



Installation Guidelines

DIMENSIONAL METALS, INC.

DMI has specialized in the manufacturing of Architectural Metal Panel Systems and Fabricated Architectural Sheet Metal for the construction industry for over 20 years. We use the most technologically advanced Fixed Base Roll-Forming Equipment with in house quality control so that we can offer the highest product quality available.

Please contact our Engineering Department for technical assistance.

Headquarters

58 Klema Drive North
Reynoldsburg, OH 43068

Tel: 800-828-1510
Fax: 740-927-3319

www.dmimetals.com
sales@dmimetals.com

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GENERAL INFORMATION

A.01 MATERIAL STORAGE

Keep all Dimensional Metals, Inc. prefinished materials in a dry location. Exposure to direct sunlight and / or high humidity may cause strippable plastic film to adhere to the metal permanently and discolor the finish. If the materials must be stored outdoors, slightly elevate one end of the crate to allow for water run-off. Standing water may cause discoloration to the finish.

A.02 MATERIAL HANDLING

1. Take care when handling panels to avoid panel buckling. Use one person for every 15 ft. (max) of panel length when handling panels on the ground or roof surface.
2. Panels are shipped from DMI on edge in a "nested" configuration. DMI recommends leaving the panels in this state when storing and handling.
3. When crane lifting panels onto the roof, use a spreader bar at least as long as half the panel length. DO NOT break crating apart prior to crane lifting panels or trim.

A.03 CLEAN-UP

1. Sweep entire roof. All metal debris is to be totally removed from the roof and gutter areas.
2. Remove any dirt or stains with mild detergent and water.

A.04 JOB INSPECTION

1. Inspect entire roof area. Remove any pieces of strippable film still remaining on the panels and/or flashing. Make sure all flashings are properly installed and sealed as shown on the details. Inspect all panel seams; make sure all seams are fully engaged.
2. Touch-up any minor scratches, nicks or fastener heads with DMI touch-up paint. Clean the area to be painted thoroughly; use an artist brush to apply the paint. Cover the area to be painted only- do not paint over any prefinished area.

SUBSTRATE INSPECTION

B1.01 SHEATHING INSPECTION

1. Use 5/8" minimum thickness plywood or equivalent.
2. End joints of plywood to be staggered.
3. Plywood joints to meet at a joist or rafter.
4. Blocking or "H" clips to be used if plywood joints do not remain flat under weight of workers.
5. Use shims if necessary to keep entire substrate even. Uneven substrate may result in abnormal "oil canning" in the metal roofing.
6. All cuts at penetrations to be tight with gaps no wider than 1/4 ".
7. Wood framed crickets to be used at penetrations 12" sq. or larger or when the penetration intersects one or more panel ribs.
8. All substrate joints to be tight at hips, valleys, ridges, and rake walls.

B1.02 EAVE / RAKE EDGE FASCIA INSPECTION

1. Run a staging line along the full length of the eave / rake edge fascia. If not even, correct with shims.
2. Make sure roof substrate is even at the eave / rake edge and is flush with the fascia.

B2.01 OPEN FRAMING INSPECTION

1. Consult DMI for minimum requirements for open framing member thickness and spacing.
2. Additional support may be necessary at valleys, rakes, ridges, hips and roof penetrations. Consult DMI for recommendations.
3. Framing members to be aligned with top surfaces in the same plane. Uneven members will result in abnormal "oil canning" of the panels. Members to be aligned with top surfaces in the same plane. Uneven members will result in abnormal "oil canning" of the panels.
4. Foot traffic on the panels over open framing must be avoided.

B2.02 OPEN FRAMING EAVE / RAKE EDGE FASCIA INSPECTION

1. Run a staging line along the full length of the eave / rake edge fascia. If not even, correct with shims.
2. Make sure roof surface is even at the eave / rake edge and is flush with the fascia.
3. A continuous 3" x 3" angle thickness equal to the purlin thickness is required.

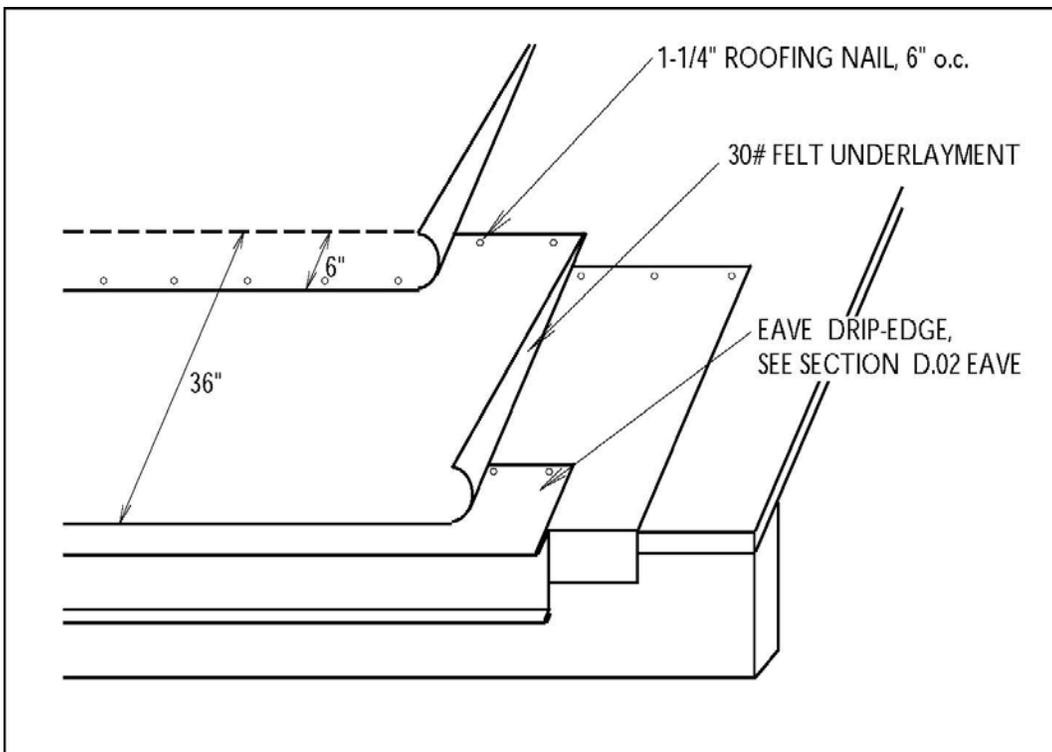
UNDERLAYMENT INSTALLATION

C1.01 FELT INSTALLATION – INFORMATION

1. Sweep roof area of debris.
2. Use 1-1/4" long flat head galvanized roofing nails for felt attachment. Do not use one-piece nail cap.
3. Follow Dimensional Metals, Inc. felting details as depicted in the panel system details.
4. Use 30 pound felt underlayment only.
5. For roof slopes less than 3:12 use Ice & Water Shield in lieu of 30# felt.

C1.02 FELT INSTALLATION

1. Install ice & water shield at valleys first.
2. Install ice & water shield parallel to eave folding 3" (min.) over the fascia.
3. Install the first row of felt over the flange of the drip edge at the eave.
4. Continue installation overlapping each row of felt 6" (min.).
5. Turn felt up vertical surfaces 3" (min.).
6. End laps to overlap 36".



