STEELWAY
BUILDING SYSTEMS

Steelway's Preventive
Maintenance Manual

AN ARDENT COMPANY

SBS Preventive Maintenance Program
June 18, 2019

Preventive Maintenance
Introduction

Steelway Building Systems (Steelway), a division of Glen White Industries Ltd., would like to take this opportunity to again thank you for your recent purchase of a steel building system from Steelway. Your building has been designed and manufactured to the highest quality standards to last for decades. To maintain the longevity and performance of your steel building, regular preventive maintenance is required. This will ensure your building will service your needs for many years to come. The best preventive maintenance that one can do is to perform scheduled annual inspections to identify and solve issues as they arise. This will help to optimize the service life of the building, keep the building aesthetically pleasing, functional, and weather tight to protect your products, your facilities and your personnel.

Steelway is not qualified to act in the roll of the erector, General Contractor or Project Engineer of Record for the entire project. The contractor's failure to erect the building in accordance with the provided erection information shall not impose liability on Steelway.

Before making any modifications to the buiding, please consult Steelway. You may unknowingly void warranties and cause the structure to become unsafe. If unauthorized modifications are made, you have also assumed all costs involved in the process of replacement or repair.

Replacement Parts & Service

Replacement parts & service can be obtained through your local Steelway authorized Builder. In the event an authorized Builder is not available call Steelway. When calling Steelway, have the original job number, year built, name of the project and original Builder information handy. This will help us identify and locate your specific building and aid us in supplying replacement parts.

Preventive Maintenance
Table of Contents

STEELWAY BUILDING SYSTEMS

The purpose of this manual is to assist your efforts in maintaining and protecting your new building. It is also intended to help educate the new owner of the responsibilities of owning a steel building manufactured by Steelway. Just as with a new home, your building will occasionally need attention to maintain current aesthetic appeal, warranty coverage, weather tightness and proper working order of accessory items. The decision to buy a steel structure is not unlike buying a new car. You would not normally purchase a new car and choose not to perform the routine maintenance. Likewise, you should not neglect the minimum routine annual maintenance of your Steelway building. Proper and timely maintenance is an integral part of the long term success of a roof system or structure in order for it to maintain its original design integrity. Maintenance of your building is a requirement and the responsibility of the building owner.

This manual is broken into sections. The first deals with the final walk through before taking ownership. This section highlights areas of inspection that may eliminate later surprises. The second section deals with the annual maintenance of the building and attempts to answer some of the questions that may arise. The third section deals with the Annual Inspection Report. Performing scheduled annual inspections may be the best part of a preventive maintenance program. Doing so identifies problems and provides correction as the situations occur. The fourth section deals with Steelway warranties that have been issued on your building. The warranties issued by Steelway outline the conditions by which the product must be manufactured, stored, installed and maintained. Section five contains information about Builder's warranties, if applicable and addresses the Builder's responsibilities within the warranty terms. **Remember, a warranty is never a replacement for professional installation or reasonable maintenance**.

This Preventive Maintenance Manual is available for your reference in order to practice routine maintenance. The information indicated in this manual reflects the minimum standards for routine maintenance and your specific building may require either additional special maintenance or more frequent routine maintenance, to which the determination is based solely on common sense by the owner. Some information within this guide is provided to outline some Installation & Maintenance conditions that have been observed or experienced by building owners. In many cases, the nature of issues experienced by owners was not associated with the manufacturing of materials, but rather how the materials were stored, shipped, handled, installed and/or maintained. Some information provided in this section is also related to outside product compatibility or improper design associated with materials that are not part of the steel building system scope. Some of these conditions are to be expected on a structure. This information is intended for additional information in order to help identify some common areas of concern so that they can be addressed or prevented. This information guide is not a certification or endorsement from Steelway. Our mission is in no way to certify erection methods or engineering for specific project issues due to installation or damage. If that service is required, an independent, qualified consultant should be retained since the expertise of Steelway does not extend to these areas. Services as aforementioned are not included in the scope of our order documents. Steelway is a high quality manufacturer of building systems and has designed your building with accordance to the order documents. We are not qualified to act in the roll of the Erector, General Contractor or Project Engineer for the project. **The contractor's failure to erect the building in accordance with the provided erection information shall not impose liability on Steelway.**

This manual has been designed to be as user friendly as possible. It is not intended to replace personal interaction. If you have a question on something that does not appear in this book or on a situation that is dangerous to human life, consult your engineer of record, your Builder, or Steelway.

A. The Perimeter Walk

Take a walk around the perimeter of your building. Is there any stains, rust, dents or scratches on the panels? Is the finish itself acceptable; are there any blemishes? Are the fasteners all in place and well seated? Are the flashings in place at all locations? Are the cut ends de-burred and closed off where appropriate? Has the building been properly made water tight? Are all of the small openings sealed against the elements, birds and rodents?

Are the downspouts in place as noted on the Steelway plans? Are they free of debris and well drained? Are there provisions for removing the water from the base of the building?

Are the doors and windows functional? Is the correct hardware in place? Are the doors keyed alike? Do you have all the keys? Is the trim around the doors and windows installed inside and out? Is the insulation protruding out from the base, base trim or any other areas? Have all chalk and construction markings been removed? Are there structural parts left over? Do you know where they belong?

B. Inside Your Building

First walk the perimeter of the inside of the building. Note, are the columns in good shape and are they all bolted down? Do the girts and flange braces seem to be in their appropriate places? All Steelway buildings will have some type of wind bracing. Are the rods under tension or loose? Is the building properly insulated or can you see areas which appear to be missing insulation? Check to see if light shows through at the eave, gable, or sill of the building; this is a dead giveaway that there are still things to be finished off.

Next inspect the rafters and interior columns, if applicable. There should be no gaps between the connection plates where the rafters meet the columns at the bolt locations. Check to ensure that the interior columns are in good shape.

Finally, your Steelway building structural components were coated at the factory with a primer. Please note that this is for protection from the elements during shipment only and is not intended to be a finished coat. During some seasons of the year, muddy foot prints on the structural steel are unavoidable. Any cleaning of the product surface is the responsibility of the Builder or Erector.

C. Your Roof

Proper safety precautions and procedures must be used when working at heights. Please follow your local safety regulations and guidelines. Walk the perimeter of the roof. Are the gutters and downspout outlets in place as noted on the Steelway plans? Are they free of debris and well drained? Are the fasteners all in place and well seated? Are the flashings in place at all locations? Has the building been properly made watertight? Are all of the small openings sealed against the elements, birds and rodents?

Walk the endlaps. Have the endlaps (RTL-24, StormSeal, VersaSeal or DiamondSeal) been installed per Steelway plans? Do the fasteners exhibit penetration through the sealant? Are the fasteners all in place and well seated? Are the cinch straps of the roof properly installed and are the fasteners properly engaged? Are the stitch screws and structural screws of the roof correctly installed?

Walk the ridge or high eave. Has the ridge cap or high eave been installed per Steelway plans? Do the fasteners exhibit penetration through the sealant? Are the fasteners all in place and well seated? Is the ridge or high eave area free of debris and well drained? Are the end dams or closures weather tight and properly installed?

Inspect other areas. Is there ponding water around curbs or in any other areas? Does the roof drain properly? Is there any white, red or black stains, dents or scratches on the panels and trim? Is the finish itself acceptable? Are the fasteners throughout the entire roof in place and well seated? Does the sealant appear to be properly placed? Are there any dissimilar metals or materials (refer to Dissimilar & Corrosive Materials on page 8) coming into contact with Steelway material?

Structural Framing

As a custom manufacturer, Steelway produces a wide array of structural framing systems. Crane support systems and mezzanines can also be included as part of the complete building package. Your Steelway building was designed to achieve the optimal design solution for your building requirements.

