AB Fence Tech Sheet
Estimating your Project

Tech Sheet #2007

The following example, illustrates the use of the AB Fence Design Tables found in the Installation Manual for the Allan Block Fence System. These charts and design parameters are for estimating purposes only. Actual design parameters and design should come from a local registered engineer. Check with your local Allan Block manufacturer for exact specifications and product availability.

This fence example is 10 ft. (3.0 m) high by 610 ft (186 m) long constructed on silty clay soils and is situated in an 80 mph (129 km/h) wind zone with exposure category B and has no seismic loading. Using these simple parameters and having a description of the soil will yield an accurate estimate. Using the Design Tables will provide basic information to proceed with a preliminary design and estimate. The tables yield, pile depth, post spacing, post/pile steel and number of bond beams. How to determine the material quantities is as follows:

From the Design Tables:

Pile Depth =	6.0 ft (1.83 m)	Post Spacing =	15.3 ft (4.66 m)
Post / Pile Steel =	4 - #5 bars (15M)	Number of Bond Beams =	3 - #4 bars (10M)*

*3 - #4 (10M) bars means there are 3 required bond beams per panel, each having one #4 (10M) reinforcing bar.

These Design Tables should be used for estimating quantities for projects which match the site and soil descriptions provided. Consult the Allan Block Engineering Manual for additional details.

Determine the number of Allan Block units for the project

How many panels and posts do you have and how many courses are there in each panel and post?

610 ft ÷ 15.3 ft = 39.8 panels, therefore number of panels = 40 (186 m ÷ 4.7 m = 40)
With no opening in the fence, the number of post is equal to the number of panels plus 1 = 41 posts

10 ft tall ÷ .67 ft = 14.9 courses, therefore use 15 courses. (3.0