PERIMTEC

Fencing Reimagined

Commercial Modular Fence System

Advanced composite series engineered for commercial, institutional, municipal, and high-demand residential applications.

1 System 2 Materials 3 Testing 4 Install 5 Maintain

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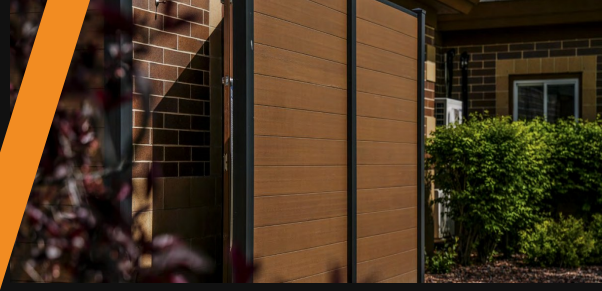


Perimtec Commercial Modular Fence System

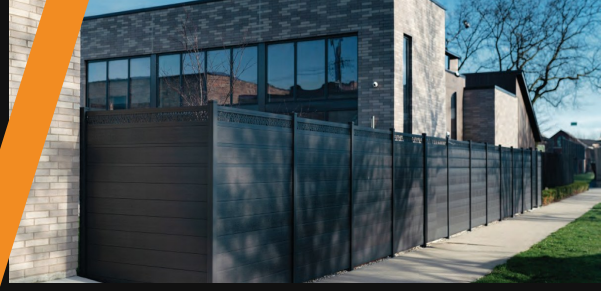
Advanced Composite Series - Engineered for High-Performance Applications

The Perimtec Commercial Modular Fence System is a premium, high-performance fencing solution engineered for commercial, institutional, municipal, and high-demand residential environments. Built on a durable modular framework, the system offers broad design flexibility - from solid privacy to decorative or semi-private configurations - while maintaining structural integrity and clean, modern aesthetics.

This commercial-grade system features 4 in. x 4 in. chambered aluminum posts with a 1/8 in. wall thickness and a 12 ft length, supporting fence heights up to 8 ft above grade. Combined with tongue-and-groove interlocking aluminum rails and wood-plastic composite (WPC) boards, the system provides a long-lasting, low-maintenance architectural fencing solution suitable for high-exposure installations.

Key Benefits

- Structural Performance - Engineered aluminum posts with 1/8 in. wall thickness support 8 ft heights and resist deflection under wind loads.
- Architectural Appeal - Modern horizontal design with matte-finished boards on both sides.
- Modular Flexibility - Standardized components enable full privacy, semi-private, and decorative configurations.
- Low Maintenance - WPC boards and powder-coated aluminum frames resist rot, corrosion, UV fading, and insect damage.
- Sustainability - Manufactured using recycled content and low-VOC materials suitable for green building projects.



Technical Summary

Specification	Detail
System Type	Modular Horizontal Privacy Fence
Components	Composite WPC Boards + Chambered Aluminum Posts + Interlocking Aluminum Rails
Posts	4 in. x 4 in. (100 mm x 100 mm) | Wall Thickness: 1/8 in. | Length: 12 ft
Rails	Aluminum, non-chambered, with integrated tongue-and-groove channels for board interlock
Boards	72 in. (1,830 mm) length composite infill
Fence Height	8 ft above grade (with 42 in. in-ground embedment)
Nominal Post Spacing	75 in. center-to-center
Applications	Commercial, Institutional, Municipal, Multi-Family Residential
CSI Division	32 31 23 - Plastic Fences and Gates, Exterior Improvements

