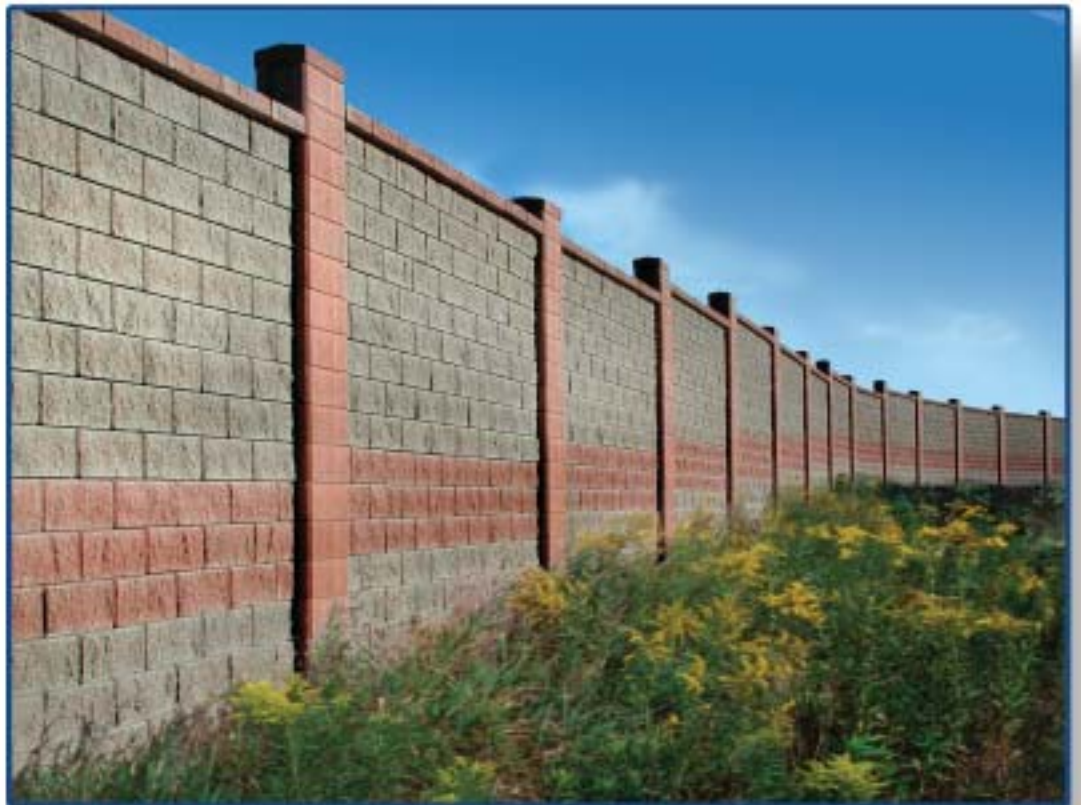


FENCE

Design Manual



allanblock.com

INTRODUCING THE NEXT STAGE IN MORTARLESS TECHNOLOGY, THE AB FENCE.

AB Fence™ is a mortarless concrete block fencing system. The patented, maintenance free interlocking blocks provide an attractive and effective solution to issues of sound and privacy with longevity and value.

It's what you have come to expect from Allan Block. Building on the success and 15-year company history, Allan Block is pleased to introduce a new application of mortarless technology™, the AB Fence system.

Five years of research, engineering and testing has produced a truly beautiful solution for sound, privacy and security in a fence.



The Allan Block commitment to providing quality mortarless solutions is demonstrated in every Allan Block product. From the beginning, Allan Block has been a pioneer in

mortarless technology. Evidenced by the sound engineering of



the retaining wall systems and the options offered by the Ashlar and Europa collections, Allan Block is committed to providing the best in mortarless solutions.

The latest solution from Allan Block is an easy-to-install, durable fence system. With applications ranging from municipal sound abatement structures to residential development and commercial



containment, the AB Fence is a truly versatile structure.



This Design Manual provides information on the applications for the AB Fence along with design specifications and engineering support.

Whether you are specifying the AB Fence system, or considering building with it for an upcoming project, this manual will help you understand the benefits of mortarless technology and the AB Fence.



For more information on all Allan Block products visit www.allanblock.com. This state-of-the-art website provides a personal, self-directed experience of the technology and systems that make Allan Block the leader in mortarless technology.

The versatility and performance of the AB Fence is unmatched. It provides an attractive solution for screening, containment and sound abatement. The function and form work together to provide a rugged structure in an aesthetically pleasing fence.

SCREENING AND CONTAINMENT

Communities are becoming more conscious of the relationship and proximity between commercial centers and surrounding neighborhoods. The AB Fence offers a cost effective and attractive means to separate residential areas from the noise and bustle of industrial and commercial areas. It can also be used to meet the screening and containment requirements in commercial development.

BEAUTIFICATION

The durability and aesthetics of the AB Fence make it an ideal solution for enhancing curb appeal. Use it alone or combine it with other fencing products to add elegance, beauty and increase privacy to perimeters and entrances. It allows you to create patterns with textures or colors, develop flowing curves, and adjust for the grade changes of your site.



SOUND BARRIERS

The AB Fence is ideally suited for sound barrier applications and provides transmission loss two times greater than wood fences. It provides the superior noise abatement, aesthetic style, durability and low maintenance of concrete masonry without the prohibitive costs associated with mortared masonry construction.

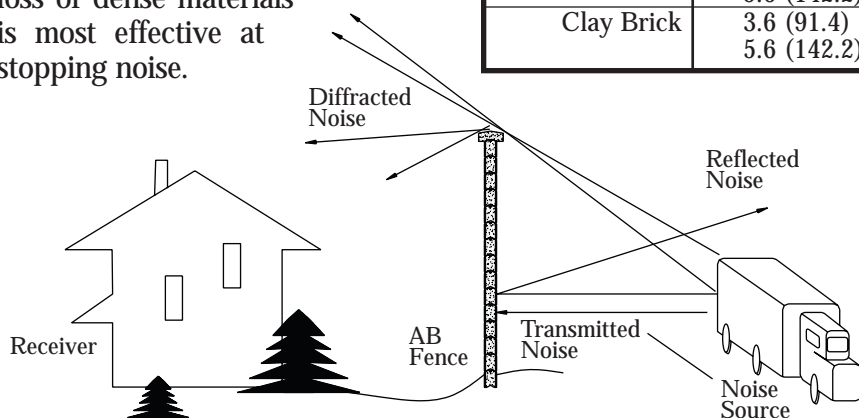
Sound barriers are solid obstructions built between the noise source and the receiver. An effective barrier will disperse sound along three paths; diffracted, reflected and transmitted. Sound diffracted (bent) over the top of the wall produces a "shadow zone" behind the barrier, which is a function of wall height, distance between the source, the barrier, and the receiver. Reflected noise is directed away from the receiver. Noise transmitted through the wall is a characteristic of the barrier material, determined by weight and stiffness and can be compared on the basis of transmission loss. The table shows that transmission loss of dense materials is most effective at stopping noise.



SCREENING
CONTAINMENT
BEAUTIFICATION
SOUND BARRIERS

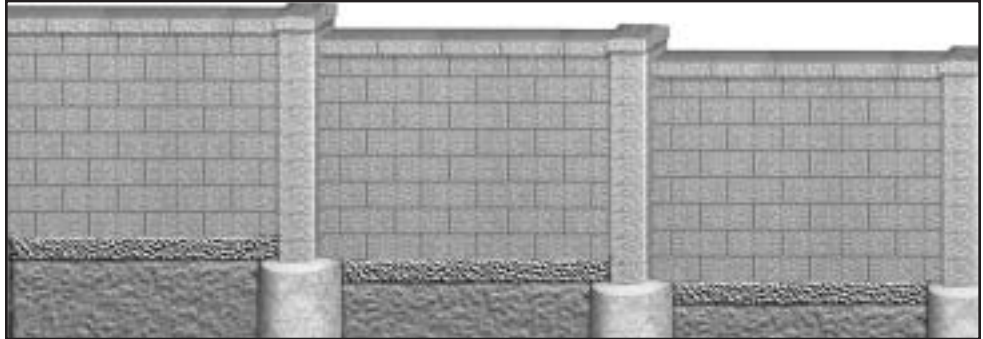


Material	Thickness Inches (mm)	Surface Area Weight lbs/ft ² (kg/m ²)	Transmission Loss, dB
Wood	Pine	0.5 (12.7)	16
		2.0 (50.8)	23
	Redwood	0.5 (12.7)	16
		2.0 (50.8)	23
	Cedar	0.5 (12.7)	15
		2.0 (50.8)	22
Metal	Aluminum	0.06 (1.5)	23
		0.25 (6.4)	27
	Steel	0.03 (0.8)	15
		0.06 (1.5)	22
Concrete	Light Weight	4.0 (101.6)	36
		6.0 (152.4)	39
	Sand-Gravel	4.0 (101.6)	40
Masonry	Concrete Block	3.6 (91.4)	32
		5.6 (142.2)	36
	Clay Brick	3.6 (91.4)	40
		5.6 (142.2)	47



