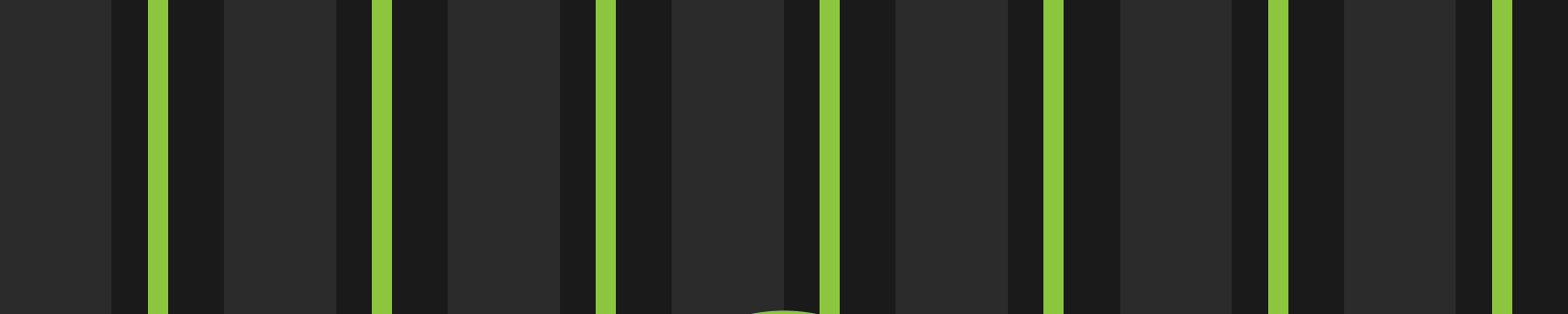




ON-SITE

PANEL FORMING

— MOBILE UNIT —

ON-SITE PANEL SUPPLY

Mobile Standing Seam Roll Forming • Roofing, Siding & Fencing Panels

DOUBLE-SIDED STANDING SEAM METAL FENCING

Installation Guide — Engineering Analysis, Comparisons & Step-by-Step Build

Get a Custom Quote (604) 780-2869 • onsitepanelsupply.com

Overview

A comprehensive engineering and installation guide for building ultra-strong, climb-resistant, zero-maintenance privacy fences using 12" standing seam metal panels. Match your fence to your roof for a cohesive property aesthetic.

Why Standing Seam Fencing?

Standing seam metal panels, traditionally used for roofing, create exceptional fences when installed double-sided on steel posts. The result is a fence that is stronger, more private, more secure, and longer-lasting than any wood or vinyl alternative — at a comparable cost per linear foot.

- **Climb Resistant** — Smooth surface on both sides provides zero footholds, even on steep slopes and mountainsides.
- **Firebreak Protection** — Acts as a non-combustible firebreak, stopping the fire chain that wood fences carry to homes.
- **Total Privacy** — No gaps, no slats, no see-through; double-sided panels create a solid wall on both sides.
- **Wind Resistant** — Double-sided construction creates a composite sandwich panel effect, increasing section modulus for lateral wind loads.
- **Tamper Proof** — Hidden fastener system means no exposed screws or bolts; panels are secured from the inside.
- **Match Your Roof** — Available in 20+ colors so your fence can match an existing standing seam roof.
- **Cost Effective** — About \$8.00 per linear foot, comparable to quality wood fencing, but lasts 40+ years with zero maintenance.
- **Slope & Mountain Ready** — Engineered for flat ground, hillsides, or steep mountain properties without becoming easy to climb over.

Engineering Analysis — Structural Deep Dive

From an engineering perspective, a double-sided standing seam fence behaves as a composite stressed-skin panel — similar in principle to a structural insulated panel (SIP). Here is how the structural mechanics work.

Composite Sandwich Panel Effect

When standing seam panels are installed on both sides of horizontal battens, the assembly behaves as a composite section. The two panel skins carry bending stresses while the battens act as the core, transferring shear forces — the same structural principle used in aircraft fuselages and modern building envelopes.

