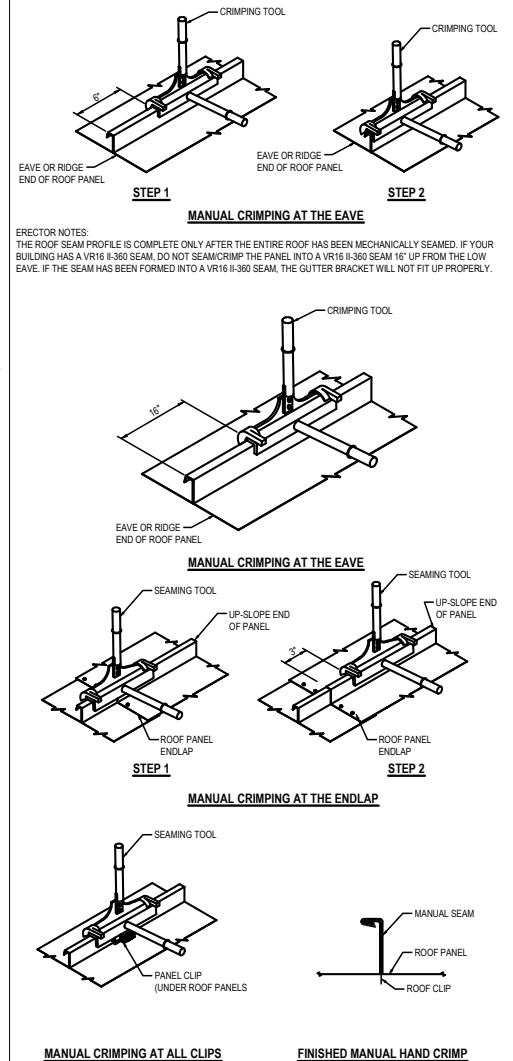
WHEN HAND SEAMING AT THE LOW EAVE, RIDGE END, END LAP AND **ALL** ROOF CLIP LOCATIONS. THE SEAMING MUST BE DONE IN TWO STEPS.

**STEP 1:** POSITION THE CRIMPING TOOL AS SHOWN BELOW IN THE VARIOUS AREAS OF THE ROOF. ROTATE THE MOVEABLE HANDLE DOWN TO FORM A Loc Seam 90 SEAM. RELEASE HANDLE.

**STEP 2:** RE-POSITION THE CRIMPING TOOL AS SHOWN BELOW AND REPEAT STEP 1.

#### CHECKING THE FINISHED SEAM

ROTATE THE OPERATING HANDLE TO THE OPEN POSITION, REMOVE THE TOOL AND CHECK THAT THE SEAM IS CORRECTLY FORMED, AS SHOWN BELOW.