DESIGN OPTIONS

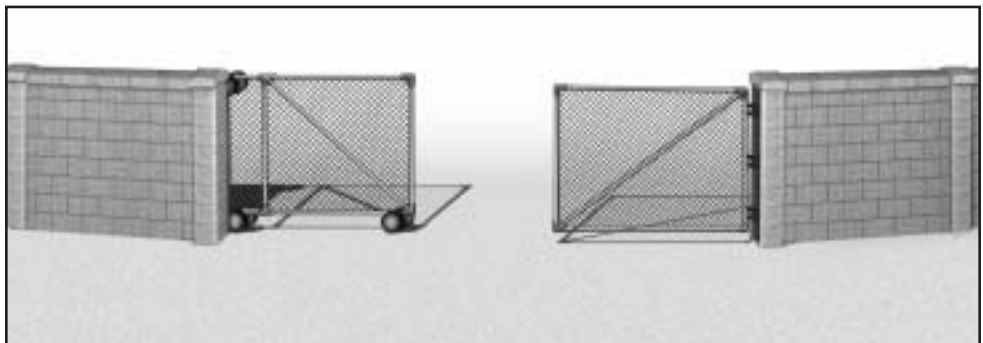
The flexibility of the AB Fence post and panel components provides the design versatility to conform to all of your project requirements. The AB Fence is fully engineered to economically accommodate various exposure and seismic conditions to a height of 15 plus feet (5 m).



The floating panels of the AB Fence do not require continuous footings, making steps and elevation transitions easy, while dramatically reducing construction costs.

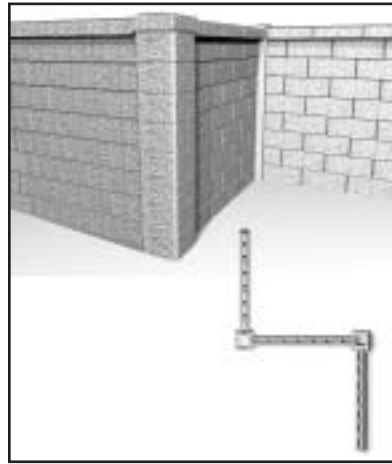


The solid masonry construction of AB Fence can accommodate grade differences on either side of the fence. Retaining wall and fence projects can be completed with one system.



The AB Fence easily accommodates gates and openings. The concrete-filled post blocks provide a secure backing for nearly any gate type and configuration.

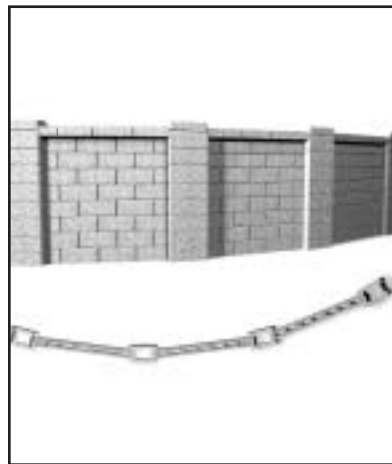
Articulations are easy with the AB Fence. The AB Corner Unit makes construction of 90° corners easy.



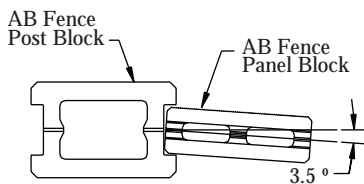
OPTIONS

- Easy grade transitions
- Retaining wall capabilities
- Fluid curves
- 90° corners, angles
- Decorative touches
- Gates

The post and panel connection offers the flexibility to create fluid curves and radiuses unmatched by other fence systems.

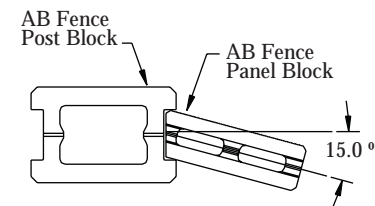


Standard Connection



Rotate the AB Fence panel block a maximum of 3.5° to create radiuses

Modified Connection



Cut and rotate the AB Fence panel block a maximum of 15.0° to create tighter radiuses

Minimum Radius Chart

Post/Panel Connection	Number of blocks per panel (panel width)					
	4	5	6	7	8	9
Standard	65 ft.	79 ft.	92 ft.	106 ft.	119 ft.	133 ft.
	20 m	24 m	28 m	32 m	36 m	40 m
Modified	20 ft.	24 ft.	28 ft.	33 ft.	37 ft.	41 ft.
	6 m	7 m	9 m	10 m	11 m	12 m

Other transitions can be achieved by mitering the post blocks to the desired angle.

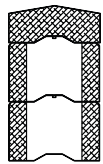
PRODUCT PROFILE

The AB Fence system combines the benefits of mortarless technology™ with the time proven performance of reinforced concrete. The patented ball and socket seating elements have revolutionized the process of constructing masonry structures. The three main structural components are the AB Fence Post, the AB Fence Panel Block and the AB Fence Capstone. Together they provide the ability to design and create a fence that meets the configuration requirements of each individual project. Use the AB Fence alone or in conjunction with an Allan Block Retaining Wall to address beautification and privacy; screening and containment; soil retention and sound abatement.



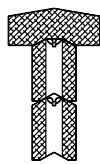
AB POST BLOCK

The AB Fence Post Block is the primary structural component of the system. Integrated into reinforced concrete piles, the AB Fence Post forms the backbone of the AB Fence system.



AB PANEL BLOCK

The AB Fence Panel Block is stacked between the rigid post structures. The interlocking design of the panel block creates a strong, solid barrier and easily transfers wind and seismic loads to the post structures.



AB CAPSTONE

The AB Fence Capstone is used to finish the top of the post and panels. The crowned configuration provides aesthetic appeal, and channels water away from the posts and panel.



AB CORNER UNIT

The AB Fence Corners are manufactured for 90° transitions.

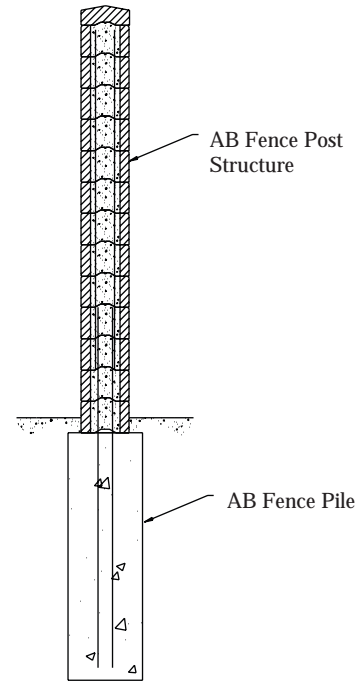
AB HALF PANEL UNIT

The AB Fence Half Panel units are manufactured to eliminate the need for field producing half size panel block by cutting standard panel blocks.



STRUCTURAL COLUMN ASSEMBLY

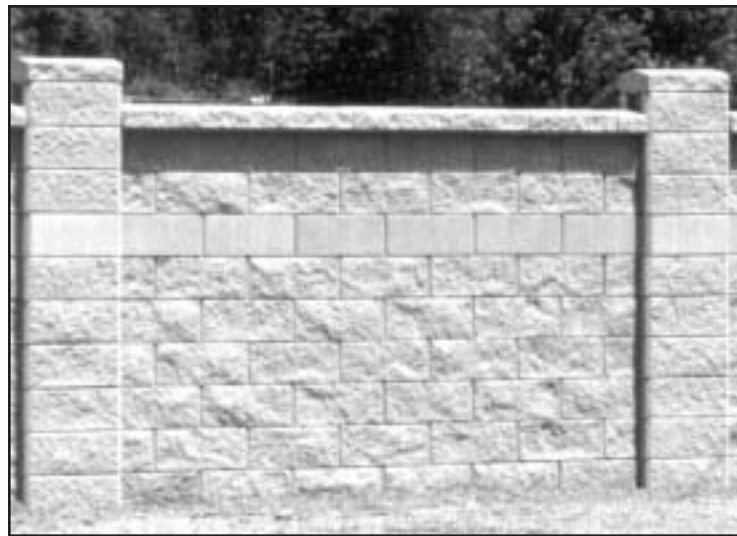
Structural column assemblies are constructed with concrete piles below grade and AB Fence Post Block reinforced with concrete grout and steel. The below grade pile acts to anchor the post structure and create the backbone of the AB Fence System. Increasing the depth and/or diameter of the pile component, or the column assembly develops more resistance to the forces being applied. The spacing between the AB Fence column assemblies can be adjusted to account for the actual site-specific loading to create an efficient design. These rigid column assemblies transfer wind or seismic loads from the AB Fence Panel Sections to the ground creating a safe, stable, engineered structure.