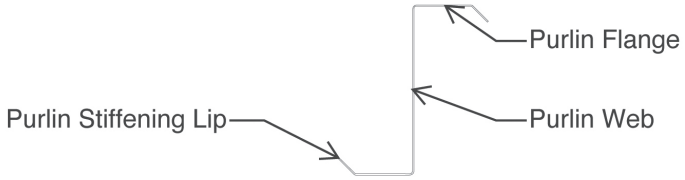
A. Primary & Secondary Structural Steel

Main Frames, Purlins & Girts

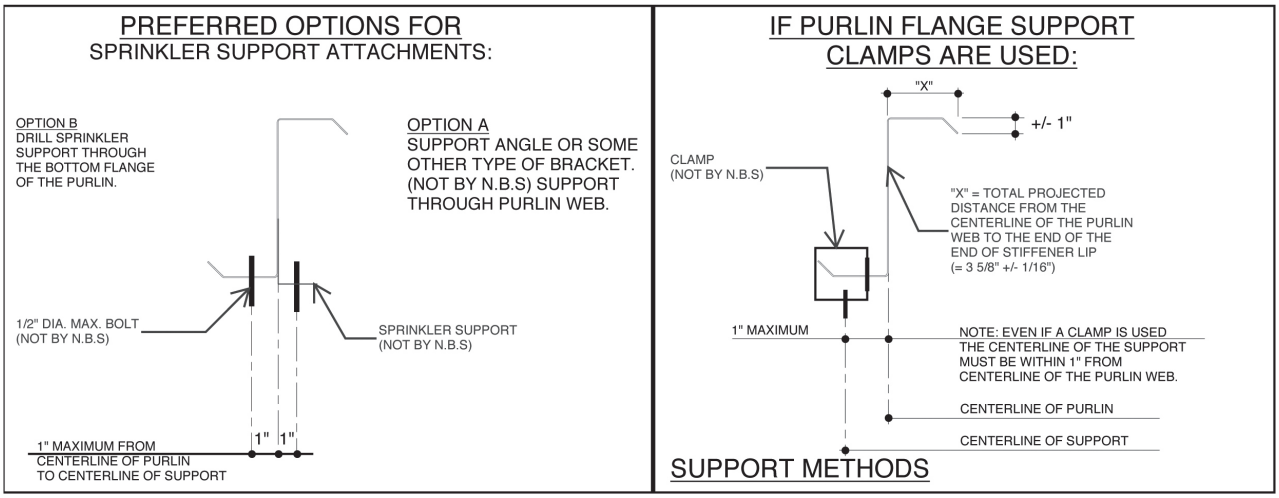
Modifications to Shape
All structural steel designed, detailed and provided is an integral part of the building system order and must be off-loaded, stored, and installed per the manufacturer's instructions. It is important to understand that any omissions or modifications of materials as provided by the manufacturer can compromise the design integrity of the structure. Any modification to the structural system must be reported to Steelway. For many reasons, no change can be made without the prior approval of Steelway. By making field modifications without consulting Steelway, you may unknowingly void all warranties and cause the structure to become unsafe. You may also assume the costs and liability associated with any corrective action taken. Any party making such omissions or modifications without the consent of the manufacturer is assuming design liability for the building system.

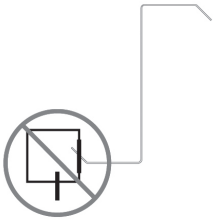
Adding Loads
Collateral loads, unless specified in the Quote and Order Documents, are assumed to be uniformly distributed. If suspended sprinkler systems, lighting, HVAC equipment, and the like, exceed the collateral loads specified, consult Steelway. Be particularly watchful for individual structural members that appear to be loaded significantly more than others. The roof structure of your building has been designed to the specific load criteria by your Builder, Architect, Engineer of Record, or retained design professional. Any changes or modifications to your structure which add additional loads may adversely affect the buildings load capacity. Before hanging any items from the building's framing or adding any additional loads to the roof (sprinklers, piping, roof top units, jib cranes, etc.), contact your Builder, Architect, Engineer of Record or competent licensed structural design professional. Any additional loads placed on the structure or hung from the roof which deforms the purlins or other structural components may seriously impair the structural integrity of the building and create dangerous conditions. If your Builder is not available, contact Steelway.

Suspended Loads
Any load hung from the roof must be with the knowledge of Steelway. The method of attachment to a roof support member varies with the type of load being suspended and supporting member. In no case should any part of a purlin (roof zee) be deformed to accommodate a suspended load. Should you need to hang a suspended load, contact your Steelway Builder, or Contractor who will coordinate with Steelway. No modifications to the structure or addition of loads to the structure can be made without the knowledge of the project's engineer of record and Steelway.



GENERAL RESTRICTIONS
UNDER NO CIRCUMSTANCES CAN THE PURLIN STIFFENING LIP BE FIELD MODIFIED FROM THE FACTORY SUPPLIED CONDITION ALSO DO NOT HANG ANYTHING FROM PURLIN STIFFENING LIP.





Primer Coating
All primary structural members of the building system not fabricated of corrosion-resistant material or protected by a corrosion-resistant coating are painted with one coat of shop primer. All surfaces to receive shop primer are cleaned of loose rust, loose mill scale and other foreign matter by using, as a minimum, the hand tool cleaning method prior to painting. The coat of shop primer is intended to protect the steel framing for only a short period of exposure to ordinary atmospheric conditions. The coat of shop primer does not provide the uniformity of appearance or the durability and corrosion resistance of a field-applied finish coat of paint over a shop primer. The Manufacturer is not responsible for the deterioration of the shop coat of primer or corrosion that may result from exposure to atmospheric and environmental conditions, or for the compatibility of the primer used to any field-applied coating. Minor abrasions to the shop coat caused by handling, loading, shipping, unloading, and erection are unavoidable. Touch-up of these minor abrasions is the responsibility of the End Customer.

Primer Touch-up
Structural Steel normally requires no maintenance except in the event of oxidation. If there are areas that have been exposed and show signs of rust, clean the affected area and re-prime using the primer as supplied by the manufacturer to spot treat or touch-up. Additional touch-up primer is available through your local Steelway authorized Builder or directly from Steelway.

If the structural steel is to have a topical finish coat of paint applied, consult with a qualified contractor for the use of proper primers and paints to achieve the desired results. Touch up priming, topical painting of the structural steel and compatibility of the factory applied shop coat to any field applied coating is the responsibility of the end customer or any sub-contractors retained by the end owner for such work.

B. Crane Systems

Structural Bolts normally require no maintenance except in instances where the structure is exposed to vibration, such as a structure with an overhead crane. In this instance, bolts are required to be inspected at least once a year or as per requirements of Ontario OH&S Act and regulations. Crane Bracing is also required to be checked at least once a year. Crane systems require constant maintenance. Follow the guidelines outlined by your crane system manufacturer. For inspection and maintenance of cranes, refer to the applicable sections of;

- CSA B167-08 Overhead travelling cranes - Design, inspection, testing, maintenance, and safe operation
- CMAA Specification #70 Specifications for Top Running Bridge & Gantry Type Multiple Girder Electric Overhead Travelling Cranes
- CMAA Specification #74 Specifications for Top Running & Under Running Single Girder Electric Travelling Cranes Utilizing Under Running Trolley Hoist
- ASME B30.2 Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)
- ASME B30.11 Monorails and Underhung Cranes
- ASME B30.17 Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist)

Crane Loads - Any building designed for crane loads was designed and provided as per the initial requests indicated on your order documents. Any change to the building from the original design must be reviewed and authorized by your Engineer of Record or competent licensed structural design professional. Each customer shall also consult the local building department for building permit requirements in relation to the changes. If there are any questions regarding the use of the crane of its loads, please contact Steelway.

C. Wind Brace Rods

The bracing provided with your structure is of significant structural importance. All bracing which is in place after the erection of the building should remain in place. Never allow the removal of any bracing by any contractor or maintenance personnel. If there are any questions regarding the removal or relocation of any bracing, please contact Steelway.

Tension
Check annually to insure that all wind bracing members (cables or rods) are under tension.

D. Building Evolution

Adding and Removing of Openings
Often adding a framed opening is as easy as cutting a hole in your sheeting and framing it in. At times, wind bracing must be moved or opening locations affect column flange brace placement. By making field modifications without consulting Steelway, you may unknowingly cause the structure to become unsafe. **Always consult Steelway if you have a project-specific question.**

Additions to your Steelway Building - Your Steelway Builder can assist you in developing an expansion of an existing Steelway building. Steelway buildings can be designed with future expansion in mind.

Building Envelope

A. Roof Panels, Wall Panels, Trims & Flashings

Proper and timely maintenance is an integral part of the long term success of a roof system in order for it to remain water tight. Proper maintenance is also required in order to preserve the integrity of the Galvalume® or painted protective coating of the steel sheets. Maintenance of the system is a requirement and responsibility of the building owner. All roof and wall panels along with trims and flashings designed, detailed and provided by the manufacturer are an integral part of the building system order and must be off-loaded, stored, and installed per the manufacturer's instruction. It is important to understand that any omissions or modifications of materials provided by the manufacturer, can compromise the water tightness or protective coating integrity of the materials. Any such omissions or modifications without the consent of the manufacturer can void product pass-through warranties provided by the manufacturer. Please refer to Steelway's Warranty Program.

Dissimilar & Corrosive Materials
You should not store material on the surfaces of your panels, including roof areas of your building. Roof and wall panels should not come in contact with or be marked with any graphite or lead markers. Roof and wall panels should not come in contact with copper, lead flashing, exposed iron or debris. The use of treated lumber in association with painted or unpainted Galvalume® steel sheets is a known corrosive and will cause premature deterioration of the protective panel coating. Wall panels should be kept clear of dirt and soil. Air conditioning condensation water should not be allowed to drain onto your roof or wall panels and condensate lines should always be plumbed to the eave of the structure. Exhaust pipes that create condensation, must be extended past the eave to ensure there is no contamination.