The standing seam ribs (approximately 1" to 1.75" tall) act as longitudinal stiffeners on each skin, significantly increasing the moment of inertia of the panel cross-section. When doubled, the effective section modulus for resisting lateral wind loads increases substantially compared to a single-sided fence.

In practical terms, this means a double-sided standing seam fence can withstand significantly higher wind speeds before deflecting to the same degree as a single-sided fence of the same height and post spacing.

Key Structural Specifications

Parameter	Specification
Panel Material	Galvalume steel
Panel Width	12" standing seam profile
Seam Height	1" to 1.75" (acts as stiffener rib)
Steel Yield Strength	50 ksi (Galvalume AZ55)
Panel Coating	SMP or PVDF (Kynar 500)
Corrosion Warranty	40+ years (manufacturer rated)
Post Material	2.5" or 3" steel square tube
Post Spacing	6 to 8 feet on center
Post Embedment	Minimum 1/3 total fence height
Footing Diameter	10" to 12" concrete
Footing Depth	Below frost line (36"+ in BC)
Batten/Rail Material	Hat channel or C-channel steel
Number of Rails	2 to 3 horizontal rails
Fence Height Range	4 to 8 feet typical (custom to 12'+)

Wind Load Considerations

A solid fence acts as a wind sail, and wind load is the primary structural design consideration. The wind pressure on a fence is calculated using the formula: $q = 0.00256 \times V^2 \times K_z \times K_d \times I$, where V is the basic wind speed in mph, K_z is the exposure factor, K_d is the directionality factor, and I is the importance factor.

For a typical 6-foot residential fence in British Columbia (design wind speed approximately 75–90 mph), the design wind pressure ranges from approximately 14 to 21 psf. This translates to a lateral force of 84 to 126 pounds per linear foot of fence at 6 feet tall.

The double-sided standing seam construction handles these loads through the composite panel action described above, with the steel posts and concrete footings providing the primary moment resistance at the base. Proper post spacing (6 to 8 feet) and embedment depth (minimum 36 inches in BC) are critical to achieving adequate structural performance.

Fence Type Comparison

Feature	Double-Sided Standing Seam	Wood Privacy	Vinyl/PVC	Chain Link
Lifespan	40+ years	15–20 years	20–30 years	15–20 years
Maintenance	None	Annual stain/seal	Occasional wash	Rust treatment
Privacy	100% (solid both sides)	90–95%	80–95%	0% (see-through)
Climb Resistance	Excellent (smooth)	Moderate	Good	Poor (easy to climb)
Wind Resistance	Excellent (composite)	Moderate	Poor (brittle)	Good (open mesh)
Cost / Linear Foot	~\$8.00	~\$8.37	~\$12–20	~\$5–8
Fire Resistance	Non-combustible	Combustible	Melts	Non-combustible
Appearance Both Sides	Yes (identical)	No (ugly side)	Yes	N/A
Paintable	Yes	Yes	No	Yes
Eco-Friendly	100% recyclable	Biodegradable	Not recyclable	Recyclable

Step-by-Step Installation Guide

Whether you are a DIY homeowner or a professional contractor, this step-by-step guide covers the complete installation process for a double-sided standing seam metal fence using steel posts and horizontal battens.

01 PLAN AND MEASURE

Mark your fence line using stakes and string. Measure the total linear footage and determine post locations. Posts should be spaced 6 to 8 feet on center. Account for gates, corners, and changes in grade. Check local zoning ordinances for height restrictions and setback requirements. In most BC municipalities, fences up to 6 feet do not require a permit, but always verify with your local authority.

02 SET STEEL POSTS

Dig post holes to a minimum depth of 36 inches (below the frost line in BC), 10 to 12 inches in diameter. Set 2.5-inch or 3-inch steel square tube posts in concrete, plumb in both directions. Allow concrete to cure 24 to 48 hours before proceeding. For a 6-foot fence, use 8-foot posts (2 feet below grade). Pre-drilled holes in the posts will receive the horizontal battens.