STRUCTURAL PANEL ASSEMBLY

AB Fence Panel assemblies are constructed as a semi rigid structure. Keyed into the AB Fence Post, these panels are able to move independently from the structural columns. The independence of the panels and column structures eliminates the necessity of constructing the panels below the local frost limits. The base course of AB Fence Panel Block is installed on a compacted gravel pad. Subsequent courses are dry stacked in place in a running bond pattern with strategically located rebar and grout. The rebar and grout frames the top and bottom of the panel to create a unified structure and increase the rigidity of the assembly.

The AB Fence Panel Block interlock to themselves through the patented ball and socket configuration. This interaction creates additional flexural stability compared to flat, mortared joints on typical masonry structures. Panel block assemblies combine the benefits of a rigid structure that transfer loads to the structural columns while being able to move with the expansion and contraction of the underlying soil.



Standard Product Specifications

Compressive strength 3000 psi (20.7 mpa) and product tolerance in accordance with ASTM C1372-97.

Freeze/thaw durability in accordance with ASTM C1372-97.

ENGINEERING METHODOLOGY

Allan Block has developed the technology for the use of the AB Fence as a mortarless product. This section provides an explanation of the engineering principals, terminology and methodology used in the design of the AB Fence.

TERMINOLOGY

The guidelines set by the 1997 UBC are followed for the design of the AB Fence, bond beams, pile size and steel requirements. The terminology for the design is defined below:

Ab (Area of steel for bond beam): The area of steel in one bar. When using #4 rebar, $Ab = 0.196 \text{ in}^2$ (1.26 mm^2).

As (Area of steel for post): The area of steel rebar in the post. When using #4 rebar, $As = 0.785 \text{ in}^2$ (5.06 cm^2).

Aw (Area of wing): The area of the wing is = 2.75 in (17.7 cm^2).

Awpanel (Area of the wing): This is the contact area between the panel and post.

b (Pile diameter): The diameter of the pile.

bp (Bond beam section width): This value is equal to two times the height of the block. $bp = 1.264 \text{ ft}$ (0.385 m).

bs (Inside length of post block): 1.22 ft (0.372 m).

Ce (Combined height, exposure and gust factor coefficient): This factor is dependent on the exposure type and the height of the fence. See UBC, Table 16-G for more details.

Cq (Pressure coefficient): The defined pressure coefficient for minor structures defined by the 1997 UBC, Table 16-H.

d (Pile Depth): The depth of the pile.

dp (Bond beam section height): This value is = 0.234 ft. (0.071 m).

ds: Distance from edge of post block to center of vertical steel reinforcement. When using #4 rebar, $ds = 0.677 \text{ ft}$ (0.21 m).

Exposure type: For each wind direction considered, an exposure category that adequately reflects the characteristics of ground surface irregularities shall be determined for the site at which the building or structure is to be constructed. See the 1997 UBC for more details.

fb (Compressive strength factor): Code requires a third of the value of the compressive strength ($1/3 f_m$) for our calculations.

fm (Uniaxial compressive strength of concrete): Assumed at a value of 3,000 psi (20.684 kN/m^2).

fs: This factor is based on a yield stress of 60,000 psi (413,685 kN/m^2) and is multiplied by 0.4.

H (Height of fence): Is the desired above grade fence height for the application.

Iw (Wind Importance factor): The wind importance factor is 1.0 for standard occupancy structures. See UBC, Table 16-K.

j: A coefficient used for internal moments and definition of neutral axis. When using #4 rebar, $j = 0.916$.

jp: A coefficient used for internal moments and definition of neutral axis. When using #4 rebar, $jp = 0.9033$.

k: A coefficient used for internal moments and definition of neutral axis. When using #4 rebar, $k = 0.252$.

kp: A coefficient used for internal moments and definition of neutral axis. When using #4 rebar, $kp = 0.2901$.

N_{BB} (Bond Beams): The number of bond beams in the panel.

P (Total wind force): The maximum calculated wind force applied to the fence.

Ps (Post spacing): The spacing from the center of a post to center of the next post.

qs (Wind stagnation pressure): This factor is dependent on the wind speed and fence height, see the 1997 UBC, Table 16-F for more details.

S_D (Soil type): This is required for calculation of the foundation. Soil types and their characteristics are outlined in Table 16-J of the 1997 UBC.

Seismic coefficient: Is defined per UBC 1997 Figure 16-2, where seismic zones are defined geographically.

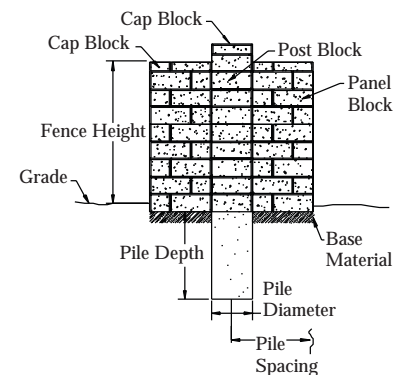
S_{factored}: The value for S_D is multiplied by 2 since we allow for $1/2$ " deflection at the surface. The number is also multiplied by $1/3$ due to the depth of the pilaster.

Swing (Allowable wing shear): The allowable wing shear is based on the available area of the wing, laboratory shear test results of pile blocks (270 psi (1,862 kN/m^2)) and a factor of safety of 3.

Swreq (Required wing shear): This value is the required shear for the wing.

Ta (Tributary area): The area of block from the center of a post to the next center of post.

V (Wind Speed): The wind speed according to UBC, Figure 16-1.



EXAMPLE

Allan Block has developed the technology for the use of the AB Fence as a mortarless product. This section provides an explanation of the engineering principals, terminology and methodology used in the design of the AB Fence.

Analyze an AB Fence with the following characteristics:

Fence Height: $H = 6$ ft (1.83m)

Wind Speed: $V = 80$ mph (129 Km/h) (UBC, Figure 16-1)

Seismic Coefficient: 0 (UBC 1997 Figure 16-2)

Exposure Type: B

Soil Type: Clay $S_D = 100$ psf (4.8 kN/m²) (a soil classified as Inorganic low to medium plasticity)

Based on this information and the 1997 UBC, we can perform the calculations for pile dimensions as follows:

$P_s = 11.6$ ft (3.5m)

$S_D = 100$ psf (4.8 kN/m²)

Assume values for pile dimensions:

Bond Beams: $N_{BB} = 2$ #4 bars

$C_e = 0.62$

Pile depth: $d = 6$ ft (1.8 m)

Sfactored: 66.7 psf (3.19 kN/m²)

$C_q = 1.4$

Pile diameter: $b = 1.5$ ft (0.46 m)

$I_w = 1.0$

$q_s = 12.3$ psf (589 N/m²)

Bars in post: 4 #4 bars

Calculate the tributary area: $T_a = P_s(H) = 69.6$ sq. ft (6.47 m²)

Total load applied from wind factor: $P = (C_e)(C_q)(q_s)(I_w) = 10.68$ psf (511 N/m²)

Use the following equations to find actual pile size:

$$\text{PileDepth} \left(\frac{A}{2}\right) 1 + \sqrt{1 + \frac{(4.36)(H/2)}{A}} \quad \text{where: } A = \frac{(2.3)(P)(T_a)}{(S_{\text{factored}})(d)(b)} = 2.85 \text{ ft (0.87 m)}$$

Continue the above calculation, changing your values for b and d , until the pile depth is greater than your assumed pile depth. After iterative calculations a pile depth of 5.0 ft (1.68m) and a pile width of 2.0 ft (0.61m) will be sufficient for this application.

Design Moments:

$$\text{Post: } M_o = \frac{(P)(P_s)(H^2)}{2} = 2,230 \text{ lb-ft (3.1 N-m)}$$

$$\text{Panel: } M_a = \frac{(P)(P_s^2)(H)}{8(N_{BB})} = 539 \text{ lb-ft (0.73 N-m)}$$

Compressive Stress Moments:

$$\text{Post: } M_{co} = \frac{(fb)(bs)(ds^2)(j)(k)}{2} = 9,293 \text{ lb-ft (15.88 N-m)}$$

$$\text{Panel: } M_{cp} = \frac{(fb)(bp)(dp^2)(jp)(kp)}{2} = 1,311 \text{ (1.95 N-m)}$$

Tensile Stress Moments:

$$\text{Post: } M_{tp} = f_s \left(\frac{A_s}{2}\right) (j)(ds) = 5,894 \text{ (15.12 N-m)}$$

$$\text{Panel: } M_{tb} = (f_s)(Ab)(jbb)(dp) = 1,023 \text{ lb-ft (1.36 N-m)}$$

Shear Stress:

Allowable shear stress in masonry is equal to the square root of the uniaxial compressive strength of the masonry $S_a = 55 \text{ lb/in}^2$ (379 kN/m²).