Annual Routine Maintenance
Once a year, check flashing and sheeting interfaces and lap joints in the metal for proper seal and potential loose fasteners to ensure connection and water tightness. Endlaps, eaves, ridges, curbs, translucent panels, and other interfaces should be inspected and maintained yearly. Normal adjustments or tightening of fasteners may be required. Should repair be required, please contact either the original Builder or the manufacturer for proper methods and maintenance material requirements. Panel end-lap maintenance and rebuilding instructions are available from the manufacturer. This includes the removal of fasteners and sealants, proper cleaning, and reinstallation of sealants, hardware and fasteners. It is important that this maintenance is completed according to the manufacturer's recommended methods and instructions to achieve water tightness and prevent the nullification of material warranties.

Installation & Clean-up
During installation and maintenance, the use of cutting tools that damage the painted panel finish should not be used. When field-cutting or mitering roof and wall panels or trims and flashings, non-abrasive cutting tools such as nibblers, shears, scissors or tin-snips should be used. Abrasive cutting tools such as mechanical grinders, or saws can damage the Galvalume® or painted finish and create excess metal shavings that can corrode the panels. The use of non-approved cutting devices may void your manufacturer's material warranty. Painted surfaces should be cleaned daily (whether during construction or maintenance work) of all filings, cuttings, screws, pencil markings, and debris to prevent damage due to oxidation of foreign materials. In addition to this, thoroughly clean all panels, trim, and gutters of all foreign material upon completion of construction and maintenance.

B. Maintenance of Painted Finishes

WARNING: Always test cleaning procedures in a small inconspicuous area before use on a large scale.

Routine Washing
NOTICE: If located within a 1000 feet of a saltwater shoreline, roofing or siding should be washed with potable water annually. A 5% solution of commonly used commercial detergents can be used on heavily soiled areas and will not harm your panel surface. Always rinse thoroughly with water. Do NOT use wire brushes, steel wool, sandpaper, abrasives or similar cleaning tools which will mechanically abrade the coating surface. Use a cloth, sponge or a soft bristle brush for application. For best results, cleaning should be done in the shade or on a mild cloudy day.

Cleaning
The following is the suggested maintenance for the upkeep of Steelway panels:

1. Dirt may cause apparent discolouration of the paint when panels have been exposed to dirt-laden atmospheres for long periods of time. Chalking may cause some change in appearance in areas of strong sunlight. A good cleaning will often restore the appearance of these buildings and an occasional light cleaning will help maintain good appearance.

2. In many cases, simply washing the building with plain water using hoses or pressure sprays will be adequate. In areas where heavy dirt deposits dull the surface, a solution of water and detergent (1/3 cup laundry detergent per gallon of water for example) may be used. A soft bristle brush with a long handle may be useful. A clean water rinse should follow.

3. Mildew may occur in areas subject to high humidity, but is not normally a problem due to the high inherent mildew resistance of the baked finishes used. However, mildew can grow on dirt and spore deposits in some cases. To remove mildew along with dirt, the following solution is recommended:

   1/3 cup laundry detergent
   2/3 cup tri-sodium phosphate
   1 quart sodium hypochlorite 5% solution (chlorine-based bleach)
   1 gallon water
   Rinse with clean water immediately after use.

   WARNING: Always test cleaning procedures in a small inconspicuous area before use on a large scale.

Rust
Once a year inspect the panels for rust. Should any rust or rust stains be found, determine the source, such as steel filings from drilling, sawing, grinding, etc. and remove them. The rust stain can generally be cleaned off with one of the following: soap and water, mineral spirits, or a mild polishing compound as used on a car finish. If you have any questions or concerns regarding rust on panel or trim surfaces, contact your local Builder. If your Builder is not available, contact Steelway for additional service.

Painting
It is likely that during the life of your steel building the exterior panels will require touch-up paint. Most paint stores will have paint matching technology and can supply the correct primer and finish paint. Please note that all atmospheric conditions have some effect on the panel finish; give this due consideration. Touch-up of these areas are the responsibility of the End Customer. Contact your local Builder for additional service. If your Builder is not available, contact Steelway.

Paint Scratches
Scratches to the paint should be brush touched (artist brush) with touch-up paint. If the scratched area has not rusted, the paint may be applied without surface preparation. If the area is rusted, remove the rust; prime the affected area and brush with color matched touch-up paint.

Non-Water Soluble Deposits on Zinc-Aluminum Finishes
Use mineral spirits (with a Neutral PH) to remove non water soluble deposits (tar, grease, oil, paint, graffiti, etc.) from the panel surface. Do not use any other harsh caustics or acidic compounds or cleaners that could potentially cause premature failure of the coating and otherwise create permanent damage to the protective panel finish.

Non Water Soluble Deposits on Silicon Modified Polyester Paint Finish
Use a diluted mixture of a common household commercial cleanser and Water to remove non water soluble deposits (tar, grease, oil, paint, graffiti, etc.) from the panel surface. Do not use any other harsh caustics, abrasives, or acidic compounds or cleaners that could potentially cause premature failure of the coating and/or otherwise create permanent damage to the protective panel finish. Solvents that may also be used to remove these items from paint panel finishes include:

Alcohols	Not aesthetically detrimental when properly applied Denatured Alcohol (Ethanol) Isopropyl (Rubbing) Alcohol Methanol (Wood Alcohol) - **Note: Methanol is toxic.**
Petroleum Solvents	Not aesthetically detrimental when properly applied VM & P Naphtha Mineral Spirits Turpentine (Wood or Gum Spirits)
Aromatic and Other	**Use with caution**: Xylol (Xylene) Toluol (Toluene)

WARNING: Always test cleaning procedures in a small inconspicuous area before use on a large scale.

Limit contact time to under five (5) minutes maximum and test before using; exposure long enough to damage paint finish will void your finish warranty.

DO NOT use acetone paint remover, Lacquer thinners, Esters, Ketones, Methyl Ethyl Ketone, or Methyl Isobutyl Ketone on Silicon-Polyester paint surfaces. Contact and exposure with these products can result in blemishes detrimental to the aesthetics of your steel building and will void your warranty. Most organic solvents are flammable and/or toxic and must be handled accordingly. Keep away from open flames, sparks and electric motors. Use adequate ventilation, protective clothing and goggles. A fresh water rinse should be used after application of alcohols, solvents, or aromatics to ensure that all residue is removed.

C. Cutting/Drilling

Field cutting and drilling of panels and trim is a normal process during the life of a steel building. The use of improper tools or cutting techniques can result in an unfavorable appearance of the finished product, and may void your warranty from the manufacturer.

Some of the most common activities that require field cutting of panels and trim are:

- Replacing damaged panels
- Adding holes at pipes, etc.
- Mounting external fixtures

1. Drilling

It is important that any and all shavings from drill bits and self-drilling screws be wiped off of the siding and roof panels. The by-products of the drilling process are actually hot metal shavings. These shavings can embed themselves into the finished coat of the material, resulting in rust.

Panel warranties do not cover this type of damage.

2. Cutting

Full width panels should always be cut with a shear or power nibblers. The hot metal shavings produced by a grinder or hot saw will burn into the panel coating. This is one of the most common reasons for rust. This rust may appear immediately or may not appear for months, and is not covered under the panel warranty. By using a shear or nibblers, this hazard can be avoided.

Figure 1
1. Hot sparks caused from cutting the panel burns through the primer.
2. The primer under the finish coat on the opposite side is also burned.

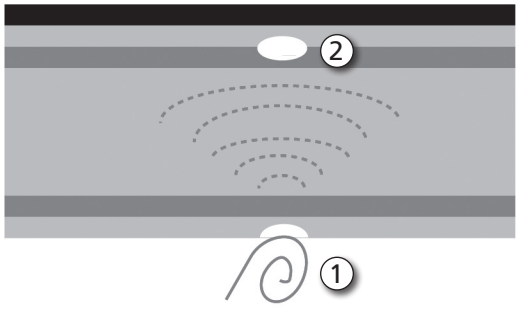
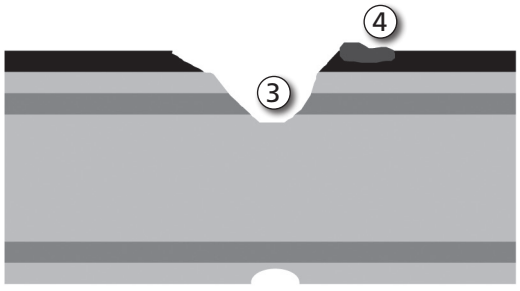


Figure 2
3. In time, the finish coat collapses causing black steel to be exposed.
4. As a result, red rust appears on the panel.



