



CSSBI

HOW TO SERIES



Preface

One of the objectives of the CSSBI and its members is the development of standards and technical publications that promote safety, performance and good practice. This "How To Series" of publications is an educational tool intended to give guidance to anyone specifying sheet steel building products. This particular publication is published as an aid to building owners as well as roofing and siding installers. It offers simple and practical recommendations for the selection, application and installation of lightgauge steel cladding.

This is a generic guide giving the basic details and should only supplement the specific recommendations or guidance published by the manufacturer appropriate to their own products. The views expressed in this guide are a collection of installation techniques and do not necessarily reflect those of all member companies of the CANADIAN SHEET STEEL BUILDING INSTITUTE.

The material presented in this publication has been prepared for the general information of the reader. While the material is believed to be technically correct and in accordance with recognized good practice at the time of publication, it should not be used without first securing competent advice with respect to its suitability for any specific application. Neither the CANADIAN SHEET STEEL BUILDING INSTITUTE nor its Members warrant or assume liability for the suitability of this bulletin for any general or particular application.

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CANADIAN SHEET STEEL BUILDING INSTITUTE

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S14-2000
 ISBN 1-895535-13-1



Introduction

Lightgauge steel roofing and siding (referred to as “cladding”) is used as the covering on many buildings, often over wood frame structures in agricultural applications. The use of these products, however, is extending more into light commercial projects where the benefits of the lightgauge products are also being utilized. The appearance and service life of the steel roofing and siding can be enhanced by following proper installation procedures as described in this guide.



This guide assumes that the building structure is suitably engineered and that the building is square. For agricultural applications, the *Canadian Farm Building Handbook* published by the Research Branch of Agriculture Canada and the *Construction Guide for Farm Buildings* published by the Ontario Housing and Building Development Branch are available as references. Light commercial and industrial buildings must be designed by a professional engineer or architect. Buildings that use lightgauge steel roofing and siding must comply with all relevant aspects of the applicable Provincial and local Municipal building codes. All installations require approval by the appropriate building official.

This publication deals with the selection and installation of lightgauge sheet steel cladding in single skin applications (i.e. without an interior liner sheet or insulation). For information on insulated sheet steel assemblies, consult the CSSBI publication S10-1997, *How To Series: Insulated Sheet Steel Wall Assemblies* and S11-2000, *How To Series: Insulated Sheet Steel Roof Assemblies*.

Please read this guide completely before beginning any installation. Planning now can save a lot of time and effort later.

Why Use Lightgauge

SHEET STEEL PRODUCTS

Sheet steel is a material that is exceptionally durable, yet has the versatility to fulfil the most demanding and innovative designs.

Prepainted sheet steel is **versatile**. It is available in a wide range of thicknesses and profile shapes. It is easily integrated with other building materials and can be manufactured to meet the loading requirements of any building.

Prepainted sheet steel is **durable**. Coating systems have been developed and proven over the past 35 years in a diverse range of environmental conditions. Prepainted sheet steel has been successfully incorporated into numerous types of structures across North

America, from the extreme climatic fluctuations of the prairies, to the highly corrosive environments of heavy industry, to severe conditions in coastal maritime locations.

Prepainted sheet steel is **colourful**. A rainbow of possibilities allows creative opportunities to design projects with a palette of colours as diverse as the imagination. The choices are virtually limitless, providing the ability to design colour into a building so it stands out on the horizon or blends into the neighbourhood. Corporate colours can be matched to establish a client’s image, or just a touch of colour can be added to heighten the aesthetics of the project.





Prepainted sheet steel is **economical**. It offers the economies of a lightweight roll formed product allowing structures to be designed using economical components with the added advantage of having the flexibility of incorporating efficient insulation packages into the building envelope. Thanks to the versatility and range of quality prefinished sheet steel profiles, there are panel systems available to accommodate any budget.

therefore, the steel core must be separated from the environment. The first line of protection for the steel is supplied by the metallic coating, one of the most effective methods of protecting bare steel from corrosion. Both zinc and aluminum-zinc alloy coatings provide a tough, non-porous metallic coating that does not allow moisture to come in contact with the steel.



Besides acting as a protective barrier, the metallic coating is able to "sacrifice" itself to protect the underlying sheet steel if both metals are exposed, like at a cut edge or a scratch. Sacrificial protection occurs when two dissimilar metals are in electrical contact and are coupled with water and oxygen. Under most conditions, zinc can protect exposed steel or cut

edges up to 1/16 inch in width. A more in-depth description of the "sacrificial" protection process can be found in many engineering materials handbooks.

Material Selection

All lightgauge sheet steel building products have one thing in common: they are fabricated from metallic coated, quality controlled, sheet steel. This material can also be prepainted for additional corrosion protection and enhanced aesthetics. Each component of the steel sheet (steel core, metallic coating, and organic coating) is important to the service life of the finished product. There is a range of steel properties and coatings that provide flexibility in specifying the appropriate material. It is important to select the coatings to suit the anticipated environmental conditions and budget.

Steel Core: A sheet steel cladding profile is an engineered product and must be manufactured from sheet steel with certified structural properties. The data sheets available from the manufacturer will list the relevant material specifications and allowable spans. The steel core of the sheet is available in a range of thicknesses and strength levels to accommodate varying structural requirements.

Metallic Coatings: It is important that corrosion of the steel be minimized and not allowed to affect the structural integrity and aesthetics of the product;

The aluminum-zinc alloy coating also provides similar sacrificial and barrier type protection of the steel, as described above. Aluminum-zinc alloy coated sheets are not recommended for use in swine enclosures.

Metallic coatings are applied to steel sheet by the hot-dip process and are offered in a range of coating weights. The most common coatings specified for exterior applications are G90 (galvanized) or AZ50 (Galvalume™). For interior applications a lighter coating may be appropriate depending on the environmental conditions. The CSSBI publishes information on recommended coatings that can be used as a selection guide. A list of current publications can be obtained from the web site at www.cssbi.ca.

Zinc and aluminum-zinc alloy coated sheet steel is a popular construction material by itself. For maximum corrosion protection, however, a paint coating should be added to provide both colour and an extra barrier to atmospheric corrosion. The organic top coat (paint) inhibits water and oxygen from reaching the underlying metallic coated sheet steel, thus effectively minimizing the corrosion process.



Prefinished Coatings: "Prefinished" means the sheet steel has been painted before it is roll formed into the cladding profile. Prefinishing is done in a factory applied coil-coating process where paint is applied in a precise, multi-step process. The resulting baked-on paint coating meets very severe corrosion protection requirements and aesthetic demands.

