



Owner's Manual
For
Preventive Maintenance
And
Warranty Compliance

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Congratulations on your purchase of a Varco-Pruden building. Varco-Pruden (VP) is recognized as a leader in the *Metal* Building industry, and as a member of the Metal Building Manufacturers' Association, adheres to all principles and regulations prescribed. You can expect your building to be the best the industry can offer; designed by experienced engineers, and fabricated from the highest quality materials by people thoroughly trained and dedicated to perform their job to the excellence prescribed.

This building has been designed by VP especially for you, according to the specifications supplied by your Builder. Any modification can jeopardize the design integrity of the building. Before removing, moving, or altering any building component, and before hanging any excessive loads from the building's members, be sure to call your Builder.

This booklet has been prepared to suggest preventative maintenance procedures to assure a lasting, quality product.

If you have any questions, please feel free to ask your Builder.

BE AWARE; TAKE CARE OF YOUR NEW BUILDING:

- Periodic traffic across the roof can cause leaks. If you intend to use the roof in this manner or need to access rooftop units, contact your Builder to install an approved walkway system that will keep foot traffic on panels to a minimum. Excessive foot traffic may affect the warranty.
- Caulking, sealants, rubber boots and plastics have limited lives. Periodic replacement, repair, re-sealing joints and replacing loose fasteners are considered routine building maintenance, which is *the* owner's responsibility and is not covered by any warranties.
- Excessive snow/ice storms can cause damage to the structural members as well as the water drainage system.
It is the owner's responsibility to remove snow that is considered excessive for your region, and free drains of ice. See item #15 for more details.
- The atmosphere contains elements that can shorten the life of your metal roof and wall.
To ensure warranty compliance, annually wash dirt and grime from your roof, particularly along the eave. Remove debris from the gutters and downspouts and wash dirt and snowdrift marks from the metal wall panels.
- Roof top HVAC Units MUST HAVE proper drainage plumbing using PVC materials such that condensation, leakage, solvents, and/or chemicals from the unit DO NOT come in contact with the roof surface or all warranties will be void.
- Corrosive Agents must not be allowed in contact with metal panels. Copper is particularly corrosive to steel and coatings. DO NOT allow *copper* materials of any source to come in contact with metal panels. DO NOT allow condensation of runoff from copper materials to contact metal panels. Lumber must not contact directly on metal panels. Chemicals leaching out of treated lumber will also cause damage.
- *Steel or Iron pipe must be painted or coated to prevent rust on panels*
- Soil coming in contact with painted metal wall panels will *damage* the factory baked on finish. Be sure to restrain soil from coming in contact with the painted surface of your wall panels. Also restrict foliage from brushing against the panels and remove any concrete or asphalt left on panels by the construction crew.
- Check exhaust stacks periodically for corrosion. If the exhaust is causing corrosion, extend the stack or coat panels with protective coating.

CARE AND MAINTENANCE OF PREPAINTED METAL SIDING AND ACCESSORIES

Cleaning Paint Surfaces

Dirt pickup may cause apparent discoloration of the paint when it has been exposed to dirt-laden atmospheres for long periods of time. Slight chalking may cause some change in appearance in areas of strong sunlight. A good cleaning will often restore the appearance of these buildings and render repainting unnecessary. An occasional light cleaning will help maintain a good appearance.

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 Tide per gallon of water for example) may be used. A soft bristle brush with a long handle may be useful. A clear water rinse should follow.

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. However, mildew can grow on dirt and spore deposits. To remove mildew the following solution is recommended:

- 1/3 cup detergent (e.g. Tide)
- 2/3 cup tri-sodium phosphate (e.g. DAP T.S.P.)
- 1-quart sodium hypochlorite 5% solution (e.g. Clorox)
- 3 quarts water

Strong solvent and abrasive type cleaners should be avoided. Caulking compounds, oil, grease, tars, wax and similar substances can be removed by wiping with a cloth soaked with mineral spirits. Wipe only contaminated areas and follow with detergent cleaning and thorough rinsing.

Panel Touch-Up

If panel finish is scratched or is to be repainted, contact a qualified contractor to ensure touch-up or paint is compatible with original finish. Touch-up pens are available in various colors from various vendors. Call your local Service Center for further assistance. See cover sheet for phone numbers.

Building Maintenance Checklist

1. SERVICE DOORS*:

Problem	What To Do?	Frequency!
Hinges = Screws coming loose Hard to swing	Tighten as required Oil as required	1 to 2 times a year
Lockset = Mechanism coming loose Tumbler/Latch sticking	Tighten as required Oil as required	As needed
Threshold = Coming loose Water leakage	Tighten or replace concrete fastener Apply additional caulk	As needed
Weather Stripping = Coming loose i.e.: Water/Air leak (depends on door usage)	Replace as required	As needed
Caulking = Door header (Trim)	Clean out old and replace as required	Every 2 years

2. OVERHEAD DOORS/OPENINGS:

Door Jambs Structural = Base and Head attachment loosening up (Due to Overhead Door movement)	Tighten Anchor Bolt Nuts and Nuts for Header to Jamb Connection as required	1 to 2 times a year
Door Jamb Trim = Damage and dented (Due to door traffic)	Replace Door Jamb Trim	As needed
Overhead Door Track = Loosening up (Due to Overhead Door operation)	Tighten Overhead Door Track bolts as required	1 or 2 times a year
Overhead Door = Not operating properly	Call Overhead Door company for adjustment	1 or 2 times a year

***Note:** VP Walk Doors and frames are supplied with *high quality* primer as standard. To extend the life of these items, it is recommended that a durable field applied finish paint be added.