Maintenance of Roof Systems

A. General

Galvalume® and its chemical make-up is designed to withstand minor cuts and abrasions. The unique coating on the steel will virtually "heal" those minor abrasions that occur. That same "healing" property that protects the panel also causes the Galvalume® coating to be highly reactive when in contact with some types of foreign debris such as copper wires, drill shavings and the like. When left on the roof, these materials can cause the panel to rust. The Galvalume® roof must be kept free of debris in order to reach the expected service life.

The Steelway RTL-24, StormSeal, VersaSeal or DiamondSeal Galvalume® roof will give you years of productive life if properly installed and maintained. However, a regularly scheduled program of preventive maintenance is required for the roof system to perform as designed. A reasonable schedule of maintenance begins with proper inspection during construction and a follow-up plan within 60 days after occupancy. Your roof should be maintained annually thereafter. A reasonable estimate of the cost of maintenance is approximately $0.015 per square foot of roof per year.

B. RTL-24 Standing Seam Roof System

Larger roofs generally use the RTL-24 Standing Seam Roof System which is designed to "float" or move as the temperature of the roof changes. This action of floating allows the roof to expand and contract with normal temperature changes. This is a unique feature of standing seam roofs on the market today. Since the roof moves, it must not be restrained in any way. Flashings at the ends of buildings must be allowed to float in concert with the roof. Before adding additional fasteners or flashings to the building ends, contact Steelway.

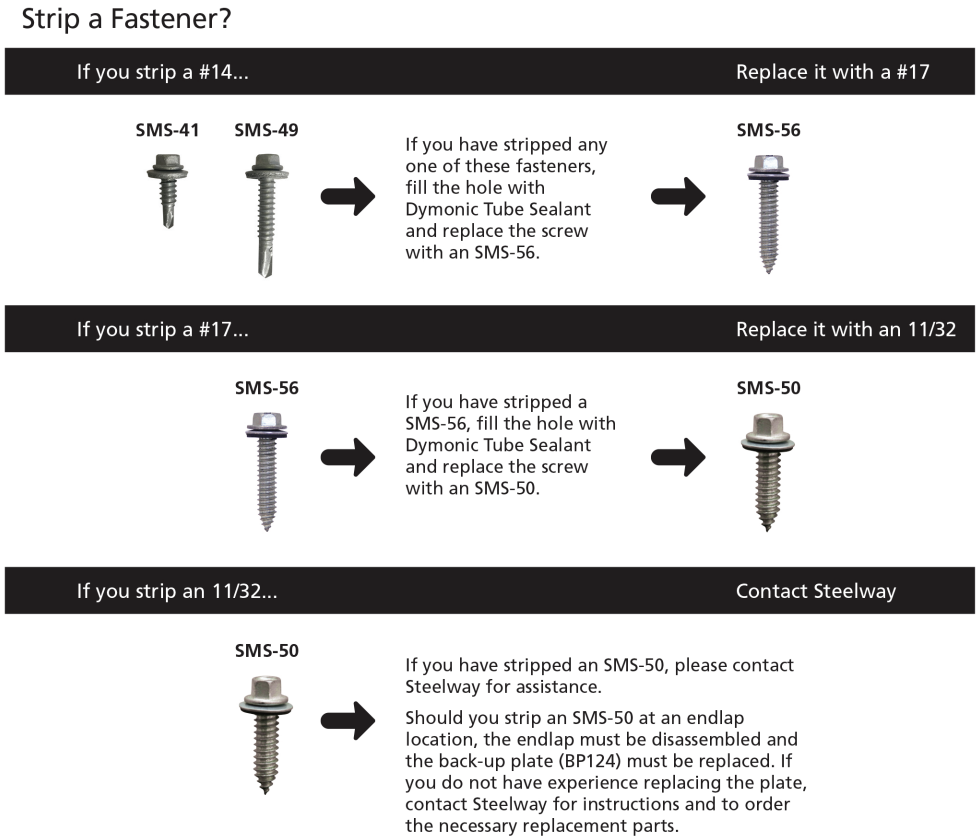
StormSeal, VersaSeal, DiamondSeal Roof Systems
Smaller projects can often utilize a "Screw Down" system. This roof is attached directly to the roof secondary members and does not allow roof system movement as the RTL-24 system does. While the cost of the roof system and labour required to install this type of roof system is less, the need for routine maintenance is no less important.

C. Roof Inspection

During erection your roof is subjected to construction traffic. This is normal, and should be minimal, provided the contractor uses good judgment. It is recommended that the owner take the following steps before the erector leaves the jobsite. These same steps should be followed on your annual visit. Keep a log of your maintenance work. This will help you set a good schedule as well as document what steps were taken, and when.

1. **Building Walk-Through**
   Periodic roof maintenance should start with a walk through the building interior to observe if modifications have been made to the primary or secondary support members. Make sure hangers for heaters or sprinklers do not extend above the structural or touch the standing seam roof. Make sure fire walls that extend to the roof do not restrict the panel movement or create ponding. Walk the exterior edge of the building at ground level and repair any downspouts that have clogged or been dislodged in any way.
2. **Safety First**
   Once on the roof, make sure you are aware of any potential safety issues such as steam or hot water vents, electrical lines, translucent panels and the like, and take the necessary precautions to prevent an accident. Be sure to follow all provincial and local safety requirements as well as rules of good common sense.
3. **Walking the Eaves**
   Walk the eaves of the building, using approved safety methods and take care not to get too close to the edges. Make sure all gutters and downspouts are clean and free of debris. Look for any irregularities, including missing fasteners, overlapping cinch straps, and stripped or broken fasteners.

   Any fastener that was not seated properly will work itself out eventually. Replace any unseated or loose fastener with the next larger fastener size. Use the following table to assist in selecting the proper replacement fastener.



D. Fasteners

The fasteners provided with your structure are important to the long term success of your panel finishes and the design integrity of the system. Do not locally obtain or substitute fasteners on a project, unless otherwise authorized by the manufacturer. Replacement fasteners can be obtained through your authorized Steelway Builder. If your Builder is not available, please contact Steelway for assistance.

E. RTL-24 Panel Endlaps

The RTL-24 panel endlaps (where two roof panels join end-to-end) should be checked for any unseated fasteners or back-up plates that may not be properly engaged. An endlap in which the back-up plate is properly engaged will feel firm underfoot. This indicates that the cinch strap is joined to the back-up plate.

Trouble Shooting
Should you find an improperly installed back-up plate on your RTL-24 roof, remove the cinch strap, pry the endlap apart, and clean any sealant from the panels. Affix the back-up plate in the proper position with the back-up plate tabs, re-install pre-cut sealant and apply gun grade caulk between the panels. Make sure the caulk covers the endlap completely, especially in the areas around the fastener holes. Thread an awl through the cinch strap, panels, sealant and back-up plate as indicated in the Erection Manual. Replace fasteners using the next larger size or the “SMS-50” screw as supplied by Steelway.

F. StormSeal, VersaSeal, DiamondSeal Roof Systems - Panel Endlaps

The endlaps (where two roof panels join end-to-end) on these roofs are located over a purlin and are connected with screws. Check for any screws that are stripped or washers that are not seated along the endlap, ridge, gables and eaves. Stripped screws must be replaced with an oversized fastener as outlined in the Fastener Replacement Chart on page 13.

G. Ridge Areas

Walk the area adjacent to the ridge, being careful not to step directly on the cap. The ridge should be free of ponding water and debris. Check for and remove any debris in the area. Check for any fastener that may not have been seated well. Review interface between the ridge and the gable flashing or any parapet condition. Inspect the gable flashing and check for any area where the flashing is not seated to the panel.

H. Single Slope Buildings

Don't forget to walk the high side of a single slope building. Check for tightness of flashings and fasteners. Verify that the seal between the flashing and the end dam is in place. Five fasteners are required to make the high eave trim to end dam connection on a RTL-24 roof.

I. Expansion Joints

Larger buildings have longitudinal and transverse expansion joints. During your walk through, make sure to look for any irregularity in a flashing joint or for any loose fasteners.

J. Step-down or Parapet Conditions

Be sure to check step-down (high/low) conditions or areas where blowing rain and snow severely test the design and installation of your building. Flashings must be allowed to "float" on the RTL-24 roof, yet prevent moisture from entering the building. When maintaining the roof, be sure to look for any loose fasteners or sealants. Remove any debris from step-down areas. Be careful of the addition of any fastener that will restrict movement of the roof. A restrained roof may cause maintenance problems in a system-related area. Consult your authorized Steelway Builder. If your Builder is not available, please contact Steelway for assistance.