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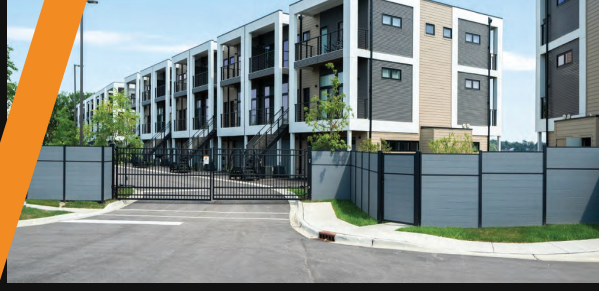
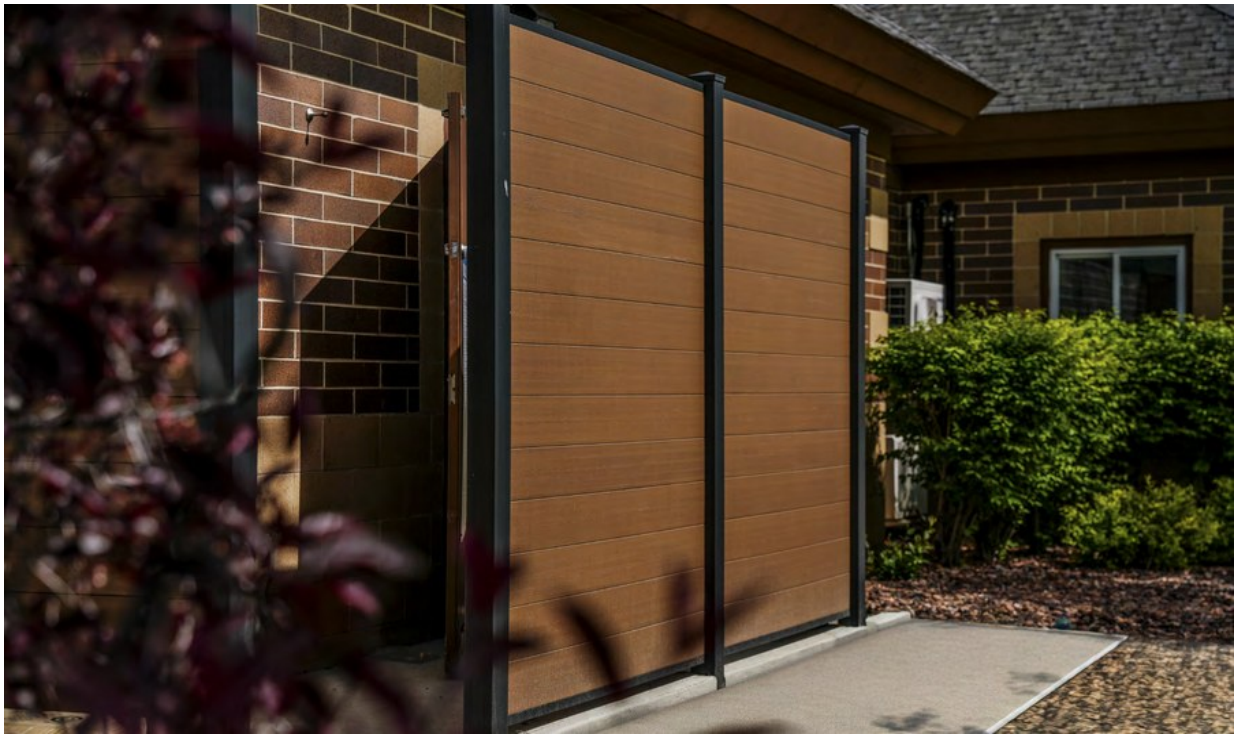


Commercial Fence Specifications

Parameter	Value
Height	96 inches (nominal)
Width	75 inches (nominal)
Weight (assembled panel)	160 lb
Ideal Applications	Commercial, institutional, and high-performance residential applications



WPC Material Composition

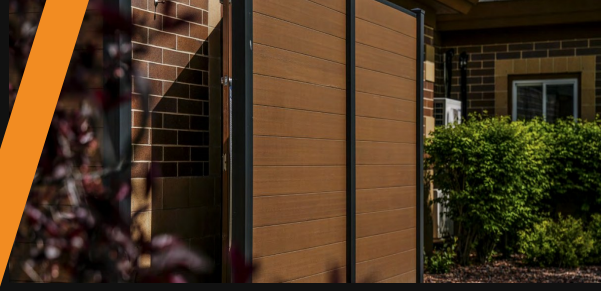
Composite Core Material: Wood-Plastic Composite (WPC)

The composite board is comprised of eucalyptus wood fiber and high-density polyethylene (HDPE), enhanced with additives for performance and durability. It features a full 360-degree co-extruded polymer cap for resistance to moisture, UV degradation, and staining, and is designed for dimensional stability, surface integrity, and low-maintenance outdoor use.