Prefinished sheet steel is normally supplied with a full paint coat on the top-side (pre-treatment, primer and top coat) and a pre-treatment plus wash coat on the reverse side. This wash coat, which protects the top side during recoiling, is compatible with the top coat but is thinner. A colour-controlled wash coat is recommended for single skin applications where the inside surface of the sheet will be visible. The sheet can also be produced with a full paint coat on both sides. It is important to note that although different colours can be ordered on either side, the paint system must be the same type.

Since the mid-1960's, prefinished sheet steel cladding has demonstrated exceptional durability right across Canada, thanks to a highly efficient combination of coatings. There are different prefinished sheet steel systems available for exterior use. Consult the sheet steel fabricator member for details on paint systems and colours.

Selecting a Lightgauge Steel Cladding Profile

There are many lightgauge steel cladding profiles available, not all of which are suitable for every application. The selection of the proper profile and sheet thickness will depend upon the strength needed to support the loads as well as the profile and colour to satisfy the aesthetics. Some profiles are designed primarily for roof applications while others are intended



more for walls. The product literature from the cladding manufacturer, available through the distributor, will provide relevant information.

There are a number of general types of profiles defined by the size and spacing of the ribs. Profiles with a low rib (less than 3/4" high) are generally not as strong as the same thickness of a high-ribbed product. A high-ribbed profile (ribs higher than 3/4") is more suited to lower slope roofs where the high rib will make a stronger roof to resist higher snow loads, and allow more standing water. Talk to your lightgauge steel cladding distributor (e.g. building material supplier or lumber yard); they will be able to help you select the profile, material, and accessories to suit your needs.

It is recommended that the cladding selected be manufactured by a company who is a member of the CANADIAN SHEET STEEL BUILDING INSTITUTE. This will provide assurance to the purchaser that the product is manufactured to industry standards of quality and performance for lightgauge steel cladding.



Visual Design

The architectural and aesthetic considerations that affect the building are classified as the "visual design". The visual design is mainly concerned with the exterior cladding elements and there are a number of issues of significance.



The shape of the profile will affect the look of the building. There are a wide variety of profiles available from the different manufacturers. The profiles can be combined to create different textures over the building. Accent strips and flashings can also add to the visual appeal, especially if co-ordinating colour combinations are used effectively.

Orientation of the profile also influences the look of the building. Cladding products can be installed horizontally, vertically or at an angle. There are limits, however, to the horizontal applications without some special attention. Some products may be susceptible to oil canning or will trap water in the flutes if placed horizontally. Consult the cladding fabricator for guidance.

Colour selection is one of the most significant decisions in the visual design process. The choice of primary and accenting colours used for the cladding, trims and accessories will determine the look of the building. Contact the cladding fabricator for a colour chart that gives a range of available colours.

Accessories such as flashings, accent trims, doors and windows affect the overall look of the building. These items can be highlighted to enhance the visual appeal of the building or they can be subdued.

Interfacing with other materials is easily done with lightgauge steel cladding products. Brick, masonry, wood and other materials can be integrated into the overall building envelope to develop simple or striking architectural features.

Strength Design

The design of the lightgauge steel cladding components is engineered by the fabricator. Span tables, available for all roofing and siding profiles, are used to select the proper profile/thickness for the anticipated loads.

The spacing of the supporting purlins or rafters, combined with the anticipated snow and wind loads, will determine the profile type and steel thickness. For the specific building location it is important to compare the anticipated loads with the span table for the particular manufacturer's profile being considered. The cladding sheet also needs to be designed to resist wind uplift, which may affect the maximum purlin spacing. The snow and wind loads on a roof will change with the roof pitch and the addition of valleys or dormers. These loads are available from the appropriate building code or local building official. Cladding profiles are also available in different strengths of steel that will have different span tables.

Sheet lengths are manufactured to order for the project and one of the advantages of sheet steel is the long lengths available. It is desirable where practical to use a single sheet from top to bottom, however, consideration must be given to profile and thickness to accommodate material handling, transportation and erection. The longer lengths may have consequences on the economy of the project where exceptional handling is required to produce a quality installation. For maximum sheet lengths, consult the cladding fabricator.





Accessories

Members of the CANADIAN SHEET STEEL BUILDING INSTITUTE who manufacture lightgauge steel cladding also offer a complete line of accessories to ensure a weathertight building and enhanced appearance. Products that are classified as accessories include: foam closure strips, trims, flashings, fasteners, roofing penetrations and curbs.

Quantity Estimating

(a) Estimating Roof Sheets:

When the roofing sheet is one piece from the eave to ridge, use the following formula to determine the number of sheets needed to cover one area of roof. Depending on the shape of the roof, this calculation must be done for each area with totals added together to determine the overall quantity.

$$N = \frac{R \times 12}{c}$$

where: N = Number of sheets per roof area
R = Length of ridge (ft)
c = sheet coverage width (in)



(b) Estimating Roof Sheet Lengths:

The slope of the roof will determine the length of the roof sheets from eave to ridge. Figure 1 can help calculate this sheet length using the horizontal length from eave to ridge along with the roof slope. If more than one sheet is needed to cover the length, allow an extra 6 in. for the end lap.

(c) Estimating Wall Sheets:

The same formula used in determining the number of roof sheets is also used for wall areas. Small openings, man doors and windows should be included in the calculation of coverage area. In some cases where there are a large number of windows or other large openings (e.g. vents, fans or louvres) the number of sheets should be counted one by one to minimize the waste of material. Large sliding doors should be excluded from area calculations unless they are to be covered with the same material.

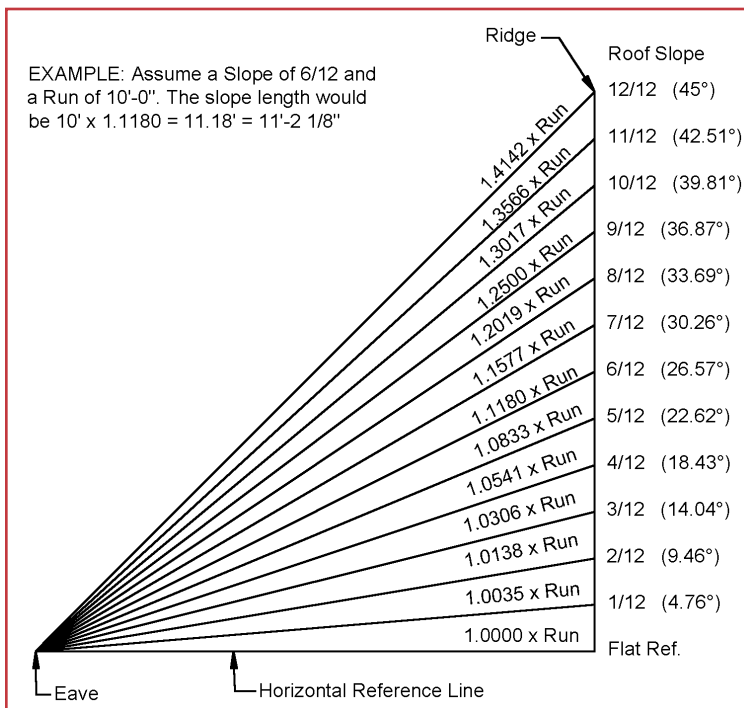


FIGURE 1 Determining sheet lengths for various roof pitches

(d) Estimating Fasteners:

Use the following chart to estimate the number of fasteners (per 100 square feet) needed for the project based on the support and fastener spacing.