K. Roof Curbs and Hatches

Look around all roof hatches and curbs for debris left by erectors or repair men. All debris must be removed from the roof. Check for seated fasteners and ponding water. Water must flow freely around all curbs. Never use tar or apply topical sealants to the surface of the panels. Topically applied sealants will only conceal the cause of a problem. You may want to consider some type of permanent work platform around those units that require constant maintenance. Condensate lines from air conditioner units expel water contaminated with lead or copper. This must not be allowed to come in contact with the roof panel. The copper and lead are very reactive with the steel panels and can cause rust. This water must be piped off the roof to the building exterior.

L. Corrosive Materials

Graphite, lead, copper, treated lumber, lead flashing, exposed iron, salt, chlorine, ammonia & miscellaneous debris including dirt & oils are all commonly known corrosives to the protective Galvalume® coating and can cause premature deterioration of panel finishes. These materials specifically, but not limited to other contaminants, can be severely detrimental to the integrity of the coatings provided. Failure to keep building contaminants from contact with your panel surfaces will void panel warranties.

M. Dissimilar Materials

Iron pipes for gas lines, structural steel framing for roof units, and similar installations must be painted to prevent rusting. Water run-off from rusted iron or steel will diminish the life of the panel and should be piped off the roof. Lead or copper cannot be used on the roof for any reason. **Never use a pencil to mark information on the roof**. The graphite used in pencil leads is not compatible with Galvalume® and will quickly destroy the protective coating. Failure to keep dissimilar materials from contact with your panel surfaces will void panel warranties.

N. Debris

At least once a year, clean the roof and gutters of leaves or other debris, which can include bird droppings, which can trap or pond water on the roof. Wash dirt and debris from the panel surface. Local conditions govern the frequency of necessary routine maintenance. It is the responsibility of the owner to keep the roof free and clean of debris and corrosive materials at all times.

O. Penetrations

Penetrations are pipes, curbs, and other items that penetrate a metal roof panel. Penetrations must be flashed properly to assure a watertight roof assembly. When inspecting the roof, you should see that pipe flashings have a weather tight seal at the panel surface. Ensure that the penetrations are secure and not prone to movement. Penetrations should not impede the flow of water. Curbs should be properly flashed, especially at the corners; skylight domes or panels should be checked for deterioration. As with any inspection, you should check for missing or loose fasteners, as well as possible corrosion of the metal panels.

P. Pipes, Supports and Condensate Lines

Pipes, conduits and supports for roof-supported units shall be of a non-corrosive or rust free material. Field painting of pipes and supports may be required to resist corrosion. Condensation from roof-top units shall be piped to interior or exterior locations. **Damage due to condensate water is not covered under the manufacturer's warranty.**

Q. The Roof in General

Observe all panel side laps to make sure the erector properly seamed each side lap. Also review the panel surface for pitted, worn, stained or rusted areas. If there are areas of concern found on the roof panels, contact Steelway. Remove all debris from the roof at least once a year. Make sure all workmen who enter the roof know to remove their trash and debris. This will simplify the maintenance process.

R. Sealants

Sealants are designed to be used as gaskets. In order for them to perform properly, clamping action is established by using fasteners at predetermined locations. Proper location of fasteners and sealants will assure that seals perform as designed. Sealants are effective only when applied between two pieces of metal and are not to be used topically. DO NOT remove any excess sealant that has seeped from any joint.

S. Sealant Removal

Precautions should be taken to prevent sealants from getting on the painted surface, as they may be difficult to remove. Sealants should be removed promptly with a solvent such as alcohol or a naphtha type of solvent. **Caution: It may be possible for solvents to extract materials from sealants that could stain the painted surface or could prove harmful to the sealants. Test a small inconspicuous area first, before wide spread use.**

T. Tape Sealant (Butyl Tape)

Tape sealant is applied between panel seams or joints as directed by the installation manual or erection details. Tape sealant is a non-skinning product that is effective when used between pieces of metal. It is not to be used topically.

U. Polyurethane Tube Sealant

Polyurethane tube sealant is a skinning product applied between trim laps or joints as directed by the installation manual or erection details. This sealant is typically used in areas that may be exposed to the elements.

V. Topical Coatings

The use of tar and other topical applied products should not be permitted or utilized as a method of leak repair. Many roof inspection companies recommend this type of repaire instead of diagnosing the root cause. The use of topical coatings will void panel warranties and is detrimental to the performance of the materials. **The use of any topical coating or other topical applied product is prohibited, unless specified by Steelway.**

W. Gutter and Downspouts

Clear all debris (leaves, dirt, etc.) from gutters and downspouts as required periodically and kept free-flowing at all times. The frequency required is dependent on the building's surroundings.

X. Foliage

While bushes and trees enhance the appearance of any building, their contact with the panel systems can produce scratches in the paint surface which can eventually cause problems. Keep bushes and trees trimmed back from the panel surfaces.

Y. Damaged Trim

Trims located around openings (corner trims, base trims, jamb trims, etc.) can sometimes get damaged by vehicle traffic and can lead to water tightness issues. Replacement trim can be obtained through your authorized Steelway Builder. If your Builder is not available, contact Steelway for additional service.

Z. Foot Traffic

Roof traffic is a leading cause of roof leaks. If routine traffic is unavoidable, have your builder install a walkway designed for use with your roof panel. When walking on the roof is required:

- Avoid stepping on the ridge caps.
- Avoid stepping on lap joints in roof panels and flashings.
- Avoid walking near roof curbs or other roof penetrations.
- Avoid stepping on panel ribs between purlins.
- Do NOT step in or on gutters or the gutter hanger system.
- Do NOT step on, or near, translucent panel skylights. **!!! CAUTION !!!** If skylights are present on your roof, extreme care should be exercised when working in those areas. **NEVER STEP DIRECTLY ON A SKYLIGHT, OR IN THE SURROUNDING AREA ADJACENT TO A SKYLIGHT.** Skylights may not support the weight of a worker, and bodily harm could result from a fall. Please follow all provincial and local safety guidelines applicable for the particular jurisdiction.

Accessories

A. General

Windows, doors, vents and louvers should be checked yearly for loose fasteners and any moving parts should be lubricated as necessary.

B. Gravity Vents / Roof Vents

Gravity roof vents are designed to allow inside air to be vented to the outside. The throat and dampers also can allow blowing rain and snow to enter the inside of the building. Inspect vents annually for debris, bird intrusions, etc. Inspect pull chains and lubricate mechanisms as required. Hard to operate roof vents are usually the result of pulleys and damper rods in need of lubrication or the chains and cords not being on track. Check operating hardware and lubricate as needed.

C. Roof Curbs

Heavy vibration from a mechanical unit can cause water leakage around a roof curb. Should this occur, check the sealant and fasteners around the curb. Any loose fasteners should be tightened or replaced with the next larger size. Any sealant or sealant that has deteriorated should be removed and replaced. If possible, isolate the unit from the curb to minimize vibration to the curb. Look around all roof hatches and curbs. Debris from the mechanical repairmen must be removed from the roof. Check for seated fasteners and ponding water. Water must flow freely around all curbs. Never use tar or topically applied sealants on the surface of the panels. Topically applied sealants will only conceal the cause of a problem. You may want to consider some type of permanent work platform around those units that require constant maintenance. Condensate lines from air conditioner units expel water contaminated with lead or copper. This must not be allowed to come in contact with the roof panel. These must be piped to the building exterior. Iron pipes for gas lines and the like, structural steel framing for roof units, etc. must be painted to prevent rusting. Water run-off from rusted iron or steel will diminish the life of the panel. **Lead or copper cannot be used on the roof for any reason.**

D. Pipe Flashings & Dektite®

Inspect pipe flashings and Dektites® annually. Water should not be allowed to pond on the pipe flashings or Dektite®. Remove any algae growth found on the pipe flashing or Dektite®.

E. Louvers

The operating hardware within a louver occasionally needs to be cleaned and a new light coat of oil or grease applied. This will improve the ease of operation.

F. Translucent Panels

Do not step or stand on the panel itself. Inspect translucent panels annually for loose fasteners, missing or damaged sealant, etc. Deterioration of the sealant may contribute to the long term integrity of the systems, which could eventually a leak. If any sealant is found damaged or missing, remove old material and replace with new sealant, designed for that application. Translucent panels may be cleaned with a mild nonabrasive cleanser. Avoid using any cleanser that may cause hazing. Do not remove warning stickers. Never paint over a translucent panel.

G. Overhead Doors

Overhead doors should be inspected on an annual basis by a competent person. Periodically check the attachment bolts around an overhead door and tighten as required. Call the door manufacturer or consult the door supplier should the door get out of alignment or the mechanical parts within the door become hard to operate.

H. Sliding Doors

Sliding doors should be inspected on an annual basis by a competent person. Periodically clean the sliding door tracks and lubricate the rollers to help assure ease of use. Call the door manufacturer or consult the door supplier should the door get out of alignment or the mechanical parts within the door become hard to operate.