03 INSTALL HORIZONTAL BATTENS

Bolt steel hat channel or C-channel battens horizontally through the pre-drilled holes in the posts. Install 2 to 3 rails: one near the top (6 inches from top), one near the bottom (6 inches from grade), and optionally one at mid-height for fences over 6 feet. Use galvanized or stainless steel bolts with lock nuts. Ensure rails are level between posts — use a string line for long runs.

04 INSTALL FIRST SIDE PANELS

Starting at one end, attach 12-inch standing seam panels vertically to the horizontal battens on one side. Panels engage with each other via the standing seam interlock. Use self-drilling screws through the panel into the battens at each rail location, ensuring each panel is plumb before securing. Cut the final panel to width using tin snips or a nibbler — never an abrasive cut-off wheel on coated panels.

Step-by-Step Installation Guide (continued)

05 INSTALL SECOND SIDE PANELS

Repeat the panel installation on the opposite side of the battens. This creates the double-sided sandwich construction. The second side panels should be offset by half a panel width (6 inches) from the first side to stagger the seam locations — this improves both aesthetics and structural performance. Secure to the same battens from the opposite side.

06 INSTALL TRIM AND CAPS

Install J-channel or Z-trim along the top edge to cap the panels and create a clean finished look. Install a drip edge or ground trim at the bottom if desired. For corners, use pre-formed corner trim or bend J-channel to create inside and outside corners. All trim should match the panel color for a seamless appearance.

07 INSTALL GATES

Build gate frames from steel square tube (matching the posts) welded or bolted into a rectangular frame with a diagonal brace. Attach standing seam panels to the gate frame on both sides using the same method as the fence sections. Hang gates using heavy-duty steel hinges rated for the gate weight. Install a latch or lock mechanism. For wider openings, consider a sliding gate on a track.

Tools & Materials Checklist

Tools

- Post hole digger or power auger
- Level (4-foot recommended)
- Tape measure (25-foot minimum)
- String line and stakes
- Drill/impact driver with hex/socket bits
- Tin snips (left, right, straight cut)
- Nibbler tool (for clean cuts)
- Wuko bender or hand seamer (for trim)
- Socket wrench set
- Chalk line
- Safety glasses and cut-resistant gloves
- Mixing tub and trowel (for concrete)

Materials

- 12" standing seam panels (2× linear footage ÷ panel coverage)
- Steel square tube posts (2.5" or 3", length = fence height + 2')
- Steel hat channel or C-channel battens (2–3 per bay)
- Galvanized bolts, nuts, washers
- Self-drilling screws
- Pre-mixed concrete (2 bags per post)
- J-channel or Z-trim for edges
- Corner trim (inside/outside corners)
- Gate hardware (hinges, latch, diagonal bracing)
- Touch-up paint (matching panel color)

Important Notes

- **Never use abrasive cut-off wheels on coated panels.** The heat destroys the protective coating and creates sparks that embed in the finish, causing rust spots. Use tin snips, a nibbler, or a fine-toothed metal blade run in reverse.
- **Check local zoning ordinances before building.** Most BC municipalities allow fences up to 6 feet without a permit, but setback requirements, height limits near driveways, and corner visibility rules vary by jurisdiction.
- **Call before you dig.** Contact BC One Call (1-800-474-6886) at least 3 business days before digging post holes to have underground utilities located and marked.
- **Panels are paintable.** If you want a custom color or need to match an existing structure, standing seam panels accept paint well. Use a high-quality exterior metal primer followed by an acrylic latex topcoat.

Ready to Build Your Fence?

We fabricate 12-inch standing seam panels on-site in custom lengths and 20+ colors. No job too big or small — from a single backyard fence to a commercial perimeter.

Get a Quote: (604) 780-2869 • onsitepanelsupply.com