The calculated shear stress at the base of the post is:

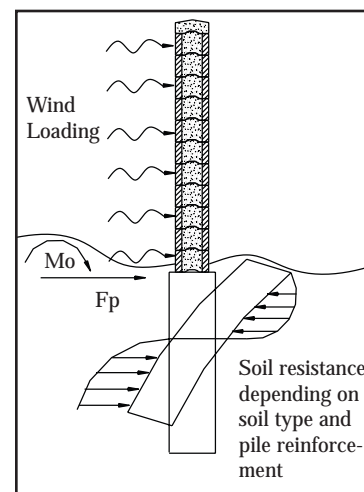
$$\text{Sreq} = \frac{P(T_a)}{bs(ds)} = 6 \text{ psi (58.6 kN/m}^2) \quad \text{Swing} = \frac{Aw(270\text{psi})}{3} = 2,970 \text{ lb/ft (43kN/m)}$$

The calculated shear is as follows:

$$a_{\text{wpanel}} = H(P_s - 1.469 \text{ ft}) \quad \text{Swreg} = \frac{0.5(a_{\text{wpanel}})(p)}{H} = 54 \text{ lb/ft (788 N/m)}$$

Make sure that all design values exceed the design criteria, by verifying the following:

$$\begin{array}{lll} M_o < M_{co} & M_a < M_{cp} & M_o < M_{tp} \\ M_a < M_{tb} & \text{Swreg} < \text{Swing} & \text{Sreq} < S_a \end{array}$$



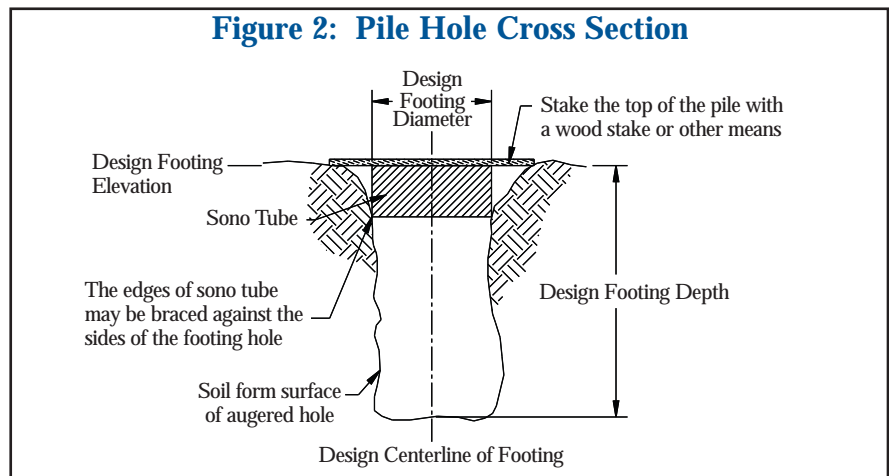
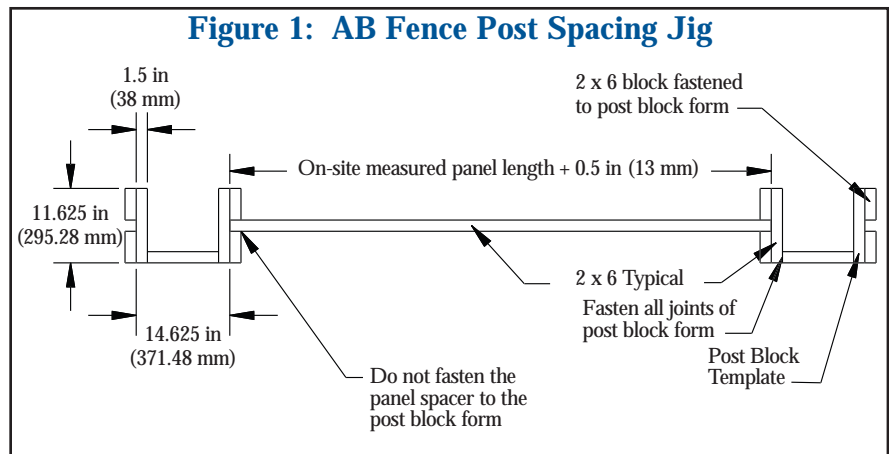
Note: For complete engineering details please contact the Allan Block Engineering Department at 1-800-899-5309.

INSTALLATION

The AB Fence System is designed to utilize the advantages of dry stacked masonry, providing an efficient and easy installation process. This section briefly describes the three steps involved in constructing an AB Fence. It includes variations depending on the conditions or requirements of a particular fence. The installation process can be broken down into layout, pile construction, and post and panel construction.

LAYOUT

- Excavate a trench along the fence alignment that is 6 in (152 mm) deep by 12 in (304 mm) wide.
- Mark out the center of each pile and establish offsets for future relocation. Suggested methods of marking the pile locations include using a string line to establish the overall layout of the wall and a steel chain to set the pile spacing. It is important to use off-set markers that will not be easily displaced.
- Construct a jig and template similar to Figure 1 for setting exact post block spacing and vertical steel reinforcement. Before producing the Panel Spacer, place the correct number of panel block end-to-end and measure panel length. This will assure an accurate jig length.
- Excavate the pile holes to the depth and diameter specified in the AB Fence design. The horizontal tolerance for the footing location is ± 1.0 in (25 mm).
- Use a minimum of 12 in (304 mm) of sonotube or alternate cylindrical tubing material with the same inside diameter as the pile diameter to form up the top of the pile hole.
- Use a laser level, transit or string level to set the top of the tubing to a maximum of 1 in (25 mm) below the design elevation of the pile. A mortar bed will be used to set the first post block. Figure 2 shows the typical pile hole cross section.



PILE CONSTRUCTION

- Pour concrete into the pile hole, maintaining the tolerances for the pile, horizontally ± 1.0 in (25 mm) and vertically -0.5 to -1 in (-12.7 mm to -25 mm).
- Immediately following the concrete pour the center of the piles must be located and marked.

- Using the steel placement template, place the vertical steel. The clear cover at the bottom of the footing is 3 in (76.2 mm) and the minimum lap splice requirements are 20 times the bar diameter. The length of steel should reflect these requirements and be installed to a horizontal tolerance of 0.5 in (12.7 mm).
- The vertical steel must be long enough to extend into the pile to within 3 in (76.2 mm) of the bottom and out of the top of the pile a sufficient length to set the first two post block and create a lap splice. Approximately 30 in (0.76 m) will be adequate.

POST AND PANEL CONSTRUCTION

- Fill the trench between piles with well graded compactable aggregate. Level and compact the aggregate to the finish elevation of the bottom of the fence.
- Set the first AB Fence post block using a 1 in (25 mm) maximum mortar bed. Ensure that the post block is level and spaced according to the design panel spacing.
- Stack a second post block, check them for plumb and level.
- Place a row of AB Fence panel blocks on the compacted granular aggregate base in a straight line from post to post. The panels must extend a minimum of 1 in (25 mm) into each post.
- Place a piece of rebar for the horizontal bond beams on the recesses formed into the AB Fence panel block. Stack a second course of panel blocks setting the vertical (head) joints align with the midpoint of the block on the course below in a running bond pattern. An AB Fence panel block will have to be cut to achieve a half block.
- Fill the cores of the first two courses of post and panel block with concrete grout. Vibrate the grout to consolidate.
- Stack additional post and panel block in maximum of 4 ft (1.2 m) lifts to the design elevation of the fence.
- Vertical steel should be placed in conjunction with the post block using lap splices where needed. It must extend to within 1 in (25 mm) of the top of the AB Fence post block.
- Horizontal steel should also be placed at the design locations for bond beam courses. A grout stop will have to be placed below each bond beam to confine the concrete grout to the bond beam courses.
- Care must be taken to keep the post and panel plumb and level. Seating the panel block with a dead blow hammer and shimming with high strength construction adhesive or asphalt shingles will ensure a straight fence.
- The AB Fence Capstones are set directly on top of the post and panel block. They must be adhered with two beads of construction adhesive.