Support Spacing	Fastener Spacing		
	6" o.c.	9" o.c.	12" o.c.
18"	145	100	75
24"	110	75	55
30"	90	60	45
36"	80	55	40
42"	70	45	35
48"	60	40	30
54"	55	40	30
60"	50	35	25



Storage of Lightgauge Steel Cladding

If lightgauge steel cladding must be stored for an extended period of time, the most desirable place is under roof in a cool, dry, well-ventilated area. When storing indoors, the cladding bundles should be uncovered to ensure air circulation.

When outdoor storage is unavoidable, the following is recommended:

- (a) block bundles off ground for effective drainage and ventilation;
- (b) block under long bundles to prevent sagging;
- (c) elevate one end of bundles for drainage;
- (d) use good quality covers (*other than plastic*) loosely shrouded over cladding bundles and anchored to prevent wind blow-off;
- (e) store away from chemically aggressive substances (*salt, cement, fertilizer*), material that could contaminate the cladding surface (*diesel oil, paint, grease*), and site traffic.

Fasteners

Fasteners are a very important part of any building and several Canadian companies supply good quality products. Screws are recommended for their better holding power and sealing. Screws should be installed to firmly hold the cladding to the structure, but must not be overdriven since this will cause the washers to squeeze out or dent the cladding. Adjustable torque screw guns are the best method of ensuring that the screw fasteners are consistently installed to the proper torque.

The number and placement of fasteners will vary depending on the structure being covered. Generally, it is recommended to stitch fasten every 24" along the seam between panels and every 12" to 18" across the panel width where the panel overlaps a support. This requirement may vary, however, since different profiles require different numbers of fasteners. Consult the cladding manufacturer's specific product literature.

Venting

Light Commercial Buildings

Many light commercial buildings are insulated for human comfort and need to incorporate an effective air/vapour retarder to control the flow of air and moisture. It is recommended that a



minimum 15 pound felt or slip sheet be included between the steel roofing and the roof sheathing. Alternatively, an air space can be provided under the cladding sheet. For more discussion on recommended detailing of insulated sheet steel wall and roof assemblies, consult the lightgauge steel cladding manufacturer.

Agricultural Buildings

Ventilation is a positive step toward adding life to a building and providing a healthier environment for livestock. By reducing summer heat and preventing condensation in winter, buildings will both perform better and last years longer.

Every animal confinement building contains significant quantities of moisture vapour created by various activities and by the normal respiration of livestock. Some of this vapour can condense on the cladding or structure and lead to premature corrosion. Unventilated attic spaces can reach temperatures of 50°C or more on hot summer days. This heat passes on to the livestock below creating potential health problems. Positive ventilation will reduce this condition.

A general rule of thumb is to provide at least 1 sq. ft. of unrestricted inlet area at the eaves for every 600 sq. ft. of ceiling area with an equivalent unrestricted area of peak





exhaust. Figure 2 illustrates how a perforated soffit and a ridge ventilator are used to achieve proper ventilation. The advantages of a forced air ventilation system should be discussed with a qualified engineer. Consult the *Canadian Farm Building Handbook* or the *Construction Guide for Farm Buildings* for additional design guidance or your ventilation and soffit manufacturer for their air flow charts for your particular size of building.

Trims and Flashings

The types of trims and flashings normally used vary among regions in Canada and among manufacturers: however, there are certain standard flashings that can be used to give your building the desired finished appearance.