Component	Percentage (%)	Description
Wood Fiber	58.00%	60 mesh eucalyptus wood fiber
PE (Polyethylene)	27.00%	PE polymer particles
Talcum Powder	10.00%	1000 mesh talcum powder
Compatibilizer	3.00%	SM-3 (no precipitation)
Lubricant	1.80%	Compound type-610
Color Master Batch	0.20%	N326

Composite Board Dimensions

Parameter	Value
Length	1830 mm (72.05 in)
Width (face)	158 mm (6.22 in)
Width (with tongue)	166 mm (6.54 in)
Thickness	19.7 mm (0.78 in)
Weight	Approx. 9-9.5 lb per board



Composite Performance Testing

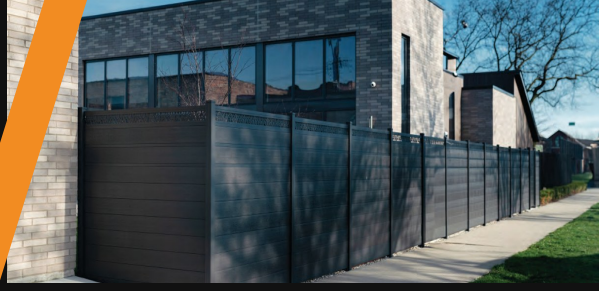
All testing conducted by SGS-CSTC Standards Technical Services (SGS).

Property	Test Standard	Result
Linear Thermal Expansion	ASTM D696-16	4.092 x 10^-5 / °C
Flexural Strength	ASTM D790-17	29.7 MPa
Flexural Modulus	ASTM D790-17	3450 MPa
Deflection Temp. Under Load (HDT)	ASTM D648-18	77.2°C @ 1.82 MPa
Creep-Recovery	ASTM D7031-11	82.0% recovery after 24h
Moisture-Based Expansion	ASTM D1037-12	0.004% change in length

Environmental Compliance (Composite)

All environmental and emissions testing conducted by SGS-CSTC Standards Technical Services (SGS).

Compliance Area	Test Standard	Result
Lead (Pb)	ASTM D3335	Not Detected (<100 mg/kg)
Cadmium (Cd)	ASTM D3335	Not Detected (<300 mg/kg)
Total VOCs	ASTM D5116	37.7 µg/m³
Formaldehyde	ASTM D5197	Not Detected
Acetaldehyde	ASTM D5197	Not Detected
California Proposition 65	-	Compliant



Fire Rating & Aluminum Frame Details

Fire Rating (Composite Boards)

Tested by SGS using ASTM E84. Class B rating meets many residential and commercial building codes; verify with local jurisdiction for project-specific requirements.

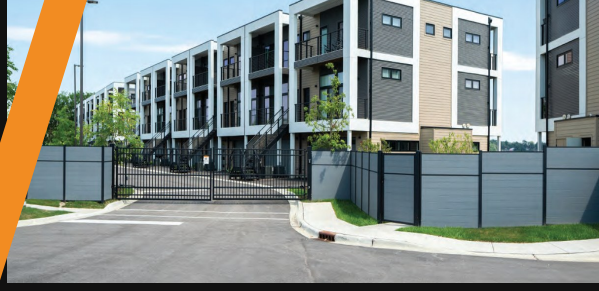
Property	Result
Flame Spread Index (FSI)	70
Smoke Developed Index	400
Classification	Class B - Interior Wall/Ceiling Use

Commercial Posts

Parameter	Value
Material	Aluminum Alloy 6063 T5
Dimensions	4 in. x 4 in. x 141.75 in. (L)
Wall Thickness	3 mm (0.125 in.)
Weight	45 lb per post
Finish	Matte black powder-coated, RAL 9011

Rails

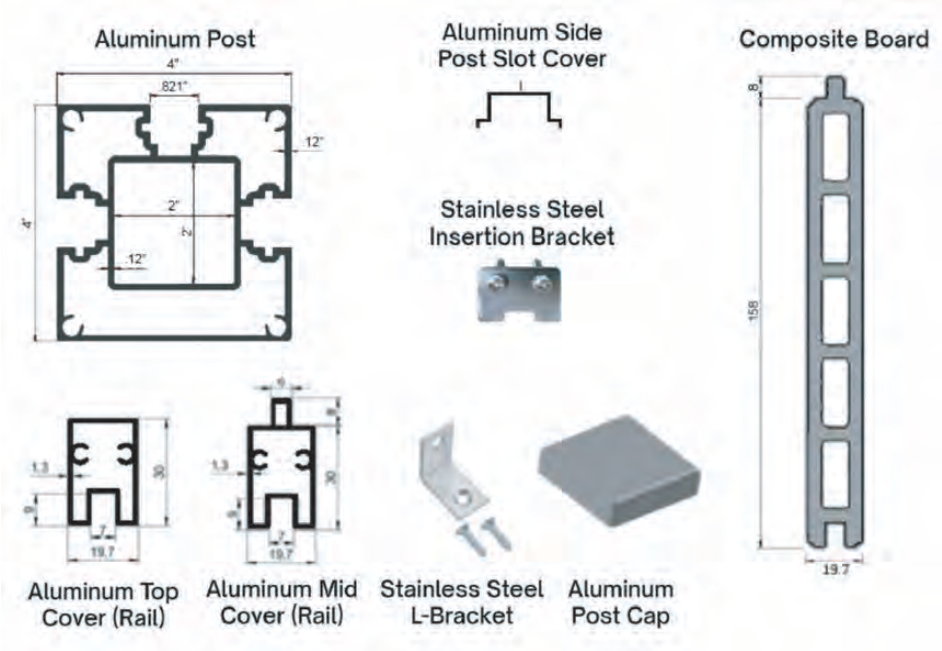
Parameter	Value
Material	Aluminum Alloy 6063 T5
Top Rail Dimensions	1.18 in. x 0.79 in. x 72 in. (L)
Middle/Bottom Rail Dimensions	1.50 in. x 0.79 in. x 72 in. (L) including tongue
Wall Thickness	0.0625 in.
Weight	2.2 lb per rail
Finish	Matte black powder-coated, RAL 9011