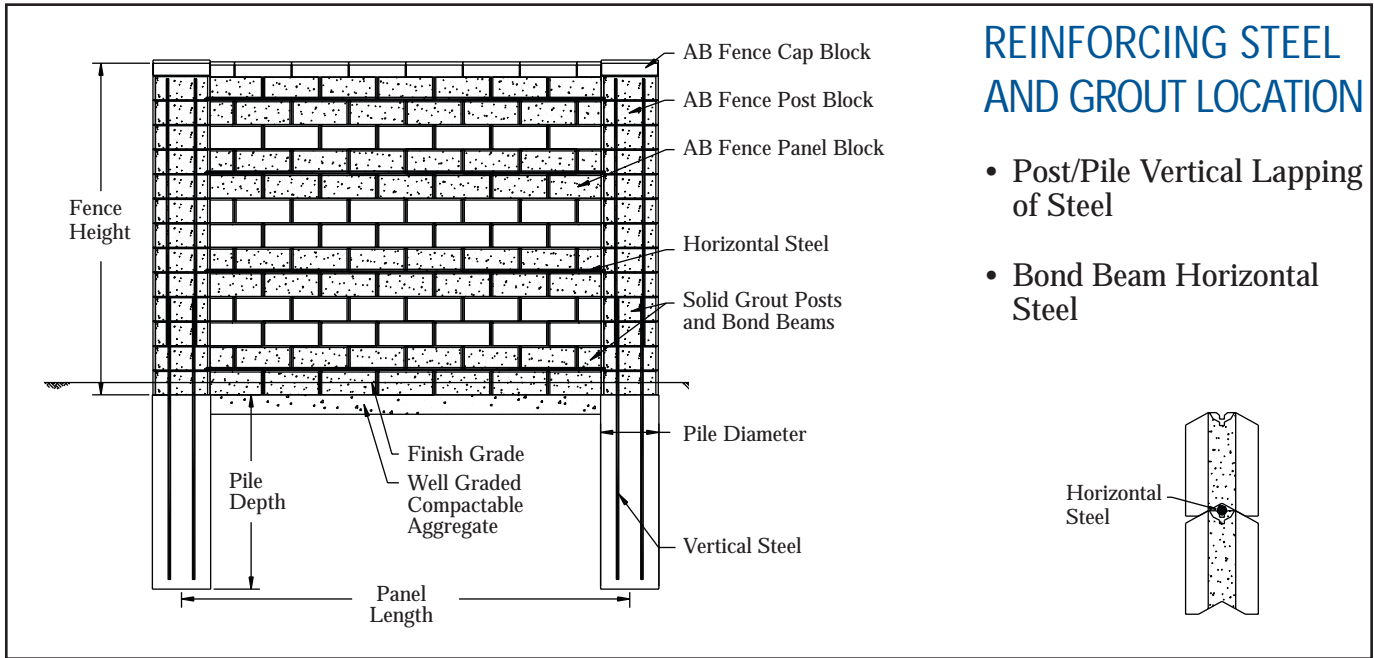


CONSTRUCTION

- Layout
- Pile Construction
- Post and Panel Construction

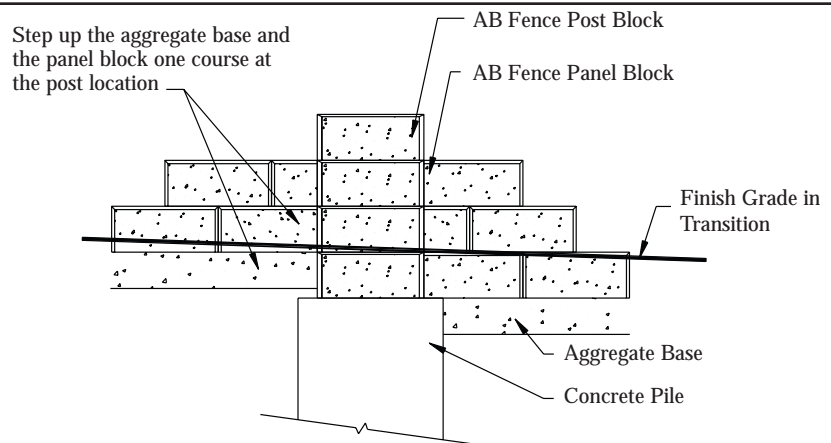
CONSTRUCTION DETAILS

The following drawings provide details for basic construction and design options available with the AB Fence System.



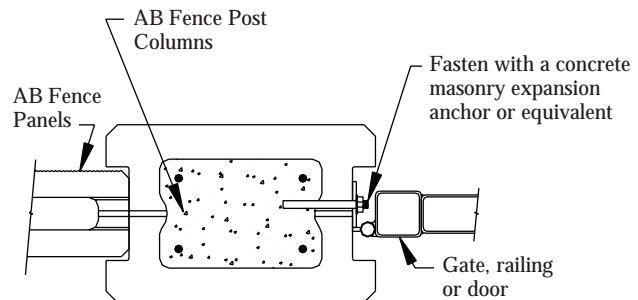
STEP UPS AND STEP DOWNS

- Follow Grade Transitions
- Step at Post Locations
- Step in Block Height Increments



GATES, RAILINGS OR DOORS

- AB Fence Post Columns
- Fastening



SPECIFICATIONS

SECTION 1

PART 1: GENERAL

1.1 Scope

Work includes furnishing and installing modular concrete block fencing system to the heights and lengths specified on the construction drawings and to the specifications listed herein.

1.2 Reference Standards

ASTM C1372-97 Standard Specifications for Segmental Retaining Wall Units.

1.3 Delivery Storage, and Handling

- A. Installer shall check the materials upon delivery to assure proper material has been received.
- B. Installer shall prevent excessive mud, concrete, and like materials from coming in contact with the materials.
- C. Materials shall be protected from damage once on site. Damaged materials including cracked and chipped block beyond allowances provided for in ASTM C1372-97 must not be used in the fence.

PART 2: MATERIALS

2.1 AB Fence Systems Units

- A. System units shall be AB Fence System units as produced by a licensed manufacturer.
- B. System units shall have a minimum 28 day compressive strength of 3000 psi (20.7 MPa) in accordance with ASTM C1372-97. The concrete units shall have adequate freeze-thaw protection with an average absorption rate of 7.5 lb/ft³ (120 kg/m³) for northern climates and 10 lb/ft³ (160 kg/m³) for southern climates.
- C. Exterior dimensions shall be uniform and consistent. Maximum dimensional deviations shall be 1/8 in (3 mm), not including textured face.
- D. Exterior shall be textured or striated or a combination of both. Color as specified by the project owner.

2.2 Pile and Post Concrete

- A. Concrete used to construct the piles and fill the post block must have a minimum compressive strength of 3000 psi (20.7 MPa).

2.3 Concrete Grout

- A. Concrete grout used as unit core fill for bond beam panel blocks shall conform to ASTM C476 and have a minimum compressive strength of 3000 psi (20.7 MPa) with Fine Aggregate Grading Requirements defined by ASTM F404.

2.4 Steel Reinforcement

- A. All reinforcing bars shall be deformed billet steel conforming to ASTM A615 grade 60. Bars shall be branded by the manufacturer with bar size and grade of steel, and certified mill reports shall be submitted for record.

2.5 Construction Adhesive

- A. Exterior grade construction adhesive used to adhere the cap block to both the posts and panels shall be PL Premium as manufactured by OSI Sealants, Inc. (or equivalent).

2.6 Shimming Material

- A. Material used for permanent shimming must be non degradable.

PART 3: SYSTEM CONSTRUCTION

3.1 Layout

- A. Excavate a 6 in (150 mm) deep by 12 in (300 mm) wide trench along the centerline of the AB Fence the entire length of the fence.
- B. To ensure accurate post spacing, installer shall follow all guidelines set forth in the AB Fence Installation Guide.
- C. The center of each pile hole must be located and drilled to a maximum horizontal tolerance of ±1 in (25 mm). The depth and diameter must be at least that specified in design.
- D. The top of the pile holes shall be set to a maximum of 1 in (25 mm) below the design elevation of the pile. A 12 in (300 mm) tall piece of cylindrical tubing material having a diameter of 24 in (600 mm) is recommended to form up the top of the hole for setting the pile cap elevation.

3.2 Pile Construction

- A. Pour concrete into the pile hole meeting the strength requirements for the pile concrete and finish to a 1 in (25 mm) maximum elevation difference.
- B. Place vertical steel reinforcement into the wet pile concrete within 0.5 in (13 mm) of the design horizontal location for the steel. The steel bars must extend into the pile to the depth specified in the design with a minimum clear cover at the bottom of the pile of 3 in (75 mm). The steel bars must also extend out the top of the pile a minimum distance to achieve a lap splice equal to 40 times the bar diameter.
- C. Allow the concrete to harden 4 hrs at or above 40° F (4.4° C) or until hard enough to resist more than a surface scratch when scraped with steel rebar before placing post block.

3.3 Post and Panel Construction

- A. Fill trench between each post to the design elevation of the bottom of the fence with a well graded compactable aggregate to 95% Standard Proctor.
- B. If necessary, set the first post block on a mortar bed with ASTM Type N mortar and a maximum thickness of 1 in (25 mm) to accommodate for elevation differences. Post block must be placed level and plumb in all directions. Allow adequate curing time for the mortar before placing additional post block courses.
- C. The panels must extend a minimum of 1 in (25 mm) into the post block columns.
- D. Horizontal steel reinforcement must be installed in the specified bond beam locations. The horizontal steel must have a 1.5 in (38 mm) clear cover at each end.
- E. The blocks should be installed level in all directions and in a straight line from post to post. Total deviation of 0.125 in (3 mm) is allowable.
- F. The panel block must be stacked in a running bond or preset blended pattern.
- G. One panel block course above and below the horizontal steel in the bond beam locations must be filled with concrete grout meeting the strength requirements, and consolidation with a concrete vibrator. All panel block associated with a bond beam must cast in a single pour.
- H. Minimum curing time for concrete grout is 4 hrs for the bottom bond beam and 2 hrs for all other locations.
- I. Maximum stacking lifts and filling for the post blocks is 4 ft (1.2 m). Vertical steel reinforcement shall maintain a 1 in (25 mm) clear cover from all inside surfaces of the post block. Minimum lap splice requirements are 40 times the bar diameter.
- J. Completed post must be installed level and plumb in all directions and within a ± ½° tolerance.
- K. Panels must be installed to a tolerance of 1 in. (25 mm) in the horizontal direction over the length of panel and a tolerance of 0.375 in (8 mm) in the vertical direction.