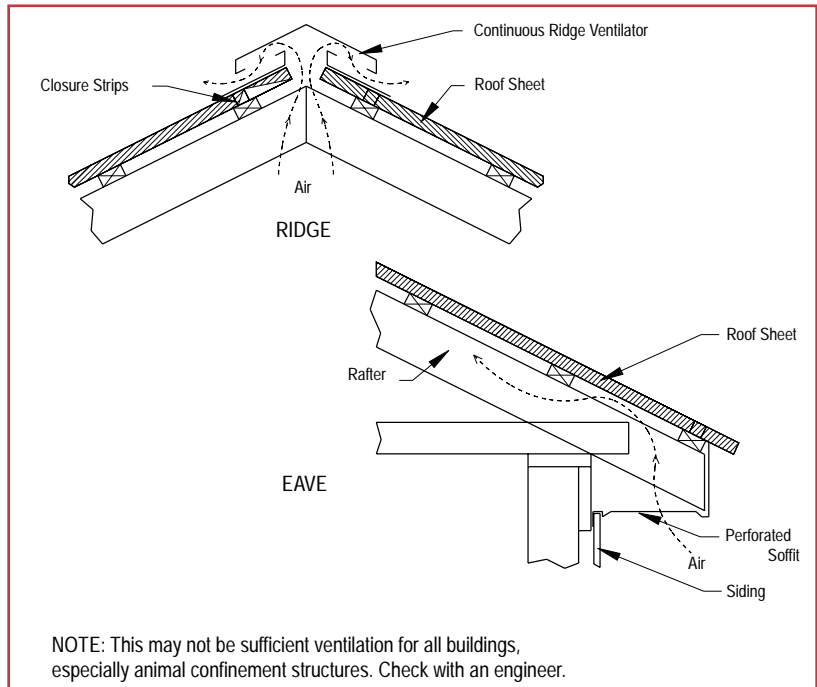


FIGURE 2 Ventilation under roof sheets

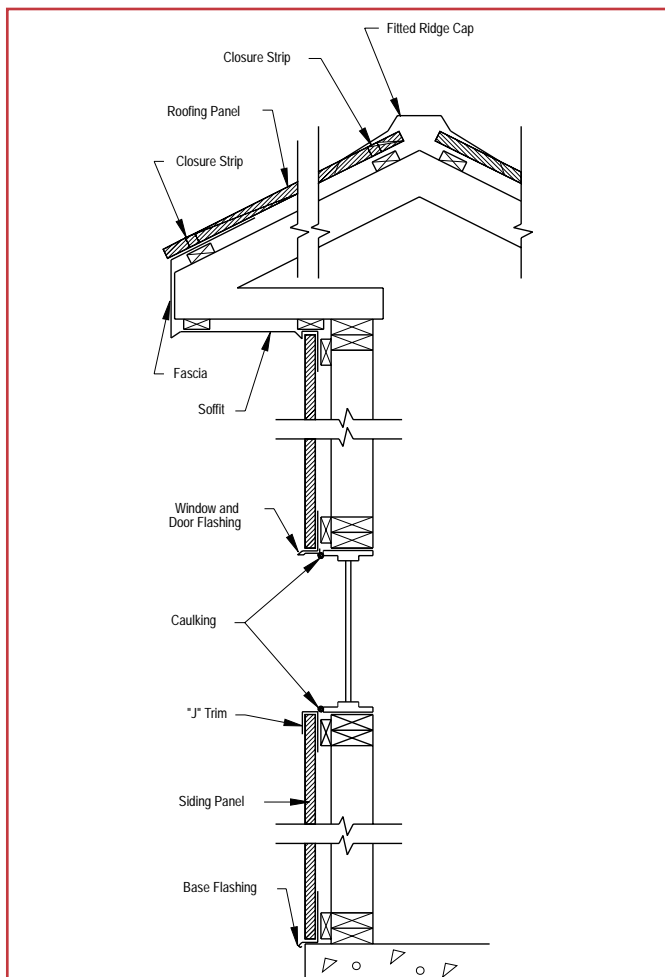


FIGURE 3 Typical trim locations

Figure 3 shows a number of flashings and their use on a building. There is a basic difference in styles between flashing types. While some are installed before the steel cladding, others are installed after the cladding: both, however, are effective in providing a weathertight building. Consult your local cladding or trim supplier for their list of available stock flashings.

Tools and Equipment

The following selection of tools is generally required to install lightgauge steel cladding.

- * Electric screw gun with adjustable torque
- * Hammer
- * Electric drill for pre-drilling fastener holes in sheets
- * Reciprocating saw, nibblers or shears
- * Tape measure
- * Leather gloves
- * Aviation snips
- * Chalk line (Make sure the chalk used can easily be removed from the painted sheet)
- * Proper safety equipment

Remember to always use leather faced gloves when handling metal cladding and trims. Also, if using a saw to cut prepainted sheets, make sure that the painted surface faces downward and keep away from other sheets because the hot filings will damage the paint finish.



Erection Safety

The members of the Canadian Sheet Steel Building Institute subscribe to the principle of performing erection work in the safest possible manner consistent with good construction practice. It is the responsibility of the roofing and siding erector to ascertain and follow the appropriate regulations governing construction safety for the type of structure and specific location. The following recommendations are only intended to supplement governing regulations and highlight issues that may be specific to sheet steel roofing and siding.

Personnel Protection

The erector's employees shall wear such personal protective clothing, equipment or devices as deemed necessary for the individual's protection from the particular hazards associated with the installation of lightgauge steel products. This equipment should include, but is not limited to, safety hats, safety belts, safety footwear, eye protection and gloves.

Job Site Housekeeping

The erector shall maintain the job site in a safe condition, including all means of access to the work area. No equipment or material shall be stored so as to present a hazard. All cuttings, strapping, packing materials and other debris pertaining to the trade shall be cleaned-up and disposed of as often as necessary to prevent a hazardous condition.

Safety While Hoisting

The erector shall ensure that proper material hoisting equipment is utilized and is in good repair. The operator and supporting personnel must have adequate training and review the safe operating procedure appropriate to the equipment being used. During lifting, moving or hoisting, no one is permitted to stand or pass under suspended loads.

Ladders

When used, ladders shall be of a type appropriate for the intended use and kept in good repair. Where metal ladders or metal reinforced ladders are used, proper care needs to be exercised that the ladder does not come in close proximity to uninsulated, energized electrical equipment or conductors. Ladders must be placed on firm footing, with the base located between one-quarter and one-third of the length from the base of the wall or structure. Where ladders are used as the regular means of access or egress from different levels, the ladder must be firmly secured in place.

Tools and Equipment

The erector shall instruct employees in the proper use of the applicable tools and equipment. All power tools are required to have reliable ground fault protection. Powder-actuated tools are only to be used by employees authorized and specially trained in the proper care and use of such tools.

Installation

The following is a step-by-step guide for the installation of lightgauge steel roofing and siding in an agricultural application. The same basic procedures will apply in a commercial project. The applicator is responsible for knowledge of local construction practices and building code requirements that may apply.

To begin, identify the side wall sheets, end wall sheets, sliding door sheets, roof sheets and all trim and flashing pieces. Prearrange them in a convenient location near the portion of the building being covered. Be certain to use the correct length of sheet in the right areas and secure or protect sheets from the wind at all times.



NOTE: If you have any doubts or concerns about the application of cladding, trim or fasteners. **STOP!** Check with your supplier. These following steps are recommendations only: use common sense.

STEP 1: Material Checklist

It is important to make sure that all of the necessary pieces are on hand before the project is started. There are some trim items that are absolutely necessary to be installed before the cladding and work cannot continue without them. To avoid any delays due to material shortage, double-check the inventory of items.

STEP 2: Install Roof Trim, Flashing and Membrane

There are many types of flashings and trims available, some of which are purchased and others that can be fabricated on-site. The examples used in this guide are only representative of the products available, and may not be recommended in certain applications. Consult the cladding manufacturer for advice as needed. Care should be used in the on-site fabrication of flashings to ensure a good looking and weathertight job.

While a minimum number of flashings are needed to ensure a weathertight building, some trims are optional and can be used to enhance appearance. The following

installation instructions refer to flashings and trims illustrated in Figures 4 and 5. The flashings shown in Figure 4 are the more common types. The flashings giving in Figure 5 are either Style I, installed before the cladding, or Style II, installed after the cladding. Determine which type you have purchased and follow the appropriate installation procedure.

(a) Gable Trim (Style I):

To install the Style I gable trim pieces as shown in Figure 5, fit the pieces in place, fastening through (at 36" spacing maximum) both top and bottom nailing flanges. If this type of trim is used, it is important to properly seal (sealer tape is commonly used) and fasten the cladding sheet along the gable to prevent water from migrating under the sheet and into the building.

(b) Eave Trim (Style I and Style II):

Style I and Style II eave trim pieces, shown in Figure 5, are installed before the roof sheets. For Style I, install as shown. For Style II, determine the wall panel depth (e.g. 3/4") and fasten the top nailing flange of eave trim to allow a space for the wall panels plus a 1/8" clearance. Use at least three fasteners per ten-foot length of trim.