LOC SEAM HAND CRIMPING NOTES  
HAND CRIMPING TOOLS AND PROCEDURES

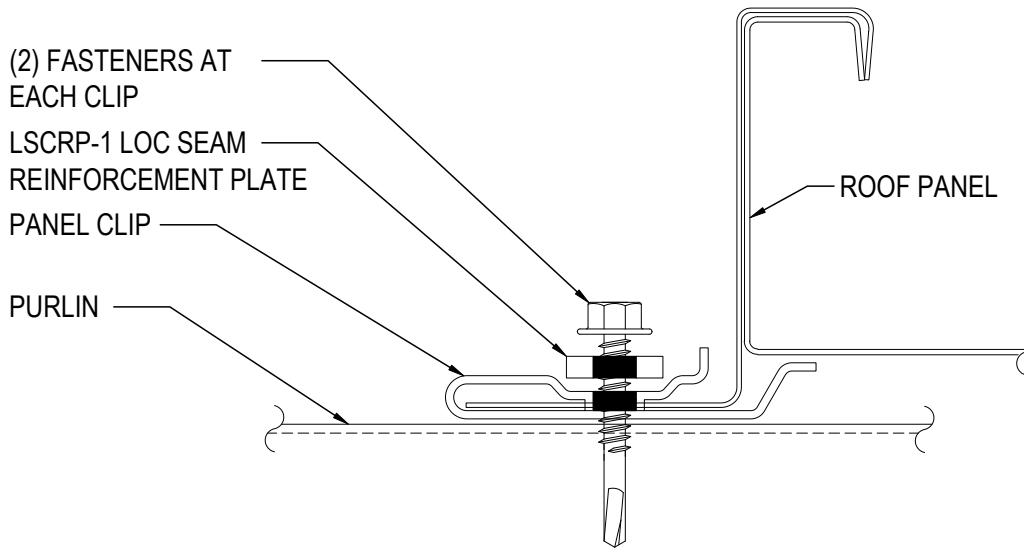
EA3015

### Detailer Notes:

1) THIS DETAIL REQUIRED ON EVERY **VERTICAL RIB** ROOF PROJECT.

EA3018 - LOC SEAM REINFORCEMENT PLATE

[Download the DWG file by clicking here.](#)



**CLIP FASTENER SELECTION**

PURLIN APPLICATION

H1020 FOR INSULATION ≤R-19 (6 3/8")

H1025 FOR INSULATION >R-19 (6 3/8")  
AND ≤R-25 (8")

JOIST APPLICATION

H1070 FOR INSULATION ≤R-19 (6 3/8")

H1075 FOR INSULATION >R-19 (6 3/8")  
AND ≤R-25 (8")

**IMPORTANT NOTE:**

IF JOIST TOP CHORD GAP EXCEEDS PANEL CLIP FASTENER LOCATIONS, ALTERNATE PANEL CLIPS TO OPPOSING CHORD ANGLES TO PREVENT LOADING JOIST TO ONE SIDE.

THERMAL BLOCKS AND INSULATION NOT SHOWN FOR CLARITY

REINFORCED CLIPS	
PART #	PART DESCRIPTION
LSEC-1	SHORT CLIP
LSEC-2T	TALL CLIP

**LOC SEAM REINFORCEMENT PLATE**

FACTORY MUTUAL APPROVED

FM CLASS 1-120 @ 5'-0" PURLIN SPACING

FM CLASS 1-180 @ 2'-6" PURLIN SPACING

**EA3018**

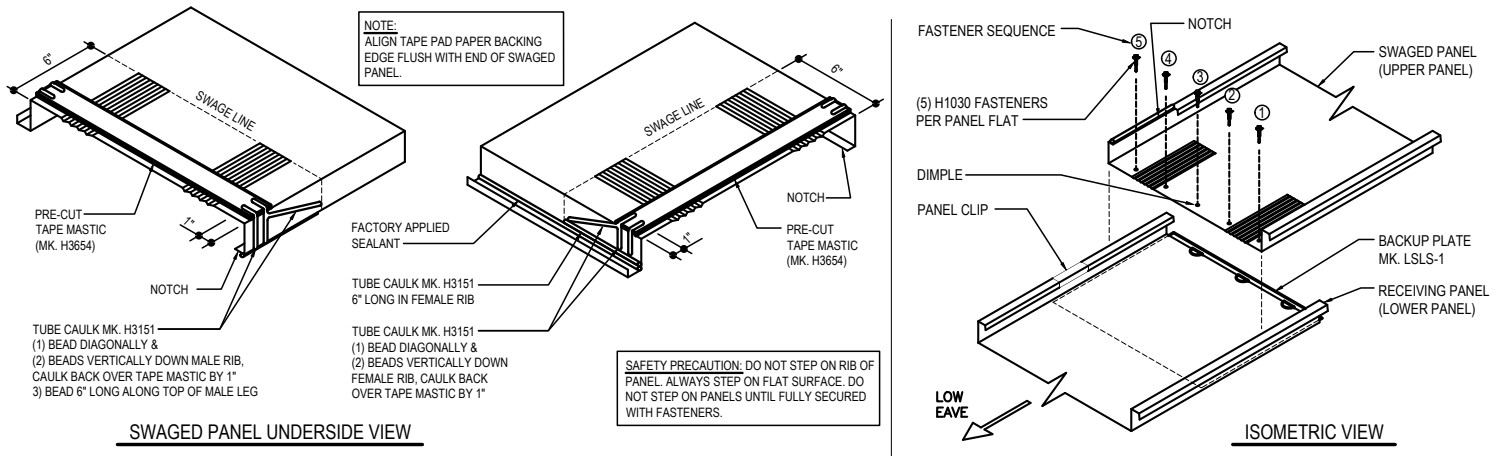
Detailer Notes:

- 1) THIS DETAIL REQUIRED ON FM 1-120 & 1-180 RATED PROJECTS. REFERENCE THE PRAC MANUAL.