Aluminum Alloy Selection: 6063 T5

- Enhanced Strength: Offers high tensile and yield strength, ideal for structural fence applications.
- Corrosion Resistance: Magnesium and silicon alloying enhances outdoor durability.
- Workability & Finish: Superior surface quality allows for precise manufacturing and powder coating.
- Environmental Performance: Suitable for coastal, high-UV, and high-wind environments.

Fence Components Diagrams



- Aluminum Post: Support structure, anchoring the fence and bearing the brunt of external forces.
- Aluminum Side Cover: Filler piece designed to cover unused slot openings in fence posts.
- Aluminum Top/Bottom Covers: Secondary support structures connecting posts and supporting panels.
- Insertion Bracket: Support bracket that attaches to rail ends and slides into interior post channels.
- L-Bracket: Right-angle bracket used to connect fence rails to posts.
- Composite (WPC) Slats: Tongue-and-groove infill board for stackable installation.

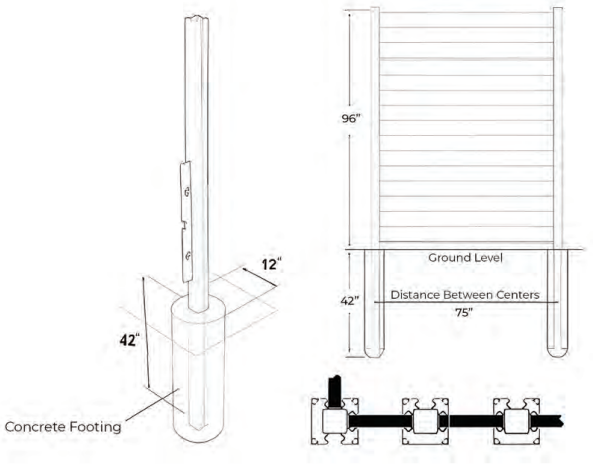
Installation Instructions

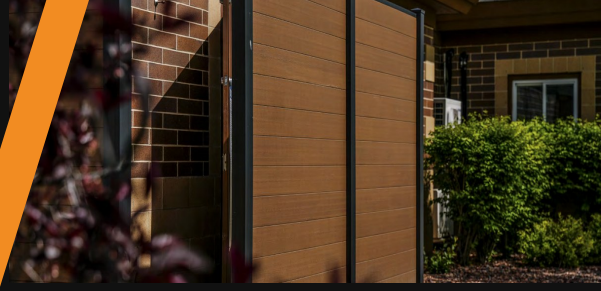
Item	Requirement
Post Depth	42 inches, with a 12-inch diameter hole, secured in concrete
Post Spacing	75 inches center-to-center

Installation Steps

- Mark Post Locations: Measure and mark post locations at 75-inch intervals.
- Dig Holes: Dig 42-inch deep holes with a 12-inch diameter.
- Set Posts: Insert posts into holes and secure with concrete. Ensure posts are level and aligned.
- Attach Rails and Boards: Secure rails to posts and attach composite boards.

Tip: Ensure concrete is fully cured before attaching rails and boards to achieve maximum stability.