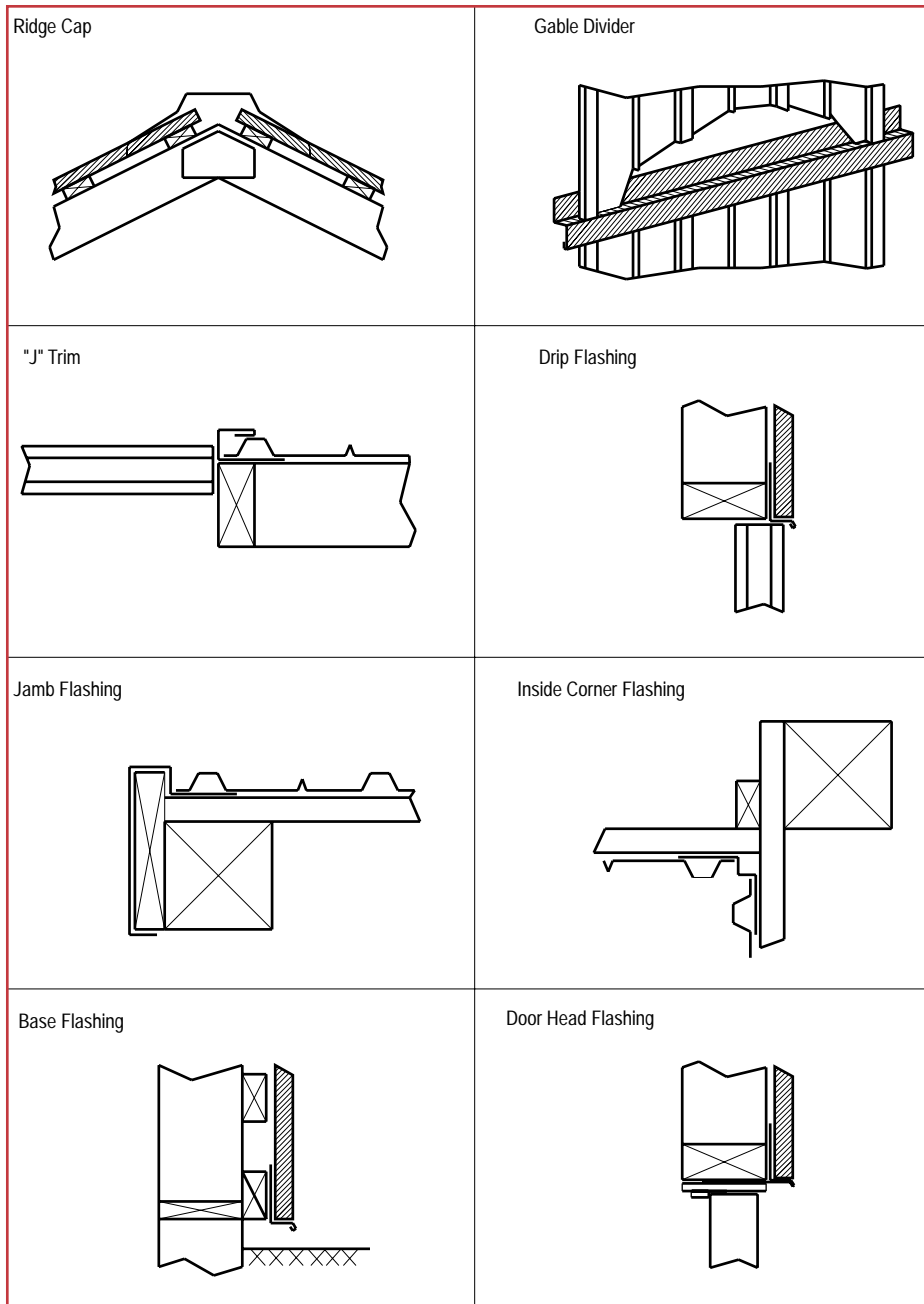
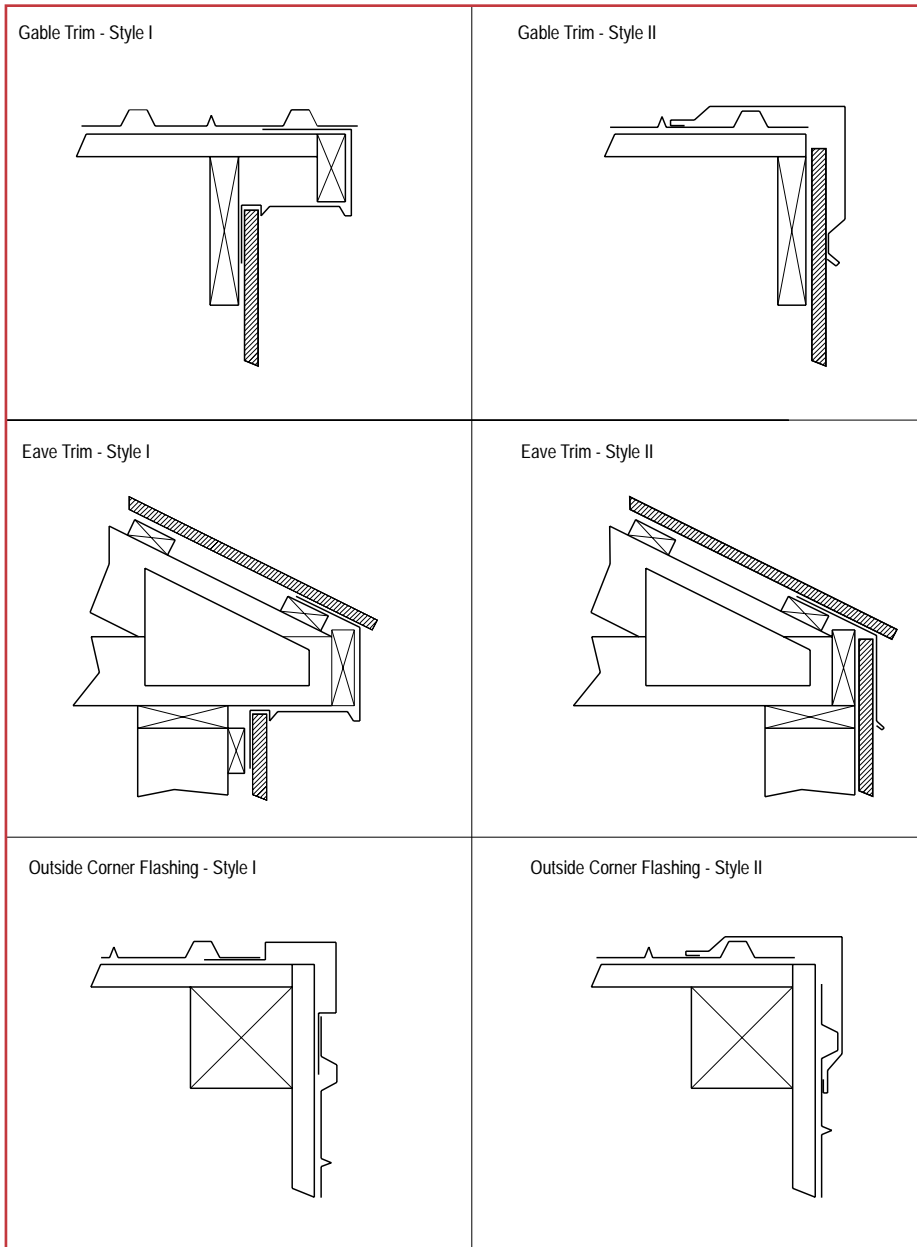


FIGURE 4 Standard flashings



The size and shape of valley flashings differ from one roof to another. A low-pitch roof may require a 36" wide valley flashing, whereas a higher-pitch roof may only require one 24" wide. The roofing sheets should be cut at an angle to accommodate the pitch of the valley. A "W" valley is more effective in channeling water off the roof than a "V" type. Care needs to be taken to close off the cladding ribs to prevent water backing up under the sheet.