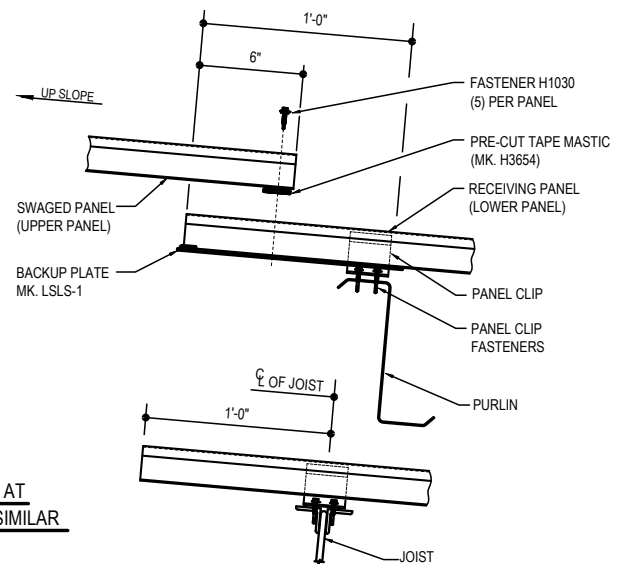
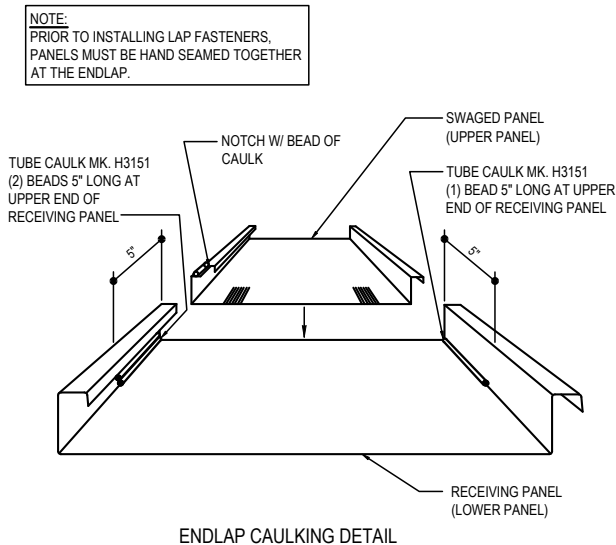
**EA3021 - VERTICAL RIB PANEL ENDLAP**

[Download the DWG file by clicking here.](#)



**NOTE:** ALL AREAS ON ALUMINUM COATED PANELS THAT REQUIRE MASTIC SHOULD BE WIPED CLEAN WITH A MILD ALL PURPOSE DETERGENT CLEANER BEFORE MASTIC APPLICATION.

- 1) WHEN ENDLAPS ARE REQUIRED THE LOWER 6 INCHES OF THE UPPER PANEL ARE SWAGED, WHICH ALLOWS FOR A BETTER LAP ON TO THE LOWER RECEIVING PANEL. THIS LAP WILL OCCUR APPROXIMATELY 12 INCHES UPSLOPE FROM A PURLIN OR JOIST RUN.
- 2) PRIOR TO SETTING THE SWAGED PANEL, INSTALL THE BACKUP PLATE ONTO THE LOWER RECEIVING PANEL AS SHOWN.
- 3) NEXT INSTALL A PIECE OF PRE-CUT TAPE MASTIC ACROSS THE WIDTH OF THE UNDERSIDE OF THE SWAGED PANEL BEGINNING AND ENDING AT THE VERTICAL SEAMS (LEGS). ALSO APPLY TUBE CAULK ON THE MALE AND FEMALE RIBS OF THE SWAGED PANEL AS SHOWN IN DETAIL ABOVE.
- 4) NEXT APPLY TUBE CAULK ALONG BOTH PANEL RIBS OF THE LOWER RECEIVING PANEL AS SHOWN IN THE ENDLAP CAULKING DETAIL.
- 5) INSTALL THE UPPER SWAGED PANEL. BOW PANEL IN THE MIDDLE DURING INSTALLATION TO AVOID SWIPING CAULK FROM THE VERTICAL LEGS OF THE PANEL AT THE ENDLAP.
- 6) NEXT SECURE THE LAP WITH (5) H1030, ROOF FASTENERS IN THE PRE-DIMPLED LOCATIONS.
- 7) HAND SEAM PANEL RIBS TOGETHER AT ENDLAP PRIOR TO MECHANICALLY SEAMING.