DESIGN TABLES

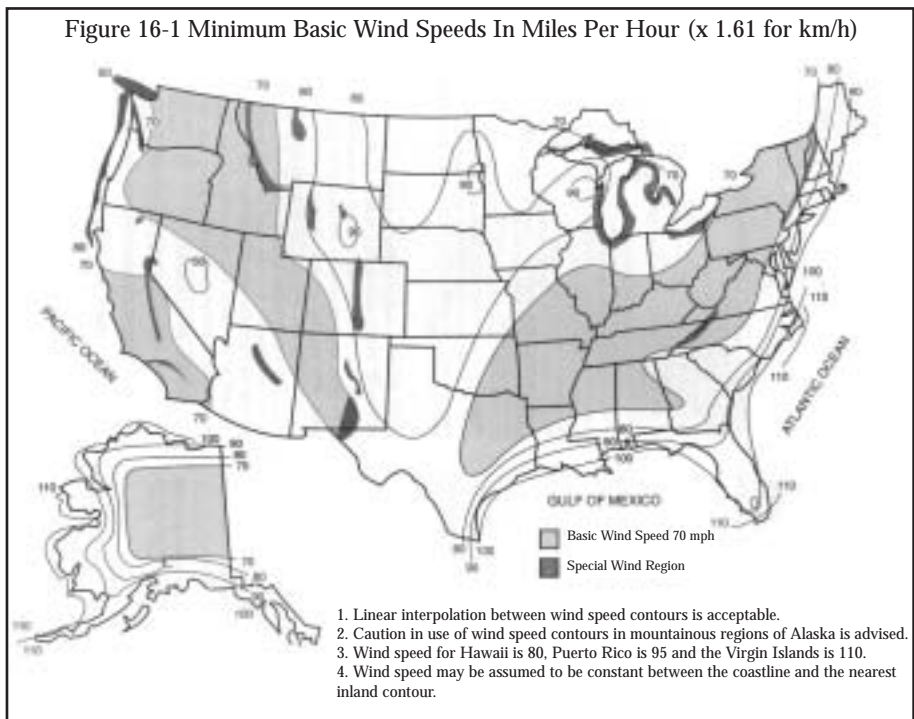
The following design tables provide specific detail on conditions in various zones of North America. They reflect seismic conditions, wind loads and soil types. These pre-engineered tables provide an accurate estimate for fence design. To use these tables follow these simple steps:

- 1) Verify site conditions for wind speed and soil conditions.
- 2) Identify the wind zone where your project is located in the 1997 UBC Figure 16-1.
- 3) Select a type of exposure based on the following classification from the 1997 UBC:

Exposure B: Describes terrain with buildings, forest or surface irregularities, covering at least 20 percent of the ground area extending 1 mile or more from the site.

Exposure C: Describes terrain that is flat and generally open, extending 1/2 mile or more from the site in any full quadrant.

Exposure D: Describes the most severe exposure. Areas with basic wind speeds of 80 mph or greater with terrain that is flat and unobstructed facing large bodies of water over 1 mile or more in width relative to any quadrant of the building site. Exposure D extends inland from the shoreline 1/4 mile or 10 times the building height, whichever is greater.



- 4) Match values from steps 2 and 3 to the following table:

Wind Loads			
Exposures	70	80	90
B	B-70	B-80	B-90
C	C-70	C-80	C-90
D	D-70	D-80	D-90

- 5) Locate your particular load condition in the following design tables and find the pile depth, maximum post spacing, steel schedule and bond beam design.

DESIGN TABLES - Pile Depth based on a 2 ft (0.61 m) diameter.

B-70		Soil Types: Course to medium sands, clean sand and gravel								Soil Types: Uniform to well-graded sands, sandy silts								Soil Types: Uniform to well-graded silts, sandy and silty clays							
		Load Height (ft) (m)		Pile Depth (ft) (m)		Maximum Post Spacing* (ft) (m)		Pile Steel Schedule (ft) (m)		Bond Beams (ft) (m)		Pile Depth (ft) (m)		Maximum Post Spacing* (ft) (m)		Pile Steel Schedule (ft) (m)		Bond Beams (ft) (m)		Pile Depth (ft) (m)		Maximum Post Spacing* (ft) (m)		Pile Steel Schedule (ft) (m)	
4	1.22	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	4.5	1.37	14.52	4.43	4#4	4#10M	2#4	2#10M
5	1.50	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	5.0	1.50	14.52	4.43	4#4	4#10M	2#4	2#10M
6	1.83	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	4.5	1.37	14.52	4.43	4#4	4#10M	2#4	2#10M	5.5	1.68	14.52	4.43	4#4	4#10M	2#4	2#10M
7	2.13	4.5	1.37	13.05	3.98	4#4	4#10M	3#4	3#10M	5.0	1.50	13.05	3.98	4#4	4#10M	3#4	3#10M	5.5	1.68	13.05	3.98	4#4	4#10M	3#4	3#10M
8	2.44	4.5	1.37	13.05	3.98	4#4	4#10M	3#4	3#10M	5.0	1.50	13.05	3.98	4#4	4#10M	3#4	3#10M	6.0	1.83	13.05	3.98	4#4	4#10M	3#4	3#10M
9	2.74	5.0	1.50	13.05	3.98	4#4	4#10M	3#4	3#10M	5.5	1.68	13.05	3.98	4#4	4#10M	3#4	3#10M	6.5	1.98	13.05	3.98	4#4	4#10M	3#4	3#10M
10	3.05	5.5	1.68	13.05	3.98	4#4	4#10M	4#4	4#10M	6.0	1.83	13.05	3.98	4#4	4#10M	4#4	4#10M	7.0	2.13	13.05	3.98	4#4	4#10M	4#4	4#10M
11	3.35	5.5	1.68	13.05	3.98	4#4	4#10M	4#4	4#10M	6.0	1.83	13.05	3.98	4#4	4#10M	4#4	4#10M	7.0	2.13	13.05	3.98	4#4	4#10M	4#4	4#10M
12	3.66	6.0	1.83	13.05	3.98	4#4	4#10M	4#4	4#10M	6.5	1.98	13.05	3.98	4#4	4#10M	4#4	4#10M	7.5	2.29	13.05	3.98	4#4	4#10M	4#4	4#10M

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4	1.22	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	5.0	1.50	14.52	4.43	4#4	4#10M	2#4	2#10M
5	1.50	4.5	1.37	14.52	4.43	4#4	4#10M	2#4	2#10M	5.0	1.50	14.52	4.43	4#4	4#10M	2#4	2#10M	5.5	1.68	14.52	4.43	4#4	4#10M	2#4	2#10M
6	1.83	4.5	1.37	13.05	3.98	4#4	4#10M	2#4	2#10M	5.0	1.50	13.05	3.98	4#4	4#10M	2#4	2#10M	6.0	1.83	13.05	3.98	4#4	4#10M	2#4	2#10M
7	2.13	5.0	1.50	13.05	3.98	4#4	4#10M	3#4	3#10M	5.5	1.68	13.05	3.98	4#4	4#10M	3#4	3#10M	6.5	1.98	13.05	3.98	4#4	4#10M	3#4	3#10M
8	2.44	5.0	1.50	13.05	3.98	4#4	4#10M	3#4	3#10M	6.0	1.83	13.05	3.98	4#4	4#10M	3#4	3#10M	6.5	1.98	13.05	3.98	4#4	4#10M	3#4	3#10M
9	2.74	5.5	1.68	13.05	3.98	4#4	4#10M	3#4	3#10M	6.5	1.98	13.05	3.98	4#4	4#10M	3#4	3#10M	7.5	2.29	13.05	3.98	4#4	4#10M	3#4	3#10M
10	3.05	6.0	1.83	13.05	3.98	4#4	4#10M	4#4	4#10M	6.5	1.98	13.05	3.98	4#4	4#10M	4#4	4#10M	8.0	2.44	13.05	3.98	4#4	4#10M	4#4	4#10M
11	3.35	6.0	1.83	11.58	3.53	4#4	4#10M	4#4	4#10M	6.5	1.98	11.58	3.53	4#4	4#10M	4#4	4#10M	7.5	2.29	11.58	3.53	4#4	4#10M	4#4	4#10M
12	3.66	6.5	1.98	11.58	3.53	4#5	4#15M	4#4	4#10M	7.0	2.13	11.58	3.53	4#5	4#15M	4#4	4#10M	8.0	2.44	11.58	3.53	4#5	4#15M	4#4	4#10M