HVAC/Climate Control Systems

A. Condensation

Note: This section has been prepared to assist the Owner in understanding and dealing with condensation. Its contents are based on information believed to be reliable. However, the prevention and elimination of condensation depends on the total design and construction of the building, which is beyond the responsibility of Steelway. Accordingly, information herein should not be regarded as a recommendation concerning steel building design and construction.

Without careful thought to the mechanical systems, the insulation system, and your methods of construction, the presence of condensation becomes a possibility.

B. Dew Point

The air we breathe is filled with many gases including water vapor. The amount of water the air can hold is proportional to the temperature. "Dew point" is described as the temperature at which air can no longer hold water vapor. That is the temperature when condensation occurs. Condensation will occur on any surface that is at or below the dew point temperature.

C. During Construction

Huge amounts of moisture can be introduced into the air during the construction stage. Excavated earth can introduce large amounts of water to the air. Often, the contractor will fully erect the framing, roof, walls, and insulation so it becomes easier to pour concrete inside. Heat may also be added to keep the concrete warm.

Under these circumstances, the interior of the building is literally flooded with moisture. As the air becomes saturated, condensation may occur on the steel, the insulation, or any other surface.

D. What Can Happen?

If condensation collects on the interior of the building, rust literally covers the frames and purlins. Sometimes the insulation becomes saturated, convincing the owner that the roof is defective. In colder conditions, ice forms on any surface where moist air comes in contact with a thermal break. Ice may form on purlins, door knobs, window cranks, or even the seams in the insulation. To prevent this, the moisture in the building must be removed with the use of fans or other means. By replacing moist, inside air with less humid outside air, the conditions inside become more balanced and condensation can be prevented.

E. The Construction Stage

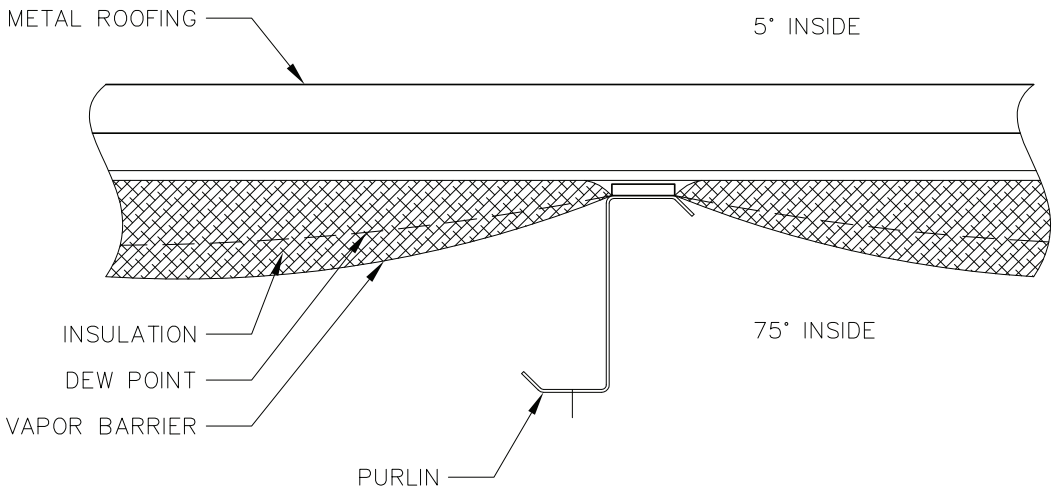
During construction, proper planning is essential for the control of condensation. Ventilation of the slab and foundation work is critical. Proper installation and design of the vapor barrier is also important. Remember, ample consideration to each area of construction is important to the success of the project.

F. Proper Design and Planning

Careful planning with regards to mechanical systems, methods of construction, insulation systems, and end use will insure that the owner's expectations are met.

G. Roof Section

The warm, moist air inside a building must be kept at a relative humidity level below the dew point. A vapor barrier alone cannot prevent condensation. The insulation design of the building, along with the construction techniques and the design of the air handling systems, work together to prevent damage due to condensation.



At some point in the range between indoor temperature and outdoor temperature the dew point is reached. The vapor barrier helps prevent warm, moist, inside air from condensing on the insulation.

H. Negative Pressure

Negative air pressure can affect the weather tightness of a building system. The phenomenon of negative air pressure is basically a condition of unbalanced air pressure between the inside air pressure and outside air pressure of the structure. When a condition exists with too much outgoing or exhausting air combined with a lack of incoming air, then a vacuum is created. When the vacuum is created, it naturally wants to pull outside air into the structure. When the pressures are high enough, they also begin to pull any potential standing water into the structure as well. In order to restore the balance and equalize the pressure, additional incoming air supply is required. This is typically accomplished with the addition of Make Up Air units added to the structure. Proper measuring and evaluation of needed Make Up Air supply requirements is typically provided by a qualified mechanical engineer or contractor. Negative pressure can be a concern and primary source for water-penetrations. The building owner should have a qualified mechanical engineer or contractor retained for proper testing of existing conditions to address the negative pressure. If negative pressure is evident on a project, then it needs to be addressed in full before attempting to address any additional pursuant leaks.

Insulation

Inspect the exterior of your building for exposed insulation and call your contractor immediately if found. Exposed insulation will wick and hold water against the ends and back side of the panels, causing rust to occur.

A. Insulation Facings

Insulation facings should be monitored continuously and a thorough inspection made once a year. Any holes or tears in the facing should be repaired with patch tape as supplied by the insulation supplier. Remember, even a perfectly installed barrier is not a perfect vapor barrier.

B. Condensation

If your building is experiencing excessive condensation, consult your HVAC contractor to assure that humidity levels and air movement are as projected. Also, have your building contractor check to make sure there are no obvious openings in the insulation splices. The unfaced surface of your insulation should always be in full contact with the exterior steel sheets.

C. Loose Insulation

Insulation tearing loose at various locations within the building (particularly at the eave or base) might not be the result of poor insulation, but rather a strong negative pressure inside the building resulting from improperly balanced HVAC system or an extra exhaust fan added after the erection of the structure. This, combined with a strong wind outside the building will often result in the insulation coming loose in these areas. The unfaced surface of your insulation should always be in full contact with the exterior steel sheets.

D. Roof Leaks

Should you observe evidence of a roof leak, such as water on the floor, stained ceiling tiles or a bubble in the insulation vapor barrier, contact your building contractor immediately. After the leak has been repaired, have your contractor cut the vapor barrier where the water has collected to allow the wet insulation to drain. Once the insulation has thoroughly dried, repair the vapour barrier with patch tape available from the insulation supplier. Ensure that the insulation is in full contact with the steel sheet. There are various reasons a roof leak might occur, such as:

- Improper Installation
- A lack of routine maintenance
- Damage to a component
- Deterioration of a component
- Insulation air space void that creates condensation

It is also possible that a leak might not be the result of the above referenced conditions, but rather the result of a strong negative pressure inside the building from an improperly balanced HVAC system. If you have any questions or concerns regarding specific roof leaks on your building, contact your authorized Steelway Builder. If your Builder is not available, contact Steelway for additional service.

Ice & Snow Buildup

You should be familiar with the roof load specified for your building regarding snow and live loads. Any significant accumulation of snow and ice may threaten the structural integrity of your roof if it approaches or exceeds the design roof capacity. In the event of severe winter storms, the accumulation of snow and ice should be carefully monitored and frequent inspections made to detect any deflection of the roof system, damming or clogging of gutter systems, ponding or unusual drifting conditions. Snow will build up in areas around firewalls, parapet walls, valleys, dormers, and on lower roof levels where a roof step occurs. Since the density of snow varies depending on weather conditions during and after a snow fall, it is not possible to determine a single value for the allowable height of snow that a building can safely support.

The underlying snow density increases due to melting from the building heat loss and as water is absorbed from the melting snow above. As weather and temperature changes continue, ice may build up under the snow layers, further increasing the building roof loading intensity. This ice build-up also causes additional water back-up on the roof deck. The most severe condition occurs when rain falls on a roof system already loaded by snow. In this case, the snow absorbs the rain water, and loads can approach the weight of water (62.4 pounds per cubic foot, or 5.2 pounds per inch of depth). This condition must be monitored with extreme caution.

Excessive ice and snow should be removed from roof areas. The removal of snow and ice is dangerous and should be performed by experienced persons, in order to avoid damage to the roof or the structure. Appropriate precautions should be taken to minimize the risk of injury on the roof during hazardous conditions. Excessive ice and snow removal is particularly important in gutter areas (eaves and valleys) and in areas of the roof sheltered from wind (behind facades, stepped roof conditions, etc.).

If any evidence of structural distress is noticed, contact your authorized Steelway Builder, Steelway, or consult with a competent licensed structural engineer or professional for assistance in avoiding damage or catastrophic failure.