Flashing where the dormer meets the main roof area can be done with a field-fabricated section. The dormer ridge cap needs to be cut and fitted under the main roof sheets.

(e) Membrane:

When sheet steel roofing is installed over a sheathing material such as plywood, it is common practice in some regions to install felts or a peel and stick membrane over portions of the roof area. Consult the local roofing applicator or fabricator for recommendations.

STEP 3: Roof Sheets

(a) The first thing is to check the roof squareness. At the corner where an eave and gable meet, measure eight feet along the eave purlin and mark. Then measure six feet up the gable edge from the eave and make another mark.

Measure the distance between the two marks. If it is exactly ten feet, you have a square roof at that corner (see Figure 7). Check all roof corners using this procedure.

NOTE: The following instructions assume that the roof is square. If the roof is not square there are two correction methods that can be used depending upon the severity. If the deviation is not too significant, it can be corrected a little sheet by sheet taking advantage of the tolerances in the sheet side laps. For very unsquare roofs, the sheet along the gable can be trimmed along its length to match. A gable flashing is used to reduce the visual impact of the trimmed sheet.

FIGURE 5 Style I and Style II Flashings

(c) Corner and Ridge Boxes:
Corner and ridge boxes are optional items and are installed after the eave and gable trims are in place. Follow the manufacturer's directions.

(d) Dormer and Valley Flashings:
Where required, install the valley flashings as shown in Figure 6. It is important that the valley flashing be supported by sheathing or blocking along its entire length. Without this support the flashing will not lie flat and it will be impossible to make a weathertight seal between the roof sheet and the flashing.

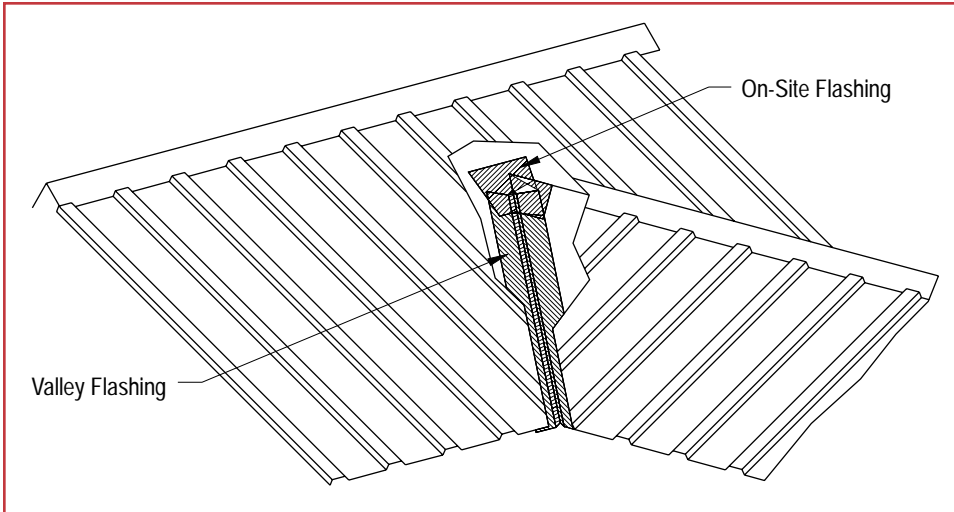


FIGURE 6 Valley Flashing

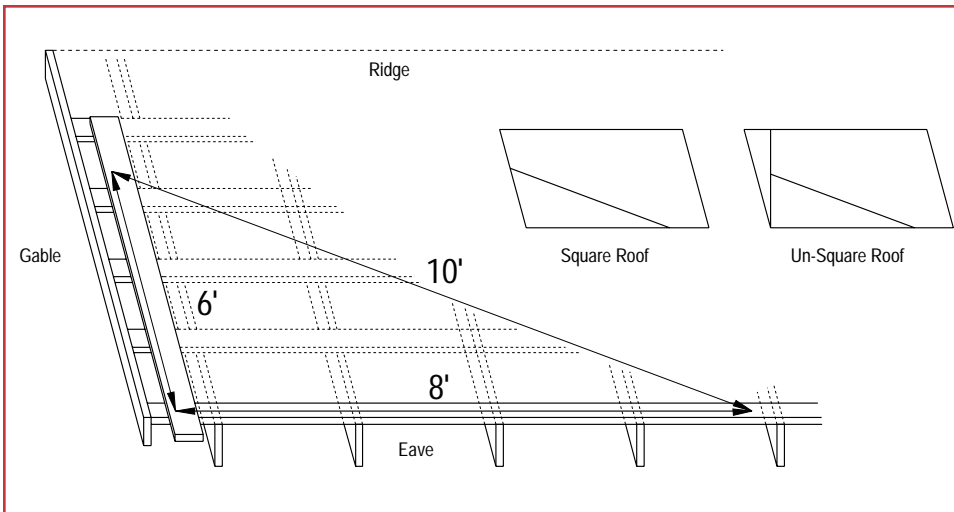


FIGURE 7 Check roof squareness

about 1" over gable edge and 1" to 2" over the eave.

(e) Overlap sheet ends by at least 6". Sheet end overlaps should only be made at a purlin for support. Lay sheets one by one from eave to ridge before commencing second row (Figure 8). Do not fasten open side before starting next row. Except for large buildings, a single sheet will span from eave to ridge without requiring overlaps.

(f) Check sheet alignment every four to five rows by chalking a line square to the eave.

(g) Leave the required space at the ridge to accommodate the ridge ventilators as illustrated in Figures 9 and 10.

STEP 4: Install Ridge Ventilators

There are a number of ridge vent types, two are shown in Figures 9 and 10. The installation procedures are essentially the same for both as follows:

(b) Identify the proper seam lap and the proper screw placement to fasten the sheets to the building.

NOTE: When walking on a roof, avoid walking on the ribs. Step where the purlins are and follow the fasteners up or across.