Building Maintenance Checklist

3. WINDOWS*:

Problem	What To Do?	Frequency!
Water Leakage = Check caulking – (Due to movement and cracking of caulk)	Clean out old caulk and replace caulking	Approximately every 2 years
Window Operation = Horizontal Slide or Commercial: Units drag or crank mechanism catches	Clean dust and dirt out. Use light oil (3 in 1) or clear light grease on tracks or operators	As needed
Condensation	Check seal and possibly reglaze	As needed

4. LOUVERS*:

Water Leakage = Check caulking – (Due to movement and cracking)	Clean out old caulk and replace caulking	Approximately every 2 years
Louver Fin Operation = <i>Fins drag or will not move</i>	Clean dust and dirt out. Use light oil or light grease on operators	As needed

5. RIDGE VENTS:

Damper Inoperable = Damper chains or cords not on tracks; pulleys not correct alignment; drag or hard to operate	Check chains and/or cords for attachment. Oil or grease damper rods and pulleys.	As needed
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6. ROOF TOP FLASHING UNITS:

Water Leakage = Due to mechanical unit vibration and roof movement	Check sealant, mastic, fasteners. Clean out old mastic/sealant and replace with new. Replace or tighten loose fasteners. Special Note: Do not use “Black” roof tar for repair. Many consumer available caulks and mastics are unsuitable for metal buildings or may contain components that can damage some finishes. It is recommended that you contact your VP Builder for approved repair materials and procedures	Once a year
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***Note:** VP Windows and Louvers are supplied with a high quality *paint* as standard.

Building Maintenance Checklist

7. WALL PANELS – PAINTED SURFACES:

Problem	What To Do?	Frequency!
Dirt Pickup = Winds, Atmosphere	Light Cleaning = Simple wash with plain water	Once a year
Slight Chalking = Strong Sunlight	Heavy Dirt = 1/3 cup detergent (per gallon water), soft bristle brush, clean water rinse	As needed
Mildew = High humidity and dirt	Mildew = 1/3 cup detergent 2/3 cup T.S.P. 1 quart Clorox 3 quarts water Clean water rinse	As needed
Grease and Oil = Building use spills	Grease and Oil = Mineral spirits, detergent wash, clean water rinse	As needed

8. BASE OF WALL PANEL:

Discolor, Rust, Dirt, Mold, etc. (Due to Backfill too close, fertilizer left on base and base trim, weed spray on base, dirt piled on base trim)	Remove dirt; remove excess backfill; wash fertilizer off with water. Keep spray off panel. (Install 1' to 2' wide wash gravel strip at base)	As needed
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9. REPAIR DAMAGE TO ROOF PANELS:

Dented high ribs and broken seals of panels	Warn people not to walk on ribs or endlaps and call builder	Each time on the roof!
Excess "Trash" on panels	Always clean up	As needed
Vent pipes rusting	Field paint with approved paint	As needed
Stains from mechanical equipment	Field paint with approved paint	As needed
Surface rust from mechanical equipment	Field paint with approved paint	As needed
Service Equipment, People Traffic	Warn service equipment people above items	As needed

Building Maintenance Checklist

10. FASCIA TRIM ITEMS, EAVE, GUTTER, RAKE AND CORNERS:

Problem	What To Do?	Frequency!
Review Trim items for damage Gutters and <i>downspouts</i>	Replace items as required Clean out leaves, etc.	As needed Two (2) times a year, spring and fall

11. ICE AND SNOW BUILD-UP:

Extreme build-up will happen at roof height changes, steps in roof, valley gutters and fascia gutter	Caution must be taken – Remove excess snow and ice See “ <i>Snow Removal</i> ” section.	As needed
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12. INSULATION SYSTEM:

Condensation = Torn vapor barriers	Repair with patch tape	As needed
Improper Ventilation – unvented gas heaters	Contact H.V.A.C. contractor	As needed

13. CRANE SYSTEMS:

Loosening of Bolts: Runway hook bolts and other crane beams and connection Reason: Continuous use with no maintenance Improper lifting and hook-up system Removing of crane bracing system	Tighten and check all bolts	Two (2) times a year as minimum. More often if crane is heavily used.
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14. PRIMARY & SECONDARY FRAMING SHOP COAT (PAINT):

<p>Surface Rusting: Shop coat is intended for short-term exposure only during shipping and erection. Minor abrasion is inevitable during handling.</p>	<p>Minor rusting will not affect structural integrity and may be left as is.</p>	<p>As needed</p>
<p>Runs, Drips and Blemishes: Shop application is for short term protection and is not intended to have the appearance of a field applied coat.</p>	<p>Touch up with compatible primer or apply finish coat with appropriate preparation. Leave as is or may be field worked</p>	<p>As needed</p>

15. ROOF SNOW ACCUMULATION:

Roof snow accumulations in excess of specified project design loading criteria can cause significant distress to your building's structural system. 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 snowfall, it is not possible to determine a single value for the allowable height of snow that a building can safely support.

In addition, 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 rainwater, 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. As a general rule, normal snow densities (without rain on snow) range from 20 PCF to 30 PCF. That translates to approximately 2.5 lbs per inch of depth.

The following procedure may be used as a guideline for responding to roof overload conditions due to snow and ice build up conditions:

Snow Removal:

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. Snow should be removed in layers, gradually decreasing load as opposed to causing unbalanced load by clearing one area while other areas are fully loaded.
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 are 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. If possible, use draglines through the snow, working from the endwalls to avoid getting up on the roof.
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 panel of all snow and ice. Attempting to scrape the roof will result in broken fasteners, creating 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 can also be used as a precaution; however, heat tapes may not be 100% effective in extremely low temperatures and should be checked regularly.
7. Watch for large 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. Pay special attention to and be aware of Translucent Roof Panel locations. These panels are not intended to support roof 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.