The following procedure may be used as a guideline for responding to roof overload conditions:

1. Visually inspect the roof system to identify unusual deflections of frames, purlins, or joists. Starting in this area, remove approximately one-half of the snow depth in a pattern that does not cause an unbalanced loading condition on the frames or purlins.
2. In general, the shoveling pattern should progress from each endwall of the building towards the center. On larger roof areas, additional people working from the center of the building to the ends is recommended.
3. Along the building width, remove snow from the eave towards the ridge, sliding the snow off the roof over the gutter. On gabled buildings, remove the snow on both sides of the ridge at the same time.
4. Remove the remaining half of the snow depth in the same manner as described above.
5. Never use metal shovels or “scrape” the roof down to the surface of the panel. Remember, the objective is to relieve the excess loading condition due to the weight of the snow, not to completely clear the roof of all snow and ice. Attempting to scrape the roof will damage the finish and create roof leaks.
6. Keep gutters, downspouts and roof drains open and free flowing to prevent water back up and ice build-up on the roof system. Ice damming conditions are especially likely on the north side of a building and in shaded areas. Installing heat tape in gutters and downspouts is highly recommended, however, heat tapes may not be 100% effective in extremely low temperatures and should be checked regularly.
7. Watch for extreme deflections and listen for unusual noises when snow and ice build-up conditions exist.

Safety Guidelines

1. Always provide proper safety precautions when working on the roof.
2. Be aware of Translucent Roof Panel locations, as they are not intended to support foot traffic loads.
3. Be cautious of snow or ice breaking away and sliding down the roof, even on low slope buildings. Metal roof systems are extremely slippery when wet.
4. Use extreme care when working along the edge of the roof.
5. Never send one person alone on a roof to remove snow.

Steelway does not make any recommendation on when to remove snow from roofs, it is up to the individual property owner to consider the benefits and dangers of snow removal and decide their own course of action.

The best preventive maintenance that one can do is to perform scheduled annual inspections to identify and solve problems as they occur. This will help to optimize the service life of the building, keep the building aesthetically pleasing, functional, and weather tight to protect your products, your facilities, and your personnel. This inspection will require a critical examination of both the interior and exterior components of existing assemblies, cladding, doors, windows, cranes, and flashings. Keeping a log of your maintenance work will help you maintain a schedule as well as document what steps were taken, and when. Any preventive or corrective maintenance procedures should be designed to keep the building in a weatherproof condition. Any modifications found to the structural systems during your inspection must be reported to Steelway. By making field modifications before consulting Steelway, you may unknowingly void all warranties and cause the structure to become unsafe. You have also assumed all costs involved in the process.

If a manufacturer's or contractor's warranty is obtained for a roof assembly, one of the most important things a building owner can do is read and understand the terms and conditions of all warranties. The manufacturer's or contractor's warranty is a legal contract, and the warranty, for a variety of reasons, can be voided like any other contract. These reasons may include but are not limited to the following:

- Neglect by not performing inspections, repairs and routine maintenance in a timely manner.
- Failure by a building owner to notify the warrantor of leaks in the roof assembly.
- Failure by an owner to notify the warrantor before installing new rooftop equipment and penetrations or making any other modifications to the building system.
- Failure to have permanent repairs or maintenance performed in accordance with the warrantor instructions, such as:
    - Using material not manufactured or approved by the warrantor or using an incompatible material for a repair.
    - Work performed by a contractor not approved or authorized by Steelway or warrantor.
    - A change in the use of the building unless approved by the warrantor.
    - A change in ownership of the building; many warranties are non-transferable.

Building owners should maintain historical records of these inspections. A historical record should also be kept to provide the owner with data concerning the original erection of the building, who the erector was, the contractor, building manufacturer, warranty information, any special conditions, or any known contaminants that may be discharged onto the building surfaces. An owner should also use the historical record to document all subsequent inspections, maintenance and repairs performed on the building.

Before the inspection takes place, please refresh your knowledge by reading through the Preventive Maintenance Manual. The manual is a good reference and will go into more detail and explanation to help you complete a thorough inspection.

As always, apply all safety precautions and requirements as mandated by provincial and local requirements as well as rules of good common sense during your inspections.

Maintain and file each annual inspection report.

Preventive Maintenance
IV. Inspection Check List

INSPECTION PERFORMED BY:		A = ACCEPTABLE N = NOT ACCEPTABLE (REQUIRES IMMEDIATE ACTION)		
TITLE OR POSITION:				
INSPECTOR:				
	ITEM	A	N	ACTIONS TAKEN OR RECOMMENDED
STRUCTURAL FRAMING				
Main Frames & Rafters	Any modifications			
	Any additional collateral loads			
	Primer			
	Loose Bolts			
	Other			
Secondary Framing	Any modifications			
	Any additional collateral loads			
	Primer			
	Loose Bolts			
	Other			
Crane System (if applicable)	Annual inspection complete			
Brace Rods/Cables	Tension on rods/cables			
	Any bracing removed/altered			
	Other			
Building Alteration	Any openings added/removed			
	Any secondary framing been altered			
	Any additions to existing building			
	Other			
General	Contaminants			
	Corroded metal			
	Any active roof leaks apparent			
	Other			
WALLS				
Finish	Dirty or appear discolored			
	Seams/Joints			
	Appearance of Paint			
	Loose Panels			
	Worn Panels			
	Damaged Panels			
	Drill or Other Metal Shavings			
	Fasteners			
	Missing Fasteners			
	Exposed or Corroded Metal			
	Adhesion - Paint			

INSPECTION PERFORMED BY:		A = ACCEPTABLE N = NOT ACCEPTABLE (REQUIRES IMMEDIATE ACTION)		
TITLE OR POSITION:				
INSPECTOR:				
	ITEM	A	N	ACTIONS TAKEN OR RECOMMENDED
WALLS				
	Cracks			
	Pinholes			
	Other			
Wall Flashings	Roof to wall flashings			
	Base Flashing			
	Counter Flashing			
	Other			
General	Contaminants			
	Other			
ROOF				
Eaves	Roof Drains			
	Scuppers			
	Gutters			
	Downspout condition			
	Downspouts blocked or clogged			
	Displaced or loose joints			
	Any ponding water			
	Any debris/vegetation growth			
	Fasteners/Rivets			
	Corrosion of Metal			
	Sealants displaying signs of cracking			
	Elbows/Miters are open			
	Loose or displaced closures			
	Other			
RTL-24 Standing Seam (if applicable)	Fasteners			
	Engaged back-up plate/cinch straps			
	Other			
Storm Seal Panel Endlaps (if applicable)	Fasteners			
	Other			
Ridge	Any ponding water			
	Any debris/vegetation growth			
	Fasteners			
	Loose or Displaced closures			
	Damage from foot traffic			

Preventive Maintenance
IV. Inspection Check List

INSPECTION PERFORMED BY:		A = ACCEPTABLE N = NOT ACCEPTABLE (REQUIRES IMMEDIATE ACTION)		
TITLE OR POSITION:				
INSPECTOR:				
	ITEM	A	N	ACTIONS TAKEN OR RECOMMENDED
ROOF				
Ridge	Fasteners			
	Other			
High Eave	Fasteners			
	Any ponding water			
	Any debris/vegetation growth			
	Loose or displaced closures			
	Other			
Expansion Joints	Flashing Joints			
	Fasteners			
	Any ponding water			
	Any debris/vegetation growth			
	Other			
Step-down or Parapet Conditions	Flashing Joints			
	Fasteners			
	Any ponding water			
	Any debris/vegetation growth			
	Displaced or loose joints			
	Sealants displaying signs of cracking			
	Loose or displaced closures			
	Other			
General	Seams/Joints			
	Loose Panels			
	Worn Panels			
	Damaged Panels			
	Fasteners and washers			
	Fastener Holes			
	Contaminants			
	Any active roof leaks apparent			
	Adhesion - Paint			
	Exposed or corroded metal			
	Dirty or appear discoloured			
	Appearance of paint			
	Drill or other metal shavings			
	Cracks			
	Pinholes			

INSPECTION PERFORMED BY:		A = ACCEPTABLE N = NOT ACCEPTABLE (REQUIRES IMMEDIATE ACTION)		
TITLE OR POSITION:				
INSPECTOR:				
	ITEM	A	N	ACTIONS TAKEN OR RECOMMENDED
ROOF				
General	Missing or displaced metal			
	Damage from expansion/contraction			
	Dissimilar material painted			
	Sidelaps properly seamed			
	Sealants/ Caulking in place			
	Any topical sealants present			
	Corrosion of metal			
	Other			
Roof Curbs and Hatches	Any debris/vegetation growth			
	Fasteners			
	Any ponding water			
	Condensation Lines			
	Loose or displaced closures			
	Sealants displaying signs of cracking			
	Other			
Other Roof Penetrations	Flashed properly			
	Weather tight seal			
	Secured and not prone to movement			
	Deterioration of skylights/panels			
	Sealants displaying signs of cracking			
	Does not impede the flow of water			
	Exhaust gases causing corrosion			
	Other			
Flashings	Roof to wall flashings			
	Counter flashing			
	Coping			
	Ridge Caps			
	Hip Caps			
	Valleys			
	Valley gutters			
	Damage from foot traffic in valley			
	Fasteners			
	Any ponding water			
	Any debris/vegetation growth			
	Other			