(c) To get the roof sheets up on the roof, put a board or ladder against the fascia board and slope to ground as far away from the building as possible. Using vise grips and a rope, pull sheets up the board and onto the roof. This method is not suited to long sheets. Extra care needs to be taken on windy days to prevent the sheet from buckling or getting out of hand. Work safely.

(d) Start at the eave on the end of the building farthest away from the prevailing winds. Extend the sheet

(a) Install the roof sheets leaving the required opening for the ridge vents as specified by the manufacturer. For individual vents, notch sheets at the ridge accordingly. For continuous vents, the roof sheets should stop short of the ridge to leave the required gap.

(b) Install the vent over the ridge opening, following the manufacturer's instructions, and use foam closure strips suited to the cladding profile to ensure that the building is sufficiently weathertight. Make sure the foam closure strip does not block drainage holes in the ridge vent. When fastening the ridge vent, drive the screws through the foam closure to keep it in place.

(c) Vents should be fastened through the ribs of the roof sheets and a generous bead of caulking must be

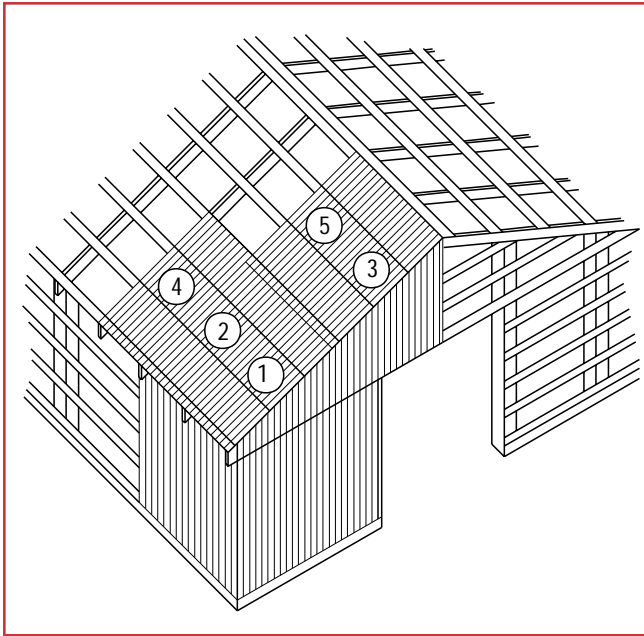


FIGURE 8 Location of Roof sheets

applied between the ridge cover and the vent end flanges.

- (d) For a ridge longer than the length of a single vent (normally 10 feet) butt two vents together with the connector flange underneath at the joint. Both vent and end panels fit between the two tabs on the connector flange. End panels are used when vents are installed individually.

STEP 5: Install Ridge Cap

- (a) Chalk location of ridge cap on both sides of roof.
- (b) Install closure strips along chalk line with adhesive.
- (c) Place ridge cap on top and fasten through top of cladding rib and through closure strip.
- (d) Caulk overlapping portion and place next ridge cap on top, repeating the above steps.
- (e) Caulk also around ventilators and other areas where necessary.

STEP 6: Install Gable Trim (Style II)

Style II gable trim is installed after the roof sheets have been installed. If you are using this type of trim, it should be installed at this time as shown in Figure 5.

STEP 7: Install Base Flashing

- (a) Measure side wall sheeting length and add 1" to determine location of base flashing.
- (b) Measure nailing flange of base flashing.
- (c) Subtract (b) from (a).
- (d) Using the measurement found in (c), chalk a line around the building.
- (e) Install base flashing, matching the top of the nailing flange to the chalk line. Using fasteners every 24", fasten trim.
- (f) Figure 4 shows the application of a base flashing.