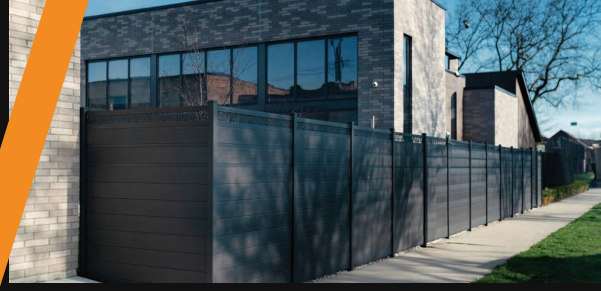
Wind Load Performance

Reference Only

Test Method: ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

- Configuration: 6 ft (H) x 6 ft (W) fully assembled fence section.
- Mounting: Posts installed into ground at a depth of approximately 500 mm (20 in.).
- Load Duration: 30-second sustained pressure.
- Result: No failure or permanent deformation at 110 mph wind load equivalent.
- Laboratory: Intertek.

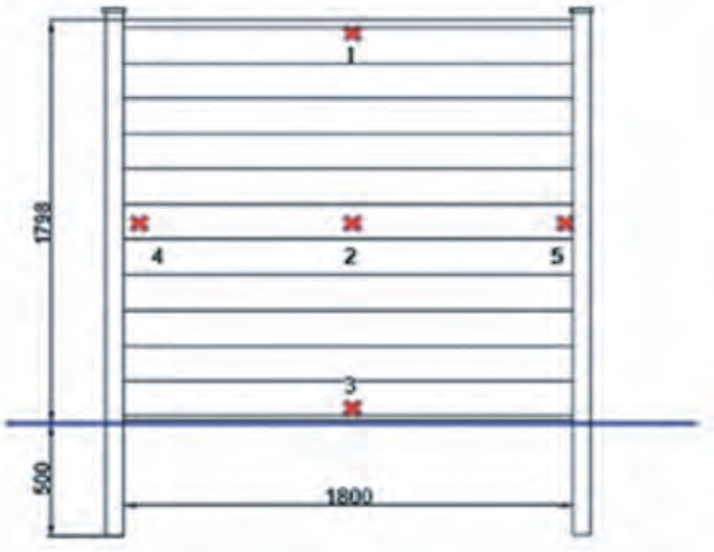
Note: This test was conducted using residential-grade 10 ft aluminum posts with a 1.4 mm wall thickness. The current commercial system uses 12 ft posts with a 3 mm wall thickness, significantly increasing structural capacity. Results provide a conservative benchmark. Actual wind load performance may vary depending on fence height, panel configuration, substrate, and mounting method. Always consult a licensed structural engineer for project-specific wind load and code compliance.

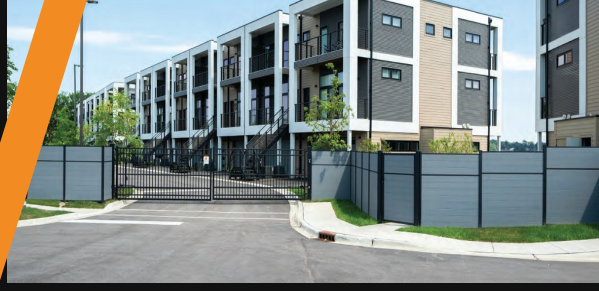


Wind Test Data & Transducer Positions

Wind Speed	Duration	Max Deflection (inches)				
		1	2	3	4	5
50 mph	72 sec	0.69	0.64	0.24	0.17	0.16
56 mph	65 sec	0.9	0.83	0.3	0.22	0.22
0 mph	Permanent Set	0.07	0.1	0.1	0.09	0.04
69 mph	52 sec	1.32	1.13	1.13	0.74	0.53
80 mph	45 sec	1.99	1.77	0.78	0.54	0.53
90 mph	40 sec	2.04	2.04	0.99	0.67	0.62
0 mph	Permanent Set	0.21	0.32	0.32	0.08	0.07
110 mph	33 sec	No damage was observed during test				

RESULT: SPECIMEN SUSTAINED MAXIMUM WIND LOAD OF 110 MPH AND NO DAMAGE DURING TEST





Recommended Applications

- Residential or commercial privacy fencing.
- Municipal perimeter and screening applications.
- Projects located in freeze/thaw, coastal, or high-sun exposure zones.
- Sustainable builds requiring recycled and low-VOC materials.