Preventive Maintenance
IV. Inspection Check List

INSPECTION PERFORMED BY:		A = ACCEPTABLE N = NOT ACCEPTABLE (REQUIRES IMMEDIATE ACTION)		
TITLE OR POSITION:				
INSPECTOR:				
	ITEM	A	N	ACTIONS TAKEN OR RECOMMENDED
ACCESSORIES				
Doors	Hinges			
	Locksets/panic devices			
	Strike Plate			
	Weather stripping			
	Closure devices			
	Surface bolts/flush bolts			
	Glass Lights-Gazing			
	Glass lights-attaching screws			
	Door and frame finish			
	Corrosion of Metal			
	Other			
Windows	Hinges			
	Locksets/Panic devices			
	Glass Lights-Glazing			
	Glass Lights-Screws			
	Window and Frame Finish			
	Corrosion of Metal			
	Other			
Translucent Panels (if applicable)	Fasteners			
	Sealants in place			
	Cracks			
	Worn Panels			
	Damaged Panels			
	Loose Panels			
	Seams/Joints			
	Pinholes			
	Other			
Overhead Doors	Consult your supplier			
HVAC/Climate	Consult your supplier			
Additional Notes				

Sketch the roof plan below and indicate areas requiring corrective measures.

A warranty is a covenant of the law in which the seller of a product gives assurance of and binds themselves to conditionally defend the product. A warranty is not a one-sided agreement. Product warranties offered by Steelway are a pass through of the warranty issued by a mill or coil manufacturer to Steelway. They cover raw material supplied by a mill and the manufacture of building materials by Steelway. System warranties (weather tightness warranties) are provided by Steelway based on proper installation of the complete product system.

The product warranties offered by Steelway cover building materials only. Labour to disassemble, remove, and reinstall are not covered by these warranties. In the event of a claim, it is the Builder's responsibility to notify Steelway, make an initial inspection, and to make a sample of the product available to Steelway and the appropriate mill for study.

The warranties issued by Steelway contain the conditions by which the product must be manufactured, stored, installed, and maintained. If these guidelines are not met, it could render the warranty with Steelway and the mill void.

The Builder's responsibilities are outlined in the Warranty Program. This guide defines the types of warranties offered by Steelway and the Builder's role in servicing the process. The Warranty Program can be viewed on the Steelway website (steelway.com).

Warranties are issued when all of the Steelway invoices for the project are paid. No warranties will be issued until the project has been paid for in accordance with order terms and conditions.

The Responsibility of the Builder is:

- To ensure that the building materials are unloaded and stored properly upon receipt.
- To ensure that the building is carefully and thoroughly erected in the manner set forth by Steelway Building Systems erection documents.
- To maintain proper documentation on the progress and conditions of the building project.
- To follow-up on the building project during and after completion.
- To follow-up and collect samples in the event of a warranty claim.

Warranties issued by Steelway represent reasonable expectations of the products involved under normal conditions. History tells us that most warranty claims arise from improper storage, installation, or from foreign exterior irritants (debris, pollutants and the like). History also tells us that with the proper storage and construction techniques, the panel coverings offered by Steelway give owners years of low maintenance service.

Check with your Builder and/or Contractor to see what they offer as warranties. A warranty is never a replacement for professional installation or reasonable maintenance. There are a number of very well designed and manufactured products on the market, but unless the erector installs these products in accordance with the manufacturer's directions, their performance becomes unpredictable. Roofs that perform well for the first two to five years, will continue to perform many years thereafter. It is important to note that a leak found early can be repaired quickly and in accordance with manufacturer's recommendations.

Steelway will be happy to review the roof with our customer (and his erector). We will provide a written report to our customer of our findings. If corrections are required Steelway will provide our recommended repair. Site visits and written reports may incur a fee. Contact Steelway to discuss the service fees and arrange for an inspection.

Disclaimer

The information, material, and content in this section are intended for general information purposes only. Any use of content related to this material to any specific application, structure or condition should be based on independent evaluation, review, and verification of its unrestricted availability for such use, and determination of suitability for the application by professionally qualified personnel. No license under any Steelway patents or other proprietary interest is implied by the publication of this information. Those making use of or relying upon the information enclosed assume all risks and liability arising from such use or reliance.

Backup Plates	On Steelway's RTL-24 standing seam roof system, the plate is seated beneath the lower panel at an endlap. It is used along with the cinch strap to create proper clamping action in the connection.
Bar Joist	A name commonly used for "open web steel joists" used as roof system supports.
Black Rust	Also referred to as wet storage staining. A gray or black stain that occurs on Galvalume® material when water is introduced between tightly-stacked sheets. It is a fast developing corrosion that occurs due to the lack of an inhibiting oxide film. (see also White rust)
Builder	A party who, as a routine part of his business, buys steel building systems from a manufacturer for the purpose of resale.
Chalking	Formation of a fine powder on the surface of a paint film during normal weathering. It normally results in color fading.
Cinch Straps	On Steelway's RTL-24 standing seam roof system, the strap seated atop the lower panel at an endlap. It is used along with the backup plate to create proper clamping action in the connection.
Collateral Loads	The weight of additional permanent materials other than the building system, such as sprinklers, mechanical and electrical systems, partitions, or ceilings.
Crane	A machine designed to move material by means of a hoist.
Deflection	The displacement of a structural member or system under load.
Dektites	A commonly-used trade name referring to a rubber pipe flashing used at round roof penetrations.
Eave	The point at which a side wall meets a roof plane. See also High Eave.
Endlaps	The lap of two separate roof panels as they provide coverage down the slope of a roof. An endlap occurs when a roof width is greater than the available length of roof panels.
Erector	A party who assembles or erects a steel building system.
Expansion Joint	A break or space in construction to allow for thermal expansion and contraction of the materials used in the structures.
Flange Bracing	Angles attached at inner flanges of columns or rafters. Used to shorten the design unbraced length of the column or rafter, thereby making the member design more economical.
Framed Opening	Framing members and flashing which surround an opening.
Gable	The point at which an end wall meets a roof plane.
Girts	Cold formed secondary horizontal structural used as wall system supports.
Header	The horizontal structural member located at the top of a framed opening.
High Eave	On a single slope building, the point at which the high side wall meets a roof plane.

Insulation	Any material used in building construction to reduce heat transfer.
Lean-to	A structure having only one slope and depending upon another structure for partial support.
Longitudinal	The direction parallel to the ridge or sidewall of a building. Commonly, the direction referred to as the building length.
Manufacturer	A party who designs and fabricates a steel building system. The manufacturer converts raw material into finished steel building system components.
Manufacturer's Engineer	An engineer employed by a manufacturer who is in responsible charge of the structural design of a steel building system fabricated by the manufacturer.
Mezzanine	An intermediate level between floor and ceiling occupying a partial area of the floor space.
Peak	The uppermost point of a gable.
Piece Mark	A number given to each separate part of the building for identification. Also called a mark number and part number.
Ponding	The accumulation of water at low or irregular roof areas; also used to refer to the progressive accumulation of water from roof deflection due to rain loads.
Purlin	Cold formed secondary structural used as roof system supports.
Rafter	The main beam supporting the roof system.
Ridge	The highest line of a gabled roof; on a gabled roof system, the ridge is where the uppermost roof slopes converge.
RTL-24	Concealed fastener roof, Steelway's trapezoidal standing seam system.
Standing Seam	A roof system designed to be fastened to roof structural members through the use of clips rather than by through-fastening. Standing seam roof systems allow for thermal expansion and contraction and reduce the number of panel penetrations on roof systems. The direction parallel to the endwall of a building.
Steel Building	A complete integrated set of mutually dependent components and system assemblies that form a building including primary and secondary framing, covering and accessories, and are manufactured to permit inspection on site prior to assembly or erection.
Transverse	Referred to as the building width.
White Rust	Normally zinc oxide or aluminum oxide formed as the result of Galvalume® weathering; it is this property of Galvalume® which helps to protect the steel substrate beneath.
Wind Bracing	Bracing members in the roof and sidewall planes, normally cables or rods, which provide structural stability to the building system in resisting endwall wind loading. Also commonly referred to as X bracing.