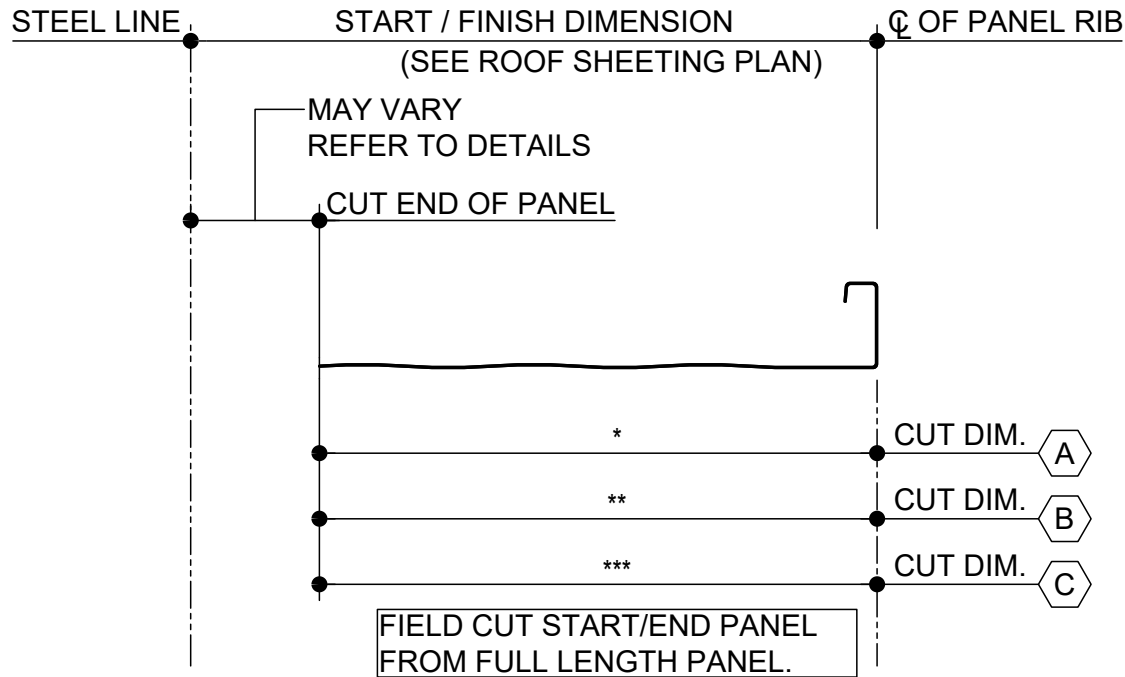
**EA3021**

**Detailer Notes:**

- 1) N/A

EA3035 - START / FINISH PANEL WIDTH DETAIL

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## START / END CUT PANEL DIMENSION DETAIL

- WHEN FIELD CUTTING OR MITERING ROOF PANELS, NON-ABRASIVE CUTTING TOOLS SUCH AS NIBBLERS OR TIN-SNIPS SHALL BE USED.
- ABRASIVE CUTTING TOOLS SUCH AS MECHANICAL GRINDERS, SAWS, SHEARS OR SCISSORS CAN DAMAGE THE PANEL FINISH AND CREATE EXCESS METAL SHAVINGS THAT CAN CORRODE THE PANELS.
- THE USE OF NON-APPROVED CUTTING DEVICES MAY VOID YOUR FACTORY WARRANTY.

**EA6035**

Detailer Notes:

- 1) THIS DETAIL IS REQUIRED ON EVERY VERTICAL RIB ROOF PROJECT.