Performance Summary

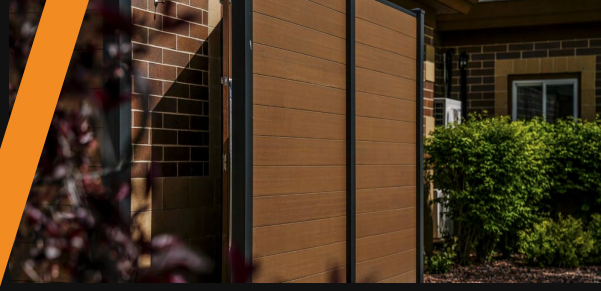
- SGS-certified composite and aluminum materials.
- Class B fire rating (ASTM E84).
- Low thermal and moisture expansion.
- Powder-coated 6063 T5 structural aluminum framing.
- Engineered for ease of installation and long-term durability.
- Powder coating meets Qualicoat Class 2 / AAMA 2604 standards.

Maintenance Guidelines

- Frequency: Bi-annual cleaning recommended.
- Composite Boards: Use gentle dish soap, hot water, and a soft, non-abrasive bristle brush or cloth.
- Aluminum Posts and Rails: Clean with a sponge using the same solution.
- Pre-Cleaning: Hose down surface debris before cleaning.

Warranty Information

- Warranty Period: 10-year commercial limited warranty.
- Coverage: Defects in materials.
- Exclusions: Normal wear and tear, improper installation, or damage caused by external factors.



Recommended Commercial Post Setting Depths

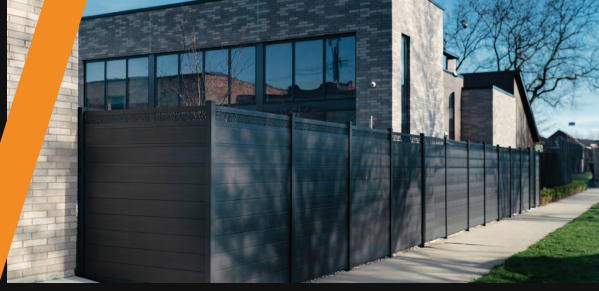
For optimal structural integrity and long-term performance, Perimtec recommends installing 4 in. x 4 in. aluminum posts (3 mm wall thickness) at a depth of 42 to 47 inches below grade, where ground conditions permit.

Why this depth matters

- Exceed Frostline Requirements: Helps prevent frost heave by setting posts below regional frost lines.
- Enhance Wind Resistance: Increases lateral load capacity for 8-foot fence heights, particularly in open or high-exposure areas.
- Maximize Leverage: Improves moment resistance and anchoring strength for heavier composite assemblies.

Installation Methods

- Concrete Footings: Preferred for maximum stability. Use a 12-inch diameter footing with 3,000 psi concrete and a 6-inch gravel base to help drainage and reduce frost-heave risk.
- Direct Burial: Suitable for stable, well-drained soils such as sandy loam. Backfill with compacted native soil or gravel.
- Avoid shallow installations: Depths less than 36 inches reduce load-bearing capacity and increase movement risk.



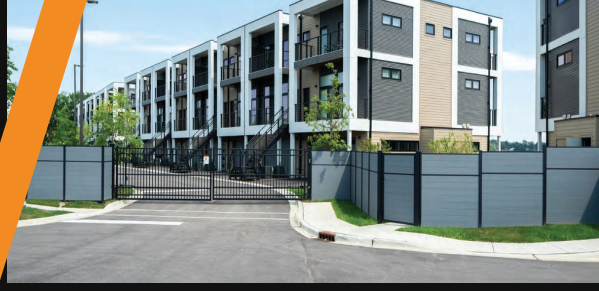
Soil Type Considerations

- Clay Soils: Expand and contract with moisture. Increase embedment depth to 47 inches and consider wider footings (14 inches) to improve stability.
- Sandy Soils: Typically allow for 42-inch depth. Ensure proper compaction during backfill to prevent settling.
- Rocky Soils: If subsurface obstructions prevent target depth, consult a local engineer. Alternative anchoring, such as surface-mounted base plates with mechanical fasteners, may be appropriate.

Cost and Practicality

- In low-frost regions, a 36-inch depth may be sufficient for lighter 6-foot applications under moderate wind conditions (<80 mph).
- The recommended 42 to 47-inch range provides consistent durability across diverse climates and is preferred for commercial-grade projects.
- Estimated cost increase for deeper installation: $10-15 per post, typically offset by reduced maintenance and improved long-term stability.

Note: Always evaluate site-specific conditions such as high water tables, compacted fill, or unstable soils before installation. Where conditions allow, deeper post embedment will significantly enhance structural performance.



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For more comprehensive technical details, such as advanced testing data, specific load-bearing capacities, or architectural integration details, contact Perimtec for project review.