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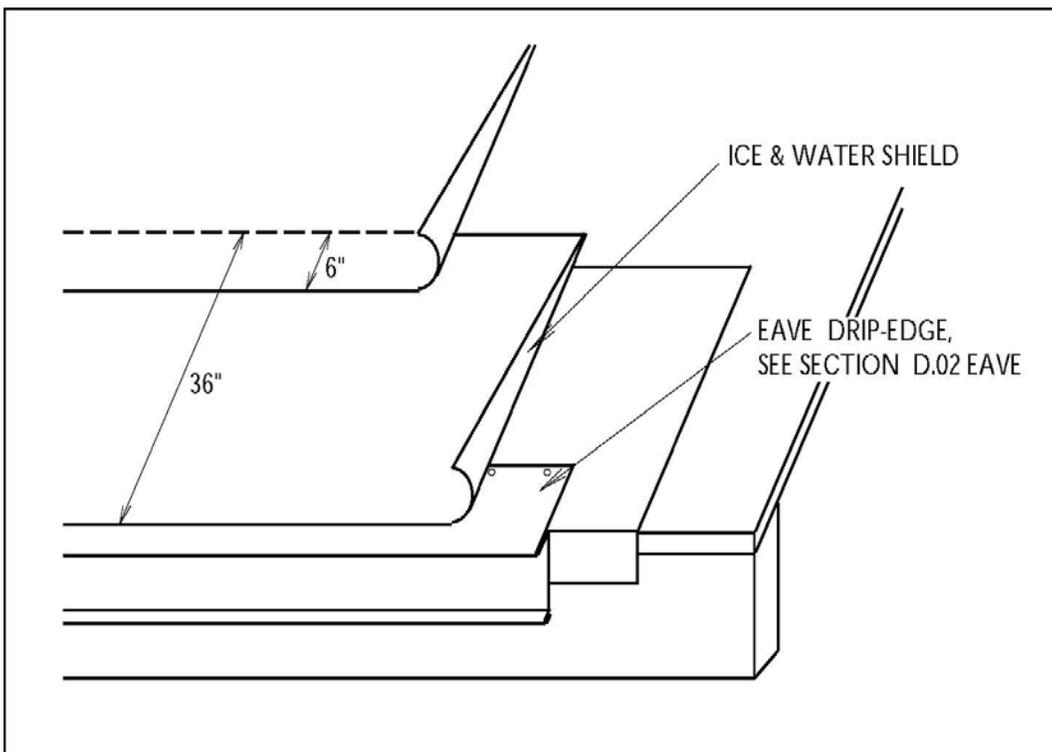
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C2.01 ICE & WATER SHIELD INSTALLATION – GENERAL INFORMATION

1. Sweep roof area of debris.
2. Follow Dimensional Metals, Inc. underlayment details as depicted in the panel system details.
3. Single-ply roofing membrane (i.e. EPDM, PVC, etc.) or modified roofing may not be used in lieu of Ice & Water Shield.

C2.02 ICE & WATER SHIELD INSTALLATION

1. Install Ice & Water Shield at valleys first.
2. Install Ice & Water Shield parallel to eave with the first ply folding over the eave and overlapping the fascia.
3. Install a second row of Ice & Water Shield over the flange of the drip edge at the eave.
4. Continue installation overlapping each row of Ice & Water Shield 6" (min.).
5. Turn Ice & Water Shield up vertical surfaces 3" (min).



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METAL FLASHING & TRIM INSTALLATION SOLID SUBSTRATE CONDITIONS

D.01 GENERAL INFORMATION

1. Remove strippable plastic film from part prior to installation.
2. Overlap adjoining parts 2", min. (or as noted otherwise) with a continuous bead of non-curing sealant between parts.
3. Fasten parts (with a roof flange) 6" o.c., (using lath head gimlet pt.wood screws.)
4. Refer to the details in each panel system section for additional information. The following instructions refer to details described in the following binder sections: Span-Lock SL25 & SL20, IL20, DL15, SS10, SS-HIGH PROFILE, BS15.

EAVE

1. Eave w/ Fascia (refer to detail 1.0, 1.1)
 - a. Install fascia over substrate.
 - b. Install underlayment at eave turning the underlayment vertically over the fascia fasteners; (see section C. UNDERLAYMENT INSTALLATION) for additional information.
 - c. Install gutter over fascia and underlayment (where applicable).
 - d. Install drip edge with vertical face covering fascia and/or gutter fasteners over the previously installed underlayment.
 - e. Install the second layer of underlayment over the drip edge roof flange.
2. Eave at Membrane Roofing (refer to detail 1.0, alt. Eave 1)
 - a. Install membrane roofing with membrane extended up slope of roof 12", min. NOTE: the membrane roofing may be terminated at the eave (follow D.02.1 instructions).
 - b. Install drip edge over the previously installed membrane roofing (or underlayment).
 - c. Install underlayment at eave over membrane roofing and drip edge roof flange; (see section C. UNDERLAYMENT INSTALLATION for additional information.)
3. Eave at Panel Break (refer to detail 1.2, alt. Eave 1)
 - a. Install underlayment over vertical area and up slope 12", min.
 - b. Install underlayment at eave turning the underlayment vertically over the previously installed underlayment; (see section C. UNDERLAYMENT INSTALLATION for additional information.)
 - c. Install vertical panel closure.
 - d. Install drip edge over underlayment with hem hooked to the previously installed closure.
 - e. Install the second layer of underlayment over the drip edge roof flange.
4. Eave - Built-in Gutter (refer to detail 1.3)
 - a. Install Ice & Water shield (or flexible membrane) underlayment in gutter trough, over forward wall and up roof slope 12", min.
 - b. Install front flashing cleat and internal gutter liner over underlayment. Apply a continuous bead of sealant over front lip of internal gutter liner and fix the rear lip of the liner to the substrate with a continuous gutter cleat. (fasteners 6" o.c., max)
 - c. Install sloped cap flashing with face hooked to the front flashing cleat and the fold rear hem around lip of internal gutter liner.
5. Eave - Built-in Gutter (refer to detail 1.3, alt. Eave 1)
 - a. Install membrane underlayment in gutter trough, over forward wall and up roof slope 12", min.
 - b. Install coping system over front wall.
 - c. Install drip edge at eave over underlayment. (Fasten 6" o.c., max.)
 - d. Install underlayment at eave over internal gutter underlayment and drip edge roof flange; (see section C. UNDERLAYMENT INSTALLATION for additional information.)

6. Eave - Built-in Gutter (refer to detail 1.3, alt. Eave 2)
 - a. Install membrane roofing gutter liner, over forward wall and up roof slope 12", min. above the water table line.
 - b. Install coping system over front wall.
 - c. Install a continuous bead of water block sealant where the panel flashing cleat fasteners will penetrate the membrane roofing gutter liner.
 - d. Install the panel flashing with the bottom hem located at the water table line.
 - e. Install the panel cleat over 2 continuous rows of butyl tape over the panel flashing. (Fasteners @ 6" o.c., max.)
 - f. Install underlayment over membrane gutter liner and flange of the panel flashing; (see section C. UNDERLAYMENT INSTALLATION for additional information.)

ZEE CLOSURE (refer to detail 2.0, 2.1, 4.3, 5.2, 6.0 - 6.3, 7.0)

1. Zee closures are typically installed at hips, ridges, aprons, peaks, rake edges, and rake walls. When installing a zee closure at a hip, ridge, apron, or peak cap, the zee is cut to fit between panel seams. When a zee closure is used at a rake edge or wall, the zee is installed continuously.
2. Determine location of zee closure by placing the ridge / hip or peak cap or apron over the panels and putting a mark on the top of the seam where the ridge / hip cap or apron covers the panel. Hold the front edge of the zee closure back 1/8" from this mark.
3. Cut zee closure to fit snug between panel seams (where applicable). Apply a continuous bead of butyl tape between the panel and zee closure.
4. Fasten zee to panel with screws running through the zee closure, butyl tape and panel into substrate. Use (4) fasteners per zee closure, min. for zee closures cut to fit between panel legs and spaced 4" o.c., max. for continuous zee closures.
Seal corners of zee and panel seam on the back side so that no sealant is showing after the cap or apron is installed.