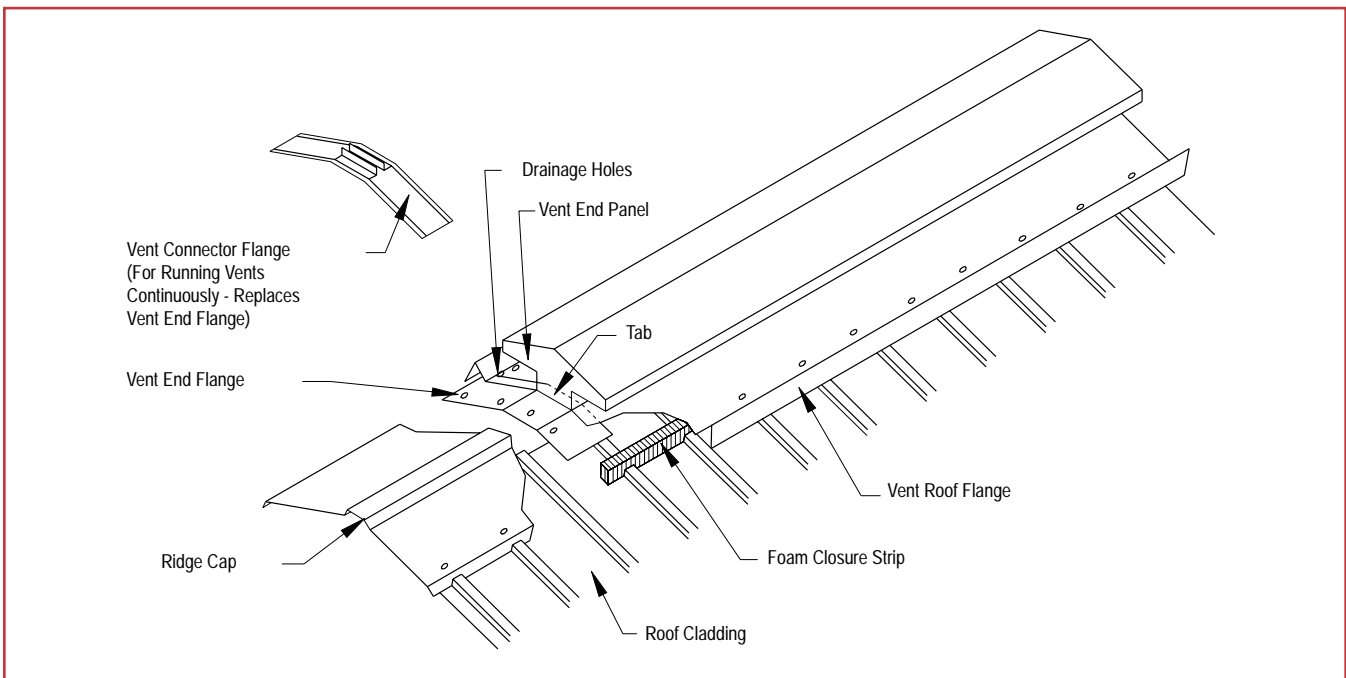


FIGURE 9 Low profile ridge vent

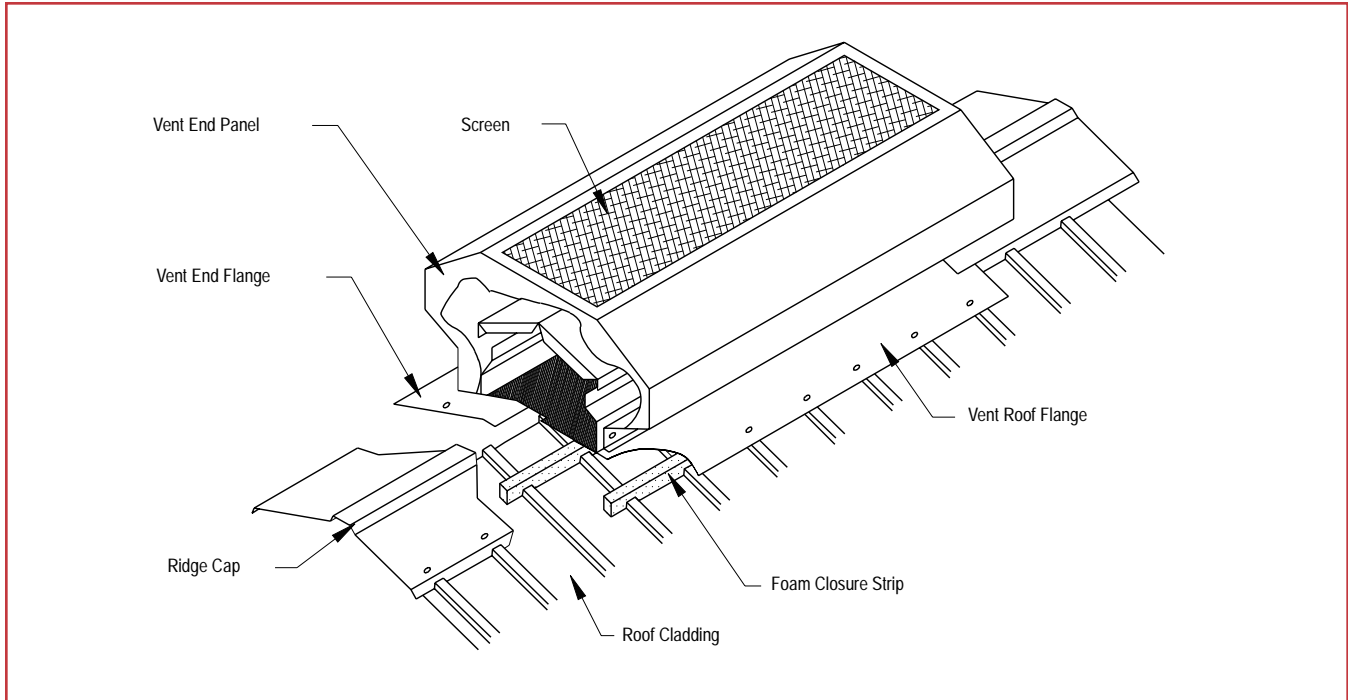


FIGURE 10 Standard ridge vent

STEP 8: Other Wall Trims and Flashings

Depending upon the type of building, there are a number of other flashings and trims needed to close off around the various wall penetrations such as doors and windows. The following describes some of the more common types as shown in Figures 4 and 5. Here again, some wall flashings and trims are installed before the wall cladding while others are installed after the cladding. Make sure you know which type you are using.

- (a) **Inside Corner:** Figure 4 shows the application of an inside corner trim installed before the wall siding.
- (b) **Outside Corner:** Figure 5 shows the application of an outside corner. Note that there are two styles, one installed before the siding (Style I), the other installed after the siding (Style II).
- (c) **Gable Divider:** Figure 4 shows the application of a gable divider which is installed after the end wall siding, but before the gable siding. A gable divider is not needed if the end wall sheets are cut to fit the slope of the roof.
- (d) **Jamb Flashing:** Jamb flashing as shown in Figure 4 is used around door openings and installed before the wall siding.
- (e) **J Trim and Drip Flashing:** Figure 4 shows the application of J trim and drip flashing in a window

detail. These flashings can be used in different types of applications.

- (f) **Door Head Flashing:** Figure 4 shows a flashing that can be used at a door head.

STEP 9: Wall Sheeting

Install the side wall and end wall sheeting, beginning on the side opposite primary view, usually the rear wall of the building. This will produce the best appearance since the sheeting laps will be out of immediate view.

- (a) Identify the proper seam lap and the proper screw placement to fasten the sheets to the building.
- (b) Begin placing sheeting on the side wall at the corner. It is very important to use a level to plumb the wall sheets before fastening.
- (c) Check seam lap to ensure a snug fit.
- (d) Run the first two fasteners through the girt to hold the sheet in place.
- (e) Finish fastening the wall sheets using the proper screw placement, ensuring that the sheets are square and laid evenly.
- (f) Continue to fasten the wall sheets around the building, finishing with the gable ends.



STEP 10: Caulking and Clean-up

- (a) Caulk around windows and doors for that professional look.
- (b) After the cladding sheets are installed, take a soft bristle broom and sweep the sheets to remove any steel shavings or other dirt. Steel particles left on the cladding will rust very quickly, often staining the paint finish, giving the impression that the roof sheet has rusted. Dirt left on the sheets will hold moisture and accelerate the deterioration of the paint system.

General Recommendations

There are a number of recommendations that do not deal specifically with the installation of lightgauge steel cladding, but which help to ensure a successful project.

- (1) Inspect the shipment of cladding panels upon delivery.
- (2) Moisture can cause wet storage staining which appears as an unsightly white stain, leading to red rust. A nominal amount of staining on material is not detrimental, however, to the functioning of the product.
- (3) Abrasive cutting tools are not recommended for cutting prefinished steel cladding. Any cutting method that generates excessive sparks or heat can damage the painted surface.
- (4) Walking on prefinished material should be avoided. However, when

you must do so, wear clean rubber-soled shoes to avoid scratching the surface and slipping or falling off the roof.

- (5) Fasteners, cuttings, etc. must be removed from the roof, gutters, etc. as installation progresses.
- (6) Materials that can trap moisture such as dirt, wood, rags, etc. should not be allowed to accumulate on the cladding surface.
- (7) Any burrs should be removed with a file or shears. Filings should be removed immediately. Overnight dew is often sufficient to cause these particles to rust, and sometimes stain light-coloured material.
- (8) To ensure an even application of all sheets, do not secure all fasteners on a panel until the sheet has been laid and squared.

We wish you success in installing lightgauge steel cladding on your project. We hope that this guide will help you plan and execute a successful job. Feel free to consult your local installer or cladding manufacturer for extra help.