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4	1.22	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	4.5	1.37	14.52	4.43	4#4	4#10M	2#4	2#10M	5.5	1.68	14.52	4.43	4#4	4#10M	2#4	2#10M
5	1.50	4.5	1.37	13.05	3.98	4#4	4#10M	2#5	2#15M	5.0	1.50	13.05	3.98	4#4	4#10M	2#5	2#15M	6.0	1.83	13.05	3.98	4#4	4#10M	2#5	2#15M
6	1.83	5.0	1.50	13.05	3.98	4#4	4#10M	2#5	2#15M	5.5	1.68	13.05	3.98	4#4	4#10M	2#5	2#15M	6.5	1.98	13.05	3.98	4#4	4#10M	2#5	2#15M
7	2.13	5.5	1.68	13.05	3.98	4#4	4#10M	3#4	3#10M	6.0	1.83	13.05	3.98	4#4	4#10M	3#4	3#10M	7.0	2.13	13.05	3.98	4#4	4#10M	3#4	3#10M
8	2.44	5.5	1.68	11.58	3.53	4#4	4#10M	3#4	3#10M	6.0	1.83	11.58	3.53	4#4	4#10M	3#4	3#10M	7.0	2.13	11.58	3.53	4#4	4#10M	3#4	3#10M
9	2.74	6.0	1.83	11.58	3.53	4#4	4#10M	3#4	3#10M	6.5	1.98	11.58	3.53	4#4	4#10M	3#4	3#10M	8.0	2.44	11.58	3.53	4#4	4#10M	3#4	3#10M
10	3.05	6.5	1.98	11.58	3.53	4#5	4#15M	4#4	4#10M	7.0	2.13	11.58	3.53	4#5	4#15M	4#4	4#10M	8.5	2.59	11.58	3.53	4#5	4#15M	4#4	4#10M
11	3.35	6.5	1.98	11.58	3.53	4#5	4#15M	4#4	4#10M	7.5	2.29	11.58	3.53	4#5	4#15M	4#4	4#10M	8.5	2.59	11.58	3.53	4#5	4#15M	4#4	4#10M
12	3.66	6.5	1.98	10.11	3.08	4#6	4#20M	4#4	4#10M	7.5	2.29	10.11	3.08	4#6	4#20M	4#4	4#10M	8.5	2.59	10.11	3.08	4#6	4#20M	4#4	4#10M

The above chart is for estimating fence design only. Actual design should come from a qualified engineer. Refer to AB Fence Installation Guide for more detailed guidance on installation.

* Maximum post spacing is based on block lengths of 17.625 in. (447.68 mm) and 0.5 in (13 mm) tolerance.

- Pile Depth based on a 2 ft (0.61 m) diameter.

		Soil Types: Course to medium sands, clean sand and gravel								Soil Types: Uniform to well-graded sands, sandy silts								Soil Types: Uniform to well-graded silts, sandy and silty clays							
B-80		Pile Depth		Maximum Post Spacing*		Pile Steel Schedule		Bond Beams		Pile Depth		Maximum Post Spacing*		Pile Steel Schedule		Bond Beams		Pile Depth		Maximum Post Spacing*		Pile Steel Schedule		Bond Beams	
Load Height (ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)
4	1.22	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	4.5	1.37	14.52	4.43	4#4	4#10M	2#4	2#10M
5	1.50	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	4.5	1.37	14.52	4.43	4#4	4#10M	2#4	2#10M	5.0	1.50	14.52	4.43	4#4	4#10M	2#4	2#10M
6	1.83	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	4.5	1.37	14.52	4.43	4#4	4#10M	2#4	2#10M	5.5	1.68	14.52	4.43	4#4	4#10M	2#4	2#10M
7	2.13	4.5	1.37	13.05	3.98	4#4	4#10M	3#4	3#10M	5.0	1.50	13.05	3.98	4#4	4#10M	3#4	3#10M	6.0	1.83	13.05	3.98	4#4	4#10M	3#4	3#10M
8	2.44	4.5	1.37	13.05	3.98	4#4	4#10M	3#4	3#10M	5.0	1.50	13.05	3.98	4#4	4#10M	3#4	3#10M	6.0	1.83	13.05	3.98	4#4	4#10M	3#4	3#10M
9	2.74	5.0	1.50	13.05	3.98	4#4	4#10M	3#4	3#10M	5.5	1.68	13.05	3.98	4#4	4#10M	3#4	3#10M	6.5	1.98	13.05	3.98	4#4	4#10M	3#4	3#10M
10	3.05	5.5	1.68	13.05	3.98	4#4	4#10M	4#4	4#10M	6.0	1.83	13.05	3.98	4#4	4#10M	4#4	4#10M	7.0	2.13	13.05	3.98	4#4	4#10M	4#4	4#10M
11	3.35	5.5	1.68	13.05	3.98	4#4	4#10M	4#4	4#10M	6.5	1.98	13.05	3.98	4#4	4#10M	4#4	4#10M	7.5	2.29	13.05	3.98	4#4	4#10M	4#4	4#10M
12	3.66	6.0	1.83	13.05	3.98	4#4	4#10M	4#4	4#10M	6.5	1.98	13.05	3.98	4#4	4#10M	4#4	4#10M	8.0	2.44	13.05	3.98	4#4	4#10M	4#4	4#10M

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4	1.22	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	4.5	1.37	14.52	4.43	4#4	4#10M	2#4	2#10M	5.5	1.68	14.52	4.43	4#4	4#10M	2#4	2#10M
5	1.50	4.5	1.37	13.05	3.98	4#4	4#10M	2#5	2#15M	5.0	1.50	13.05	3.98	4#4	4#10M	2#5	2#15M	6.0	1.83	13.05	3.98	4#4	4#10M	2#5	2#15M
6	1.83	5.0	1.50	13.05	3.98	4#4	4#10M	2#5	2#15M	5.5	1.68	13.05	3.98	4#4	4#10M	2#5	2#15M	6.5	1.98	13.05	3.98	4#4	4#10M	2#5	2#15M
7	2.13	5.5	1.68	13.05	3.98	4#4	4#10M	3#4	3#10M	6.0	1.83	13.05	3.98	4#4	4#10M	3#4	3#10M	7.0	2.13	13.05	3.98	4#4	4#10M	3#4	3#10M
8	2.44	5.5	1.68	13.05	3.98	4#4	4#10M	3#5	3#15M	6.5	1.98	13.05	3.98	4#4	4#10M	3#5	3#15M	7.5	2.29	13.05	3.98	4#4	4#10M	3#5	3#15M
9	2.74	6.0	1.83	11.58	3.53	4#4	4#10M	3#4	3#10M	6.5	1.98	11.58	3.53	4#4	4#10M	3#4	3#10M	7.5	2.29	11.58	3.53	4#4	4#10M	3#4	3#10M
10	3.05	6.5	1.98	11.58	3.53	4#5	4#15M	4#4	4#10M	7.0	2.13	11.58	3.53	4#5	4#15M	4#4	4#10M	8.5	2.59	11.58	3.53	4#5	4#15M	4#4	4#10M
11	3.35	6.5	1.98	11.58	3.53	4#5	4#15M	4#4	4#10M	7.5	2.29	11.58	3.53	4#5	4#15M	4#4	4#10M	8.5	2.59	11.58	3.53	4#5	4#15M	4#4	4#10M
12	3.66	6.5	1.98	10.11	3.08	4#6	4#20M	4#4	4#10M	7.5	2.29	10.11	3.08	4#6	4#20M	4#4	4#10M	8.5	2.59	10.11	3.08	4#6	4#20M	4#4	4#10M

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4	1.22	4.5	1.37	13.05	3.98	4#4	4#10M	2#5	2#15M	5.0	1.50	13.05	3.98	4#4	4#10M	2#5	2#15M	6.0	1.83	13.05	3.98	4#4	4#10M	2#5	2#15M
5	1.50	5.0	1.50	13.05	3.98	4#4	4#10M	2#5	2#15M	5.5	1.68	13.05	3.98	4#4	4#10M	2#5	2#15M	7.0	2.13	13.05	3.98	4#4	4#10M	2#5	2#15M
6	1.83	5.5	1.68	11.58	3.53	4#4	4#10M	2#5	2#15M	6.0	1.83	11.58	3.53	4#4	4#10M	2#5	2#15M	7.0	2.13	11.58	3.53	4#4	4#10M	2#5	2#15M
7	2.13	6.0	1.83	13.05	3.98	4#4	4#10M	3#5	3#15M	7.0	2.13	13.05	3.98	4#4	4#10M	3#5	3#15M	8.0	2.44	13.05	3.98	4#4	4#10M	3#5	3#15M
8	2.44	6.5	1.98	13.05	3.98	4#4	4#10M	3#5	3#15M	7.0	2.13	13.05	3.98	4#4	4#10M	3#5	3#15M	8.5	2.59	13.05	3.98	4#4	4#10M	3#5	3#15M
9	2.74	6.5	1.98	11.58	3.53	4#5	4#15M	3#5	3#15M	7.5	2.29	11.58	3.53	4#5	4#15M	3#5	3#15M	8.5	2.59	11.58	3.53	4#5	4#15M	3#5	3#15M
10	3.05	6.5	1.98	10.11	3.08	4#5	4#15M	4#5	4#15M	7.5	2.29	10.11	3.08	4#5	4#15M	4#5	4#15M	8.5	2.59	8.64	2.63	4#5	4#15M	4#5	4#15M
11	3.35	6.5	1.98	8.64	2.63	4#5	4#15M	4#5	4#15M	7.5	2.29	8.64	2.63	4#5	4#15M	4#5	4#15M	8.5	2.59	8.64	2.63	4#5	4#15M	4#5	4#15M
12	3.66	7.0	2.13	8.64	2.63	4#6	4#20M	4#5	4#15M	7.5	2.29	8.64	2.63	4#6	4#20M	4#5	4#15M	9.0	2.74	8.64	2.63	4#6	4#20M	4#5	4#15M

The above chart is for estimating fence design only. Actual design should come from a qualified engineer. Refer to AB Fence Installation Guide for more detailed guidance on installation.

* Maximum post spacing is based on block lengths of 17.625 in. (447.68 mm) and 0.5 in (13 mm) tolerance.

- Pile Depth based on a 2 ft (0.61 m) diameter.

		Soil Types: Course to medium sands, clean sand and gravel								Soil Types: Uniform to well-graded sands, sandy silts								Soil Types: Uniform to well-graded silts, sandy and silty clays							
B-90		Pile Depth		Maximum Post Spacing*		Pile Steel Schedule		Bond Beams		Pile Depth		Maximum Post Spacing*		Pile Steel Schedule		Bond Beams		Pile Depth		Maximum Post Spacing*		Pile Steel Schedule		Bond Beams	
Load Height (ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)	(ft)	(m)
4	1.22	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	5.0	1.50	14.52	4.43	4#4	4#10M	2#4	2#10M
5	1.50	4.0	1.22	14.52	4.43	4#4	4#10M	2#4	2#10M	5.0	1.50	14.52	4.43	4#4	4#10M	2#4	2#10M	5.5	1.68	14.52	4.43	4#4	4#10M	2#4	2#10M
6	1.83	4.5	1.37	13.05	3.98	4#4	4#10M	2#4	2#10M	5.0	1.50	13.05	3.98	4#4	4#10M	2#4	2#10M	6.0	1.83	13.05	3.98	4#4	4#10M	2#4	2#10M
7	2.13	5.0	1.50	13.05	3.98	4#4	4#10M	3#4	3#10M	5.5	1.68	13.05	3.98	4#4	4#10M	3#4	3#10M	6.5	1.98	13.05	3.98	4#4	4#10M	3#4	3#10M
8	2.44	5.0	1.50	13.05	3.98	4#4	4#10M	3#4	3#10M	5.5	1.68	13.05	3.98	4#4	4#10M	3#4	3#10M	6.5	1.98	13.05	3.98	4#4	4#10M	3#4	3#10M
9	2.74	5.5	1.68	13.05	3.98	4#4	4#10M	3#4	3#10M	6.0	1.83	13.05	3.98	4#4	4#10M	3#4	3#10M	7.0	2.13	13.05	3.98	4#4	4#10M	3#4	3#10M
10	3.05	6.0	1.83	13.05	3.98	4#4	4#10M	4#4	4#10M	6.5	1.98	13.05	3.98	4#4	4#10M	4#4	4#10M	7.5	2.29	13.05	3.98	4#4	4#10M	4#4	4#10M
11	3.35	6.0	1.83	13.05	3.98	4#4	4#10M	4#4	4#10M	7.0	2.13	13.05	3.98	4#4	4#10M	4#4	4#10M	8.0	2.44	13.05	3.98	4#4	4#10M	4#4	4#10M
12	3.66	6.5	1.98	11.58	3.53	4#4	4#10M	4#4	4#10M	7.0	2.13	11.58	3.53	4#4	4#10M	4#4	4#10M	8.0	2.44	11.58	3.53	4#4	4#10M	4#4	4#10M

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4	1.22	4.5	1.37	13.05	3.98	4#4	4#10M	2#5	2#15M	5.0	1.50	13.05	3.98	4#4	4#10M	2#5	2#15M	6.0	1.83	13.05	3.98	4#4	4#10M	2#5	2#15M
5	1.50	5.0	1.50	13.05	3.98	4#4	4#10M	2#5	2#15M	5.5	1.68	13.05	3.98	4#4	4#10M	2#5	2#15M	6.5	1.98	13.05	3.98	4#4	4#10M	2#5	2#15M
6	1.83	5.5	1.68	13.05	3.98	4#4	4#10M	2#5	2#15M	6.0	1.83	13.05	3.98	4#4	4#10M	2#5	2#15M	7.0	2.13	13.05	3.98	4#4	4#10M	2#5	2#15M
7	2.13	6.0	1.83	13.05	3.98	4#4	4#10M	3#5	3#15M	6.5	1.98	13.05	3.98	4#4	4#10M	3#5	3#15M	8.0	2.44	13.05	3.98	4#4	4#10M	3#5	3#15M
8	2.44	6.0	1.83	11.58	3.53	4#4	4#10M	3#5	3#15M	6.5	1.98	11.58	3.53	4#4	4#10M	3#5	3#15M	8.0	2.44	11.58	3.53	4#4	4#10M	3#5	3#15M
9	2.74	6.5	1.98	11.58	3.53	4#5	4#15M	3#5	3#15M	7.0	2.13	11.58	3.53	4#5	4#15M	3#5	3#15M	8.5	2.59	11.58	3.53	4#5	4#15M	3#5	3#15M
10	3.05	7.0	2.13	11.58	3.53	4#6	4#20M	4#5	4#15M	8.0	2.44	11.58	3.53	4#6	4#20M	4#5	4#15M	8.5	2.59	10.11	3.08	4#6	4#20M	4#5	4#15M
11	3.35	7.0	2.13	10.11	3.08	4#6	4#20M	4#5	4#15M	7.5	2.29	10.11	3.08	4#6	4#20M	4#5	4#15M	8.5	2.59	8.64	2.63	4#6	4#20M	4#5	4#15M
12	3.66	7.0	2.13	8.64	2.63	6#6	6#20M	4#5	4#15M	7.5	2.29	8.64	2.63	6#6	6#20M	4#5	4#15M	9.0	2.74	8.64	2.63	6#6	6#20M	4#5	4#15M

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4	1.22	5.0	1.50	13.05	3.98	4#4	4#10M	2#5	2#15M	5.5	1.68	13.05	3.98	4#4	4#10M	2#5	2#15M	6.5	1.83	13.05	3.98	4#4	4#10M	2#5	2#15M
5	1.50	5.5	1.68	11.58	3.53	4#4	4#10M	2#5	2#15M	6.0	1.83	11.58	3.53	4#4	4#10M	2#5	2#15M	7.0	2.13	11.58	3.53	4#4	4#10M	2#5	2#15M
6	1.83	5.5	1.68	11.58	3.53	4#4	4#10M	2#5	2#15M	6.5	1.98	11.58	3.53	4#4	4#10M	2#5	2#15M	7.5	2.13	11.58	3.53	4#4	4#10M	2#5	2#15M
7	2.13	6.5	1.98	11.58	3.53	4#4	4#10M	3#5	3#15M	7.0	2.13	11.58	3.53	4#4	4#10M	3#5	3#15M	8.5	2.44	11.58	3.53	4#4	4#10M	3#5	3#15M
8	2.44	6.5	1.98	11.58	3.53	4#4	4#10M	3#5	3#15M	7.5	2.29	11.58	3.53	4#4	4#10M	3#5	3#15M	8.5	2.59	10.11	3.08	4#4	4#10M	3#5	3#15M
9	2.74	7.0	2.13	10.11	3.08	4#5	4#15M	3#5	3#15M	7.5	2.29	10.11	3.08	4#5	4#15M	3#5	3#15M	8.5	2.59	8.64	2.63	4#5	4#15M	3#5	3#15M
10	3.05	7.0	2.13	8.64	2.63	4#6	4#20M	4#5	4#15M	7.5	2.29	8.64	2.63	4#6	4#20M	4#5	4#15M	9.0	2.59	8.64	2.63	4#6	4#20M	4#4	4#10M
11	3.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	3.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

18 The above chart is for estimating fence design only. Actual design should come from a qualified engineer. Refer to AB Fence Installation Guide for more detailed guidance on installation.
 * Maximum post spacing is based on block lengths of 17.625 in. (447.68 mm) and 0.5 in (13 mm) tolerance.

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