RIDGE / HIP (refer to detail 2.0)

1. Install zee closure according to section D.01 ZEE CLOSURE.
2. Hook ridge / hip cap to one side of the zee closure.
3. Apply pressure to the ridge / hip cap away from the engaged side and inward pressure on the opposite zee closure until the two parts are hooked together. This may require more than one worker to accomplish this step.
4. Fasten the ridge / hip cap to the zee closure with stainless steel pop rivets spaced 12" o.c. max.
5. When installing a ridge / hip detail over open framing, an 18 ga., min. ridge / hip support is installed over the purlins prior to metal roofing installation.

VENTED RIDGE (refer to detail 2.1)

1. Install zee closure according to section D.01 ZEE CLOSURE.
2. Position the perforated zee with the 3" flange over the zee closure and the break of the perforated zee aligned with the top break of the zee closure; the offset in the perforated zee should be pointing up the slope of the roof. Install the perforated zee to the zee closure with 9/16" lath head self-drilling, self-tapping screws (3 per panel, min.).
3. Install the ridge vent filter horizontally over the 3" flange of the perforated zee with the wide side down and the corner of the filter at the break in the perforated zee.
4. Hook vented ridge cap to one side of the perforated zee closure.
5. Apply pressure to the vented ridge cap away from the engaged side and inward pressure on the opposite zee closure until the two parts are hooked together. This may require more than worker.
6. Fasten the vented ridge cap to the perforated zee with stainless steel pop rivets spaced

12" o.c., max.

VALLEY (refer to detail 3.0)

1. Install ice and water shield over substrate at valley (see section C. UNDERLAYMENT INSTALLATION for additional information).
2. Install valley flashing over underlayment with continuous offset panel cleats installed over 2 continuous rows of butyl tape. The offset panel cleat is positioned 5", min. from and parallel to the "w" of the valley flashing.
3. Install underlayment plies over flange of valley.
4. Overlap valley flashing 6" min. with two continuous beads of sealant between parts.

RAKE EDGE/GABLE END (refer to detail 4.0, 4.1, 4.2 (Double-Lock and Span-Lock only), 4.3)

1. Install fascia over substrate.
2. Install underlayment per the installation instructions in section C. UNDERLAYMENT INSTALLATION turning the underlayment vertically over the fascia fasteners.
3. Install continuous rake edge / gable end cleat or vertical panel closure (where applicable) over vertical underlayment.
4. Hook rake edge / gable end flashing to cleat and attach per detail used. See panel system details for additional information.

RAKE WALL

1. Masonry Wall - Continuous Sawcut Reglet (refer to detail 5.0)
 - a. Cut a continuous 3/16" wide reglet into masonry 3/4" deep. NOTE: If the reglet is cut above the roof panels 4" or less, a one-piece reglet counterflashing may be used. If the reglet is cut greater than 4" from the roof panels, a two-piece counterflashing system must be used: a counterflashing over the vertical leg of the panel and a reglet counterflashing over it (see detail 5.0, alt. Rake Wall 1).
 - b. Apply a continuous bead of sealant over the leg of the roof panel.
 - c. Install the counterflashing over the vertical panel leg and fasten to the masonry wall.
 - d. Insert the flange of the reglet counterflashing into the sawcut reglet. Anchor the flange with wedges spaced 12" o.c., max. and apply a continuous bead of sealant in the reglet. If additional anchorage is desired, exposed masonry fasteners through the counterflashing may be used provided the heads are sealed.
2. Masonry Wall - Flush Mount:
 - a. Apply a continuous bead of sealant over the leg of the roof panel.
 - b. Place counterflashing over vertical panel leg.
 - c. Install masonry fasteners through counterflashing into masonry 12" o.c., max. and seal heads of the fasteners.
 - d. Apply a continuous bead of sealant along the sealant receiver of the counterflashing.
3. Non-masonry Wall (refer to detail 5.1)
 - a. Apply a continuous bead of sealant over the leg of the roof panel.
 - b. Install counterflashing over the vertical panel leg and fasten into the plywood (fasteners are spaced 12" o.c., max.).
 - c. Install the rat guard or sill flashing over the counterflashing, covering the fasteners.
 - d. When installing a rake wall detail over open framing, an 18 ga., min. rake wall support is installed over the purlins and hat channels prior to metal roofing installation.

4. Non-masonry Wall-Apron (refer to detail 5.2)
 - a. Install zee closure according to section D.01 ZEE CLOSURE.
 - b. Hook rake apron to zee closure and fasten to wall.
 - c. Install underlayment and vertical panels or rat guard over vertical flange of the rake apron.

APRON

1. Apron (refer to detail 6.0, 6.2, 6.3)
 - a. Install zee closure according to section D.01 ZEE CLOSURE.
 - b. Hook apron to the zee closure.
 - c. Fasten the vertical flange of the apron cap to the vertical substrate.
 - d. If fasteners on the vertical flange are considered undesirable, fasten apron to the zee closure with stainless steel pop rivets spaced 12" o.c.
 - e. Install counterflashing, vertical panels or coping system over the vertical flange of the apron.
 - f. When installing an apron detail over open framing, an 18 ga., min. apron support is installed over the purlins and hat channels prior to metal roofing installation.
2. Vented Apron (refer to detail 6.1)
 - a. Install zee closure according to section D.01 ZEE CLOSURE.
 - b. Position the perforated zee with the 3' flange over the zee closure and the break of the perforated zee aligned with the top break of the zee closure; the offset in the perforated zee should be pointing up the slope of the roof. Install the perforated zee to the zee closure with 9/16" lath head self-drilling, self-tapping screws (3 per panel, min.).
 - c. Install the apron vent filter horizontally over the 3" flange of the perforated zee with the wide side down and the corner of the filter at the break in the perforated zee.
 - d. Hook vented apron cap to the perforated zee closure.
 - e. Fasten the vented ridge cap to the perforated zee with stainless steel pop rivets spaced 12" o.c.
 - f. Install counterflashing over the vertical flange of the apron.
2. Vented Apron (refer to detail 6.1)
 - a. Install zee closure according to section D.01 ZEE CLOSURE.
 - b. Position the perforated zee with the 3" flange over the zee closure and the break of the perforated zee aligned with the top break of the zee closure; the offset in the perforated zee should be pointing up the slope of the roof. Install the perforated zee to the zee closure with 9/16" lath head self-drilling, self-tapping screws (3 per panel, min.).
 - c. Install the apron vent filter horizontally over the 3" flange of the perforated zee with the wide side down and the corner of the filter at the break in the perforated zee.
 - d. Hook vented apron cap to the perforated zee closure.
 - e. Fasten the vented ridge cap to the perforated zee with stainless steel pop rivets spaced 12" o.c.
 - f. Install counterflashing over the vertical flange of the apron.

PEAK (refer to detail 7.0)

1. Install zee closure according to section D.01 ZEE CLOSURE.
2. Install the closure or flashing cleat at the rear vertical surface.
3. Hook peak cap to the zee closure and to the closure or flashing cleat.
4. Fasten the peak cap to the zee closure and closure or flashing cleat with stainless steel pop rivets spaced 12" o.c.
5. When installing a peak detail over open framing, an 18 ga., min. peak support is

installed over the purlins and hat channels prior to metal roofing installation.

EXPANSION JOINT (refer to detail 8.0)

1. Install continuous flexible membrane, extended 12" min from the expansion joint over the roofing surface, and gathered approximately twice the panel leg height.
2. Install the closure at the edge of the expansion joint. Fasten 6" o.c., max; seal heads of fasteners.
3. Engage the expansion joint cap to the closure 1/4", min. See panel system details for additional information.

EXPANSION JOINT (refer to detail 8.1)

1. Install continuous flexible membrane, extended 12" from the expansion joint over the roofing surface, up wall 6", min., and gathered approximately twice the panel leg height.
2. Install the closure at the edge of the expansion joint.
3. Engage the expansion joint apron to the closure 1/4", min. and fasten the vertical flange to
4. Install counterflashing over the vertical flange of the expansion joint apron. See sections D.05.1 and D.05.2 for additional information concerning the counterflashing.

OPEN FRAMED CONDITIONS

D.02 GENERAL INFORMATION

1. Remove strippable plastic film from part prior to installation.
2. Overlap adjoining parts 2", min. (or as noted otherwise) with a continuous bead of non-curing sealant between parts.
3. Fasten parts (with a roof flange) 6" o.c.
4. Refer to the details in each panel system section for additional information. The following instructions refer to details described in the following binder sections: Span-Lock SL25 & SL20.

EAVE (refer to detail SL1.0, SL1.1)

1. Install gutter w/ roof flange or drip edge with the roof flange extending up the slope 6" min. past the edge of the first purlin.
2. Install a continuous row of butyl tape 1/2" from the front edge of the roof flange. Install a second continuous row of butyl tape, parallel with the first row, maintaining a 1/2" space between the rows.
3. Install panels with the leading edge of the panel extending 1" past the face of the roof flange. Secure the bottom of the panel to the roof flange using a row of 1-1/4x7/8 gasketed Tech-1 stitch screws spaced 2" o.c. running between the two rows of butyl tape.
4. Apply a liberal amount of non-curing sealant between the adjoining standing seams so the sealant is visible from the end of the panels.

ZEE CLOSURE (refer to detail SL2.2)

1. Zee Closures are typically installed at hips, ridges, aprons, peaks, rake edges and rake walls. When installing a zee closure at a hip, ridge, apron or peak cap, the zee is cut to fit between panel seams. When a zee closure is used at a rake edge or wall, the zee is installed continuously. Prefabricated (pre-punched and cut to size) zee closures, for use at the ridge, are available from DMI. Fold panel leg approximately 180°.
2. Determine location of zee closure by placing the ridge / hip or peak cap or apron covers the panel. Hold the front edge of the zee closure back 1" from this mark.
3. Cut the zee closure to fit snug between panel seams (where applicable). The pre-fabricated zee closures furnished by DMI have embossed cut outs that match up with the leg of the panel. Apply a continuous row of butyl tape, centered in the closure, between the zee closure and panel.
4. Fasten the zee closure to the panel with screws running through the zee closure (pre-punched holes on the prefabricated zee furnished by DMI), butyl tape and panel Use seven (7) fasteners per zee closure, min., for zee closures cut to fit between panel legs and space 4" o.c., max. for continuous zee closures. A 1/4x7/8 Tech-1 Stitch screw is recommended for this application. Install 9/16-lath head screw through the top of the zee closure into the top-flat area of the standing seam.
5. Apply a liberal amount of non-curing sealant to the vertical legs and panel on the front side of the zee closure.
6. Install a foam rubber closure into the zee closure, top side first, allowing the sealant to act as an adhesive and secondary moisture stop.

RIDGE / HIP (refer to detail 2.1)

1. Install zee closure according to section D.02 ZEE CLOSURE.
2. Install a continuous row of butyl tape, centered on the top of the zee closure.
3. Install the ridge/hip cap over the zee closure using the original alignment marks as guides. Hip caps have to be installed with a water shedding overlap to ensure watertightness.
4. Install a row of 1/4x7/8-gasketed Tech-1 stitch screws to each side of the ridge/hip cap at 12" o.c., max. intervals.

VALLEY (refer to detail SL3.0)

1. Install sub-valley fabricated from material of equal thickness to the purlins. Extend the sides of the sub-valley 12" min. onto the support members. The edges should be fabricated so the sub-valley is lifted off the support members equal to the height the clip lifts the panel off the purlins.
2. Install the valley flashing over the sub-valley using only enough fasteners to temporarily hold it in place. Apply a liberal amount of non-curing sealant between each over lapped joint. Laps should be 6" min.
3. Install two continuous rows of butyl tape to each side of the valley approximately 6" from the center of the valley.
4. Install panels over butyl tape keeping the cut edge 5" o.c. from the center of the valley.
5. Install a row of 12x14x1-1/4" Tech-3 gasketed screws through the panel, valley & into the sub-valley 3" o.c. Center the screws in the 1/2" space between the two rows of butyl tape.
6. Install liberal amount of non-curing sealant between the adjoining standing seams so that sealant is visible from the ends of the panels.

RAKE EDGE / GABLE END (refer to detail SL4.0)

1. Install continuous zee closure as per D.02 ZEE CLOSURE.
2. Install continuous fascia cleat.
3. Starting at the eave and working up to the peak install rake edge / gable end flashing. Hook the face to the fascia cleat and secure it to the zee closure using 1/4x7/8 gasketed Tech-1 stitch screws spaced 12" o.c. (max.).

RAKE WALL (refer to detail SL5.0)

1. Install continuous zee closure as per D02 ZEE CLOSURE.
2. Starting at the eave and working up to the peak install rake wall flashing securing it to the zee closure using 1/4x7/8 gasketed Tech-1 stitch screws spaced 12" o.c. (max.).
3. Refer to section D.01 RAKE WALL-solid substrate conditions for various counter-flashing procedures.

APRON (refer to detail SL6.0)

1. Install continuous zee closure as per D.02 ZEE CLOSURE.
2. Install apron flashing securing it to the zee closure using 1/4x7/8-gasketed Tech-1 stitch screws spaced 12' o.c. (max.).
3. Refer to section D.01 RAKE WALL-solid substrate conditions for various counter-flashing procedures.

PEAK (refer to detail SL7.0)

1. Install zee closure as per D.02 ZEE CLOSURE.
2. Install continuous fascia cleat.
3. Install peak cap hooking the peak cap to the fascia cleat and securing it to the zee closure using 1/4x7/8 Tech-1 Stitch screws spaced 12" max. o.c.

EXPANSION JOINT (refer to detail SL8.0)

1. Install continuous flexible membrane, extended 12" in each direction from expansion joint and gathered approximately twice the panel leg height.
2. Install a continuous "C" channel 1/8" taller than the leg height of the standing seam.
3. Insert the panel ends into the "C" channel.
4. Install two continuous rows of butyl tape, one on top of each "C" channel.
5. Starting at the eave and working to the peak, install the expansion joint cover so it fits over the "C" channels and extends down the standing seam 21/2" (on panel seam height).

6. Install 1/4x7/8 Tech-1 Stitch screws 12" max. o.c. on each side of the expansion joint into the adjoining "C" channel.

EXPANSION JOINT (refer to detail SL8.1)

1. Install continuous flexible membrane, extended 12" in each direction from expansion joint and gathered approximately twice the panel leg height.
2. Install a continuous "C" channel 1/8" taller than the leg height of the standing seam.
3. Insert the panel ends into the "C" channel.
4. Install two continuous rows of butyl tape, one on top of each "C" channel.
5. Starting at the eave and working to the peak, install the expansion joint cover so it fits over the "C" channels and extends down the standing seam 2 1/2" (on panel seam height).
6. Install 1/4x7/8 Tech-1 Stitch screws 12" max. o.c. on each side of the expansion joint into the adjoining "C" channel.

PANEL INSTALLATION - General Information

1. Refer to section A. GENERAL INFORMATION, section B. SUBSTRATE INSPECTION, and section C. UNDERLAYMENT INSTALLATION, and section D. METAL FLASHING & TRIM INSTALLATION prior to installing panels.
2. Install panels perpendicular to the eave or ridge.
3. Remove strippable plastic film from each panel prior to installation.
4. Clip spacing varies per panel system and substrate conditions. Refer to the shop drawings for a specific project or consult DMI for additional information.
5. Fasteners
 - a. Use 1" zinc coated flat-head gimlet point (G/P) wood screws for clip attachment into wood substrates.
 - b. Use 1" zinc coated flat-head self-drilling (S/D), self-tapping screws for clip attachment into metal substrates.
 - c. Use 1" zinc coated flat-head screws for clip attachment into non-punched bearing plates and a "Concealer" type screw for clip attachment using a pre-punched bearing plate. Please check with screw manufacturer for length requirements.
 - d. Use a 12x14x1-1/2" Tech-3 screw for clip attachment to structural purlins (SL25 only).
6. Install panels snug against each adjoining panel leg. Do Not permit a gap larger than 1/16" between panel legs.
7. Any crimps in the panel legs must be straightened prior to finishing the seam, especially when installing the snap-on-seam panel systems.
8. For the mechanically seamed panel systems, single-lock the panel leg at each clip location as the panels are installed (SL20 & DL15 only. SL25 requires no hand seaming, except at zee closures). For the snap-on-seam panel systems, install the snap-on-seam after each panel is installed; do not install the panels first then install the snap-on-seams. This will result in an undesirable gain in the gap between the panel legs.

E4.01 DOUBLE-LOCK - DL15

1. General Information:
 - a. The Double-Lock DL15 panel is considered a "directional panel" meaning the panels can only be installed in one direction (left to right or right to left).
 - b. Turn panel up at the top at ridges and hips and seal corners of the fabricated "box".
 - c. Fold panel around drip edges and valley panel cleats 3/4" to 1" and fold ends of adjacent panel legs. For long panel lengths, allow a gap between the panel fillet and the end of the metal flashing to allow for expansion and contraction of the roof panels. The amount of the gap is determined by the length of the panel and the coefficient of thermal expansion and contraction of the material the panels are fabricated from. Length of panel

fold is larger for longer panel lengths to accommodate additional thermal movement of the panel. Consult DMI for additional information.

d. To double-lock the panels, single-lock about 12" of the seam from the start point, lock the mechanical seamer to the panel leg with the machine center located at the start of the seam to be crimped, turn the machine on. When the machine reaches the end of the seam, turn the machine off and unlock the machine. Attach a sturdy rope to the mechanical seamer to pull the seamer up or lower to the starting point of next seam to be mechanically crimped. It may be necessary to hand double-lock a small portion of the standing seam where the seamer is inhibited by a wall, penetration, or valley. To start mechanically seaming from a wall, penetration, or valley, hand double-lock about 12" of the seam from the obstruction; lock the mechanical seamer to the seam with the center of the machine located at the transition of hand double-locked seam to single-locked seam.

e. When panels are installed at a panel break (see det. DL-1.2), cut the panel legs at the break point and install a 2-pc. knuckle prior to mechanically seaming the roof panels.

2. Rectangular Panel Area:

a. Start panel installation at either of the two straight edges. Keep in mind the mechanical seamer will run downhill if the panels are installed from left to right.

b. When installing panels between two rake walls the last panel may need to be a special size. A special filler panel may be ordered or a vertical panel leg may be fabricated in the field.

3. Rectangular Panel Area with a Hip or Valley on one side:

a. Start panel installation at the straight edge and install panels toward the hip or valley.

b. If the panel seams must align with an adjacent panel area at the hip or valley, start panel installation at the hip or valley and install panels toward the straight edge. NOTE: When installing panels at hips or valleys, install both adjacent panel areas simultaneously to maintain alignment of the standing seams.

4. Triangular, Trapezoidal, or Parallelogram Panel Area:

a. Determine a center line perpendicular to the eave (or ridge, where applicable).

b. Mark subsequent panel widths toward one of the edges from the center line or half a panel width from the center line and begin installation from this edge toward the other edge. Periodically check the distance from the center line to the installed panels to maintain perpendicularity with the eave (or ridge).

E5.01 SNAP-ON-SEAM - SS10

1. General Information:

a. The Snap-On-Seam SS10 system is considered one of the easiest to install of the panel systems manufactured by DMI. Panel installation of this system can be started anywhere in the area in which they are installed. To minimize waste, a cut panel from a hip or valley can be used in the same area using the same angled cut.

b. Turn panel up at the top at ridges and hips and seal corners of the fabricated "box".

c. Fold panel around drip edges and valley panel cleats 3/4" to 1". For long panel lengths, allow a gap between the panel fillet and the end of the metal flashing to allow for expansion and contraction of the roof panels. The amount of the gap is determined by the length of the panel and the coefficient of thermal expansion and contraction of the material the panels are fabricated from. Length of panel fold is larger for longer panel lengths to accommodate additional thermal movement of the panel. Consult DMI for additional information.

d. Fold the ends of the snap-on-seams prior to installation. Snap-on-seams should be 3/4" longer than the finished panel leg length. Fold the end of the seam by cutting 3/4" off half of

the seam and notching the hemmed edge of the other half. Fold the remaining half around closing the open end of the seam. Carefully crimp the end of the seam to tighten the fold without distorting the seam. If desired, the finished end of the snap-on-seam may be crimped tighter after the seam is installed over the panel legs.

e. Install snap-on-seams as the panels are installed; do not install the panels first then install snap-on-seams. This will result in an undesirable gain in the gap between the panel legs. Use two (2) workers (or more depending on the length of the seam) to install the seams: one worker holding the top end of the seam at an angle above the roof surface while the other worker pushes the seam over the panel legs at the bottom. Use hand pressure or a non-marking rubber mallet to engage the remainder of the seam from the bottom to the top. Inspect the seam to be certain the entire seam is engaged.

f. When panels are installed at a panel break (see det. SS-1.2), cut the panel legs at the break point and miter the snap-on-seam over the cut.

2. Rectangular Panel Area:

a. Start panel installation at either of the two straight edges or center of the area. If starting the installation from the center, start at the center line or at half a panel width from the center line depending on what the resulting panel width is at the ends of the area.

b. When installing panels between two rake walls the last panel may need to be a special size. A special filler panel may be ordered or a vertical panel leg may be fabricated in the field.

E5.01 SNAP-ON-SEAM - SS10 - (continued)

3. Rectangular Panel Area with a Hip or Valley on one side:

a. Start panel installation at the straight edge and install panels toward the hip or valley.

b. If the panel seams must align with an adjacent panel area at the hip or valley, start panel installation at the hip or valley and install panels toward the straight edge. NOTE: When installing panels at hips or valleys, install both adjacent panel areas simultaneously to maintain alignment of the standing seams.

4. Triangular, Trapezoidal, or Parallelogram Panel Area: Determine a center line perpendicular to the eave (or ridge, where applicable) and start panel installation at this line or at half a panel width from the line.

E6.01 SS HIGH PROFILE - SS15, SS20

1. General Information:

a. The Snap-On-Seam SS HIGH PROFILE SS15 system is considered one of the easiest to install of the panel systems manufactured by DMI. Panel installation of these systems can be started anywhere in the area in which they are installed. To minimize waste, a cut panel from a hip or valley can be used in the same area using the same angled cut.

b. Turn panel up at the top at ridges and hips and seal corners of the fabricated "box".

c. Fold panel around drip edges and valley panel cleats 3/4" to 1". For long panel lengths, allow a gap between the panel fillet and the end of the metal flashing to allow for expansion and contraction of the roof panels. The amount of the gap is determined by the length of the panel and the coefficient of thermal expansion and contraction of the material the panels are fabricated from. Length of panel fold is larger for longer panel lengths to accommodate additional thermal movement of the panel. Consult DMI for additional information.

d. Fold the ends of the snap-on-seams prior to installation. Snap-on-seams should be 3/4" longer than the finished panel leg length. Fold the end of the seam by cutting 3/4" off half of the seam and notching the hemmed edge of the other half. Fold the remaining half around closing the open end of the seam. Carefully crimp the end of the seam to tighten the fold

without distorting the seam. If desired, the finished end of the snap-on-seam may be crimped tighter after the seam is installed over the panel legs.

e. Install snap-on-seams as the panels are installed; do not install the panels first then install snap-on-seams. This will result in an undesirable gain in the gap between the panel legs. Use two (2) workers (or more depending on the length of the seam) to install the seams one worker holding the top end of the seam at an angle above the roof surface while the other worker pushes the seam over the panel legs at the bottom. Use hand pressure or a non-marking rubber mallet to engage the remainder of the seam from the bottom to the top. Inspect the seam to be certain the entire seam is engaged.

f. When panels are installed at a panel break (see det. HP-1.2), cut the panel legs at the break point and install a 2-pc. knuckle over the panel legs. The snap-on-seam is mitered and installed over the 2-pc. knuckle.

2. Rectangular Panel Area:

a. Start panel installation at either of the two straight edges or center of the area. If starting the installation from the center, start at the center line or at half a panel width from the center line depending on what the resulting panel width is at the ends of the area.

b. When installing panels between two rake walls the last panel may need to be a special size. A special filler panel may be ordered or a vertical panel leg may be fabricated in the field.

3. Rectangular Panel Area with a Hip or Valley on one side:

a. Start panel installation at the straight edge and install panels toward the hip or valley.

b. If the panel seams must align with an adjacent panel area at the hip or valley, start panel installation at the hip or valley and install panels toward the straight edge. NOTE: when installing panels at hips or valleys, install both adjacent panel areas simultaneously to maintain alignment of the standing seams.

4. Triangular, Trapezoidal, or Parallelogram Panel Area: Determine a center line perpendicular to the eave (or ridge, where applicable) and start panel installation at this line or at half a panel width from the line.

E7.01 BATTEN-SEAM - BS15

1. General Information:

a. The Batten Seam systems are considered some the easiest to install of the panel systems manufactured by DMI. Panel installation of these systems can be started anywhere in the area in which they are installed. To minimize waste, a cut panel from a hip or valley can be used in the same area using the same angled cut.

b. Turn panel up at the top at ridges and hips and seal corners of the fabricated "box".

c. Fold panel around drip edges and valley panel cleats 3/4" to 1". For long panel lengths, allow a gap between the panel fillet and the end of the metal flashing to allow for expansion and contraction of the roof panels. The amount of the gap is determined by the length of the panel and the coefficient of thermal expansion and contraction of the material the panels are fabricated from. Length of panel fold is larger for longer panel lengths to accommodate additional thermal movement of the panel. Consult DMI for additional information.

d. Box the ends of the batten caps prior to installation. Batten caps should be 1-1/2" longer than the finished panel leg length. Box the end of cap by cutting the vertical legs of the batten cap 1-1/2" from the end. Make a second cut 1/2" from and parallel to the top of the batten cap. This will result in an end cap with two 1/2" tabs on each side of the cap. Fold the end cap down with the tabs either inside or outside the vertical legs of the batten cap depending on the desired effect. Fasten the 1/2" tabs to the leg of the batten cap with a

stainless steel pop rivet.

e. Install batten caps as the panels are installed; do not install the panels first then install batten caps. This will result in an undesirable gain in the gap between the panel legs. Use two (2) workers (or more depending on the length of the cap) to install the caps: one worker holding the top end of the cap at an angle above the roof surface while the other worker pushes the cap over the panel legs at the bottom. Use hand pressure or a non-marking rubber mallet to engage the remainder of the cap from the bottom to the top. Inspect the cap to be certain the entire cap is engaged.

f. When panels are installed at a panel break (see det. BS-1.2), cut the panel legs at the break point and miter the batten-cap over the cut.

2. Rectangular Panel Area:

a. Start panel installation at either of the two straight edges or center of the area. If starting the installation from the center, start at the center line or at half a panel width from the center line depending on what the resulting panel width is at the ends of the area.

b. When installing panels between two rake walls the last panel may need to be a special size.

3. Rectangular Panel Area with a Hip or Valley on one side:

a. Start panel installation at the straight edge and install panels toward the hip or valley.

b. If the panel seams must align with an adjacent panel area at the hip or valley, start panel installation at the hip or valley and install panels toward the straight edge. NOTE: When installing panels at hips or valleys, install both adjacent panel areas simultaneously to maintain alignment of the standing seams.

4. Triangular, Trapezoidal, or Parallelogram Panel Area: Determine a center line perpendicular to the eave (or ridge, where applicable) and start panel installation at this line or at half a panel width from the line.

E10.01 CURVED-RADIUS – CR-SS10

1. General Information:

2. Straight Mansard:

a. Start panel installation at either end or center of the area. If starting the installation from the center, start at the center line or at half a panel width from the center line depending on what the resulting panel width is at the ends of the area.

b. When installing panels between two rake walls the last panel may need to be a special size. A special filler panel may be ordered or a vertical panel leg may be fabricated in the field.

c. The Curved-Radius CR10 system is typically installed over 24 ga. corrugated deck (nominal 2-1/2" pitch, 11/16" depth) or hat channels spaced 20" o.c. (max).

d. Turn panel up at the top at peaks and aprons and seal corners of the fabricated "box".

e. Fold panel around drip edges and valley panel cleats 3/4" to 1". For long panel lengths, allow a gap between the panel fillet and the end of the metal flashing to allow for expansion and contraction of the roof panels. The amount of the gap is determined by the length of the panel and the coefficient of thermal expansion and contraction of the material the panels are fabricated from. Length of panel fold is larger for longer panel lengths to accommodate additional thermal movement of the panel. Consult DMI for additional information.

f. Fold the ends of the snap-on-seams prior to installation. Snap-on-seams should be 3/4" longer than the finished panel leg length. Fold the end of the seam by cutting 3/4" off half of the seam and notching the hemmed edge of the other half. Fold the

remaining half around closing the open end of the seam. Carefully crimp the end of the seam to tighten the fold without distorting the seam. If desired, the finished end of the snap-on- seam may be crimped tighter after the seam is installed over the panel legs. Install panels perpendicular to the eave or peak keeping the panel flush with the substrate.

g. The panels will tend to "walk" producing a saw-tooth effect if the panels are not installed correctly. HINT: Clamp a group of panels together over the substrate to help find the correct position of the panels at the start point. Shift the panels around until they lay flat on the substrate.

h. Install snap-on-seams as the panels are installed; do not install the panels first then install snap-on-seams. This will result in an undesirable gain in the gap between the panel legs. Use two (2) workers (or more depending on the length of the seam) to install the seams: one worker holding the top end of the seam at an angle above the roof surface while the other worker pushes the seam over the panel legs at the bottom. Use hand pressure or a non-marking rubber mallet to engage the remainder of the seam from the bottom to the top. Inspect the seam to be certain the entire seam is engaged.

i. Consult DMI for information concerning compound radius corners or other special installation applications.

3. Straight Mansard with one Corner Transition: Install the compound radius corner first then begin installation of the CR10 panels from the corner.

4. Straight Mansard with two or more Corner Transitions:

a. Install panels first, starting from the center of the straight section or from the straight to compound corner transition.

b. A compound radius corner will be fabricated to fit the resulting corner.

E11.01 V-GROOVE SOFFIT VS05

1. General Information:

a. V-Groove Soffit VS05 is typically used as a soffit panel. The VS05 system is not to be used as a water shedding roof system.

b. The V-Groove Soffit is considered a "directional panel" meaning the panels can only be installed in one direction (left to right or right to left).

c. A J-Channel is typically installed around the perimeter of a V-Groove Soffit area prior to installation. The panels are installed by shifting the panel into the J-Channel on one end then into the other channel by splitting the gap.

d. The V-Groove Soffit VS05 system may be installed over hat channels of furring strips spaced 24" o.c. (max.) or over a solid substrate.

e. Start panel installation at either end of the area. Be sure to push each panel together snug. Fasten the panel through the flange 24" o.c. (max).

f. If the panel joints are to align with an adjacent area, install each area concurrently (install 4 or 5 panels in each area at a time). NOTE: If the panel area is not square, it will be difficult to maintain aligned panel joints. The installer may want to consider changing panel installation directions for adjacent areas giving a parquet effect

TAPERED PANEL SYSTEMS

E9.01 TAPERED SEAM DOUBLE-LOCK TS DL15

1. General Information:

- a. Measure the area from eave to peak in several locations to determine if the area is out of alignment. Use shims under the sheathing and / or under the panels to correct a misaligned tapered area.
- b. Strike a line perpendicular to the eave from the installation start point.
- c. Start installation by clamping about five (5) panels together and shift the group of panels around the surface of the area at the start point until the panels are aligned properly with respect to the eave and peak. Mark the edge of each panel as they are individually removed from the area; this will serve as a guide for the start of the installation.
- d. **IMPORTANT:** periodically strike lines perpendicular to the eave to check alignment of the tapered panels with respect to the perpendicular lines as the panels are installed. If the installed panels start to misalign, skip one panel width and continue installation (install panels clips at the starting edge prior to installing the first panel after the skip). Maintain the same quantity of panels between skipped panels. **NOTE:** panel misalignment of more than 1 inch in 10 feet of panel length should not occur in less than five (5) panels. If this does occur, remove panels and start installation again (see step c.). A special filler panel will be fabricated for each skipped panel.
- e. Refer to section E4.01 DOUBLE-LOCK DL15 for additional information.

2. Conical Area (or Frustum, type.):

- a. Start installation anywhere, preferably at the most visible side.
- b. Install panel clips on the start line before installing the first panel.
- c. The last panel may need to be a special size. **HINT:** It is sometimes possible to shift the panels up or down the slope slightly to incorporate a small gain or loss in tapered panel coverage.

3. Conical Section with Gable End or Rake Walls:

- a. Start installation from straight edge.
- b. When installing panels between two rake walls, the last panel may need to be a special size. A special filler panel may be ordered or a vertical panel leg may be fabricated in the field.

4. Conical Section with Transition to Straight Area:

- a. Start installation at the center of the conical section using a special double-male leg tapered panel.

E9.02 TAPERED SEAM SNAP-ON-SEAM TS SS10

1. General Information:

- a. Measure the area from eave to peak in several locations to determine if the area is out of alignment. Use shims under the sheathing and / or under the panels to correct a misaligned tapered area.
- b. Strike a line perpendicular to the eave from the installation start point.
- c. Start installation by clamping about five (5) panels together and shift the group of panels around the surface of the area at the start point until the panels are aligned properly with respect to the eave and peak. Mark the edge of each panel as they are individually removed from the area; this will serve as a guide for the start of the installation.
- d. **IMPORTANT:** periodically strike lines perpendicular to the eave to check

alignment of the tapered panels with respect to the perpendicular lines as the panels are installed. If the installed panels start to misalign, skip one panel width and continue installation (install panels clips at the starting edge prior to installing the first panel after the skip). Maintain the same quantity of panels between skipped panels. NOTE: panel misalignment of more than 1 inch in 10 feet of panel length should not occur in less than five (5) panels. If this does occur, remove panels and start installation again (see step c.). A special filler panel will be fabricated for each skipped panel.

e. Refer to section E5.01 SNAP-ON-SEAM SS10 for additional information.

2. Conical Area (or Frustum, type.):

a. Start installation anywhere, preferably at the most visible side.

b. The last panel may need to be a special size. HINT: It is sometimes possible to shift the panels up or down the slope slightly to incorporate a small gain or loss in tapered panel coverage.

3. Conical Section with Gable End or Rake Walls:

a. Start installation from straight edge or center.

b. When installing panels between two rake walls, the last panel(s) may need to be a special size. A special filler panel may be ordered or a vertical panel leg may be fabricated in the field.

4. Conical Section with Transition to Straight Area:

a. Start installation at the center of the conical section.

E9.03 TAPERED-SEAM HIGH PROFILE - TS SS15, SS20

1. General Information:

a. Measure the area from eave to peak in several locations to determine if the area is out of alignment. Use shims under the sheathing and / or under the panels to correct a misaligned tapered area.

b. Strike a line perpendicular to the eave from the installation start point.

c. Start installation by clamping about five (5) panels together and shift the group of panels around the surface of the area at the start point until the panels are aligned properly with respect to the eave and peak. Mark the edge of each panel as they are individually removed from the area; this will serve as a guide for the start of the installation.

d. IMPORTANT: periodically strike lines perpendicular to the eave to check alignment of the tapered panels with respect to the perpendicular lines as the panels are installed. If the installed panels start to misalign, skip one panel width and continue installation (install panel clips at the starting edge prior to installing the first panel after the skip). Maintain the same quantity of panels between skipped panels. NOTE: panel misalignment of more than 1 inch in 10 feet of panel length should not occur in less than five (5) panels. If this does occur, remove panels and start installation again (see step c.). A special filler panel will be fabricated for each skipped panel.

e. Refer to section E6.01 SS HIGH PROFILE - SS15 for additional information.

2. Conical Area (or Frustum, type.):

a. Start installation anywhere, preferably at the most visible side.

b. The last panel may need to be a special size. HINT: It is sometimes possible to shift the panels up or down the slope slightly to incorporate a small gain or loss in tapered panel coverage.

3. Conical Section with Gable End or Rake Walls:

- a. Start installation from straight edge or center.
 - b. When installing panels between two rake walls, the last panel(s) may need to be a special size. A special filler panel may be ordered or a vertical panel leg may be fabricated in the field.
4. Conical Section with Transition to Straight Area:
- a. Start installation at the center of the conical section.

E9.05 TAPERED SEAM INTER-LOCK TS IL20

1. General Information:
 - a. Measure the area from eave to peak in several locations to determine if the area is out of alignment. Use shims under the sheathing and / or under the panels to correct a misaligned tapered area.
 - b. Strike a line perpendicular to the eave from the installation start point.
 - c. Start installation by placing one panel on the roof surface and shift the panel around the surface of the area at the start point until the panels are aligned properly with respect to the eave and peak.
 - d. **IMPORTANT:** periodically strike lines perpendicular to the eave to check alignment of the tapered panels with respect to the perpendicular lines as the panels are installed. If the installed panels start to misalign, skip one panel width and continue installation (install panel clips at the starting edge prior to installing the first panel after the skip). Maintain the same quantity of panels between skipped panels. **NOTE:** panel misalignment of more than 1 inch in 10 feet of panel length should not occur in less than five (5) panels. If this does occur, remove panels and start installation again (see step c.). A special filler panel will be fabricated for each skipped panel.
 - e. Refer to section E3.01 INTER-LOCK IL20 for additional information.
2. Conical Area (or Frustum, type.):
 - a. Start installation anywhere, preferably at the most visible side.
 - b. The last panel may need to be a special size. **HINT:** It is sometimes possible to shift the panels up or down the slope slightly to incorporate a small gain or loss in tapered panel coverage.
3. Conical Section with Gable End or Rake Walls:
 - a. Start installation from straight edge or center.
 - b. When installing panels between two rake walls, the last panel(s) may need to be a special size. A special filler panel may be ordered or a vertical panel leg may be fabricated in the field.
4. Conical Section with Transition to Straight Area:
 - a. Start installation at the center of the conical section.

E8.01 FLUSH-PANEL - FP10

1. General Information:
 - a. The Flush-Panel FP10 is typically used as a soffit panel or vertical siding panel. The FP10 system is not to be used as a water shedding roof system.
 - b. The Flush-Panel FP10 is considered a "directional panel" meaning the panels can only be installed in one direction (left to right or right to left).
 - c. A J-Channel is typically installed around the perimeter of a Flush-Panel area prior to installation. The panels are installed by shifting the panel into the J-Channel on one end then into the other channel by splitting the gap.

- d. The Flush-Panel FP10 system may be installed over hat channels or furring strips spaced 24" o.c. (max.) or over a solid substrate.
- e. Start panel installation at either end of the area. Be sure to push each panel together snug. Fasten the panel through the flange 24" o.c.
- f. If the panel joints are to align with an adjacent area, install each area concurrently (install 4 or 5 panels in each area at a time). NOTE: If the panel area is not square, it will be difficult to maintain aligned panel joints. The installer may want to consider changing panel installation directions for adjacent areas giving a parquet effect.

E2.01 SPAN-LOCK - SL20

1. General Information:

- a. The Span-Lock SL20 panel is considered a "directional panel" meaning the panels can only be installed in one direction (left to right or right to left).
- b. Turn panel up at the top at ridges and hips and seal corners of the fabricated "box".
- c. Fold panel around drip edges and valley panel cleats 3/4" to 1" and fold ends of adjacent panel legs. For long panel lengths, allow a gap between the panel fillet and the end of the metal flashing to allow for expansion and contraction of the roof panels. The amount of the gap is determined by the length of the panel and the coefficient of thermal expansion and contraction of the material the panels are fabricated from. Length of panel fold is larger for longer panel lengths to accommodate additional thermal movement of the panel. Consult DMI for additional information.
- d. To crimp the panels lock the mechanical seamer to the panel leg with the machine center located at the start of the seam to be crimped, turn the machine on. When the machine reaches the end of the seam, turn the machine off and unlock the machine. Attach a sturdy rope to the mechanical seamer to pull the seamer up or lower to the starting point of next seam to be mechanically crimped. It may be necessary to hand crimp a small portion of the standing seam where the seamer is inhibited by a wall, penetration, or valley. To start mechanically seaming from a wall, penetration, or valley, hand crimp about 12" of the seam from the obstruction; lock the mechanical seamer to the seam with the center of the machine located at the transition of hand crimped seam to uncrimped seam.
- e. When panels are installed at a panel break (see det. SL-1.2), cut the panel legs at the break point and install a 2-pc. knuckle prior to mechanically seaming the roof panels.

2. Rectangular Panel Area:

- a. Start panel installation at either of the two straight edges.
- b. When installing panels between two rake walls the last panel may need to be a special size. A special filler panel may be ordered or a vertical panel leg may be fabricated in the field.

3. Rectangular Panel Area with a Hip or Valley on one side:

- a. Start panel installation at the straight edge and install panels toward the hip or valley.
- b. If the panel seams must align with an adjacent panel area at the hip or valley, start panel installation at the hip or valley and install panels toward the straight edge. NOTE: When installing panels at hips or valleys, install both adjacent panel areas simultaneously to maintain alignment of the standing seams.

4. Triangular, Trapezoidal, or Parallelogram Panel Area:

- a. Determine a center line perpendicular to the eave (or ridge, where applicable).
- b. Mark subsequent panel widths toward one of the edges from the center line or half a panel width from the center line and begin installation from this edge toward the other edge. Periodically check the distance from the center line to the installed panels to maintain perpendicularity with the eave (or ridge).

E3.01 INTER-LOCK - IL20

1. General Information:

- a. The Inter-Lock IL20 panel is considered a "directional panel" meaning the panels can only be installed in one direction (left to right or right to left).
- b. Turn panel up at the top at ridges and hips and seal corners of the fabricated "box".
- c. Fold panel around drip edges and valley panel cleats 1.5" and fold ends of adjacent panel legs. For long panel lengths, allow a gap between the panel fillet and the end of the metal flashing to allow for expansion and contraction of the roof panels. The amount of the gap is determined by the length of the panel and the coefficient of thermal expansion and contraction of the material the panels are fabricated from. Length of panel fold is larger for longer panel lengths to accommodate additional thermal movement of the panel. Consult DMI for additional information.
- d. When panels are installed at a panel break (see det. IL-1.2), cut the panel legs at the break point and install a 2-pc. knuckle prior to mechanically seaming the roof panels.

2. Rectangular Panel Area:

- a. Start panel installation at either of the two straight edges.
- b. When installing panels between two rake walls the last panel may need to be a special size. A special filler panel may be ordered or a vertical panel leg may be fabricated in the field.

3. Rectangular Panel Area with a Hip or Valley on one side:

- a. Start panel installation at the straight edge and install panels toward the hip or valley.
- b. If the panel seams must align with an adjacent panel area at the hip or valley, start panel installation at the hip or valley and install panels toward the straight edge. NOTE: When installing panels at hips or valleys, install both adjacent panel areas simultaneously to maintain alignment of the standing seams.

4. Triangular, Trapezoidal, or Parallelogram Panel Area:

- a. Determine a center line perpendicular to the eave (or ridge, where applicable).
- b. Mark subsequent panel widths toward one of the edges from the center line or half a panel width from the center line and begin installation from this edge toward the other edge. Periodically check the distance from the center line to the installed panels to maintain perpendicularity with the eave (or ridge).

E1.01 SPAN-LOCK - SL25

1. General Information:

- a. The Span-Lock SL25 panel is considered a "directional panel" meaning the panels can only be installed in one direction (left to right).
- b. Turn panel up at the top at ridges and hips and seal corners of the fabricated "box". (Architectural style details only.)
- c. Fold panel around drip edges and valley panel cleats 3/4" to 1", and fold ends of adjacent panel legs. For long panel lengths, allow a gap between the panel fillet and the

end of the metal flashing to allow for expansion and contraction of the roof panels. The amount of the gap is determined by the length of the panel and the coefficient of thermal expansion and contraction of the material the panels are fabricated from. Length of panel fold is larger for longer panel lengths to accommodate additional thermal movement of the panel. Consult DMI for further information.

d. To crimp the panels lock the mechanical seamer to the panel leg with the machine center located at the start of the seam to be crimped. Turn the seamer on. When the seamer reaches the end of the seam, turn the machine off and unlock the machine. A sturdy rope should be securely attached to the seamer prior to seaming and securely attach the opposite end of the rope to the ridge. This will prevent the seamer from falling off the roof. It may be necessary to hand crimp a small portion of the standing seam where the seamer is inhibited by a wall, penetration or valley. To start mechanically seaming from a wall, penetration or valley hand crimp about 12" of the seam from the obstruction; lock the mechanical seamer to the seam with the center of the seamer located at the transition of the hand crimped seam to the uncrimped seam.

e. When panels are installed at a panel break (see det. S1-1.2), cut the panel legs at the break point and install a 2-pc. Knuckle prior to mechanically seaming the roof panels.

2. Rectangular Panel Area:

a. Start panel installation at either of the two straight edges.

b. When installing panels between two rake walls the last panel may need to be a special size. A special filler panel may be ordered or a vertical panel leg may be fabricated in the field.

3. Rectangular Panel Area with a Hip or Valley on one side:

a. Start panel installation at the straight edge and install panels toward the hip or valley.

b. If the panel seams must align with an adjacent panel area at the hip or valley, start panel installation at the hip or valley and install panels toward the straight edge.

NOTE: when installing panels at hips or valleys, install both adjacent panel areas simultaneously to maintain alignment of the standing seams.

4. Triangular, Trapezoidal or Parallelogram Panel Area:

a. Determine a centerline perpendicular to the eave (or ridge, where applicable).

b. Mark subsequent panel widths toward one of the edges from the centerline or half a panel width from the centerline and begin installation from this edge toward the other edge. Periodically check the distance from the centerline to the installed panels to maintain perpendicularity with the eave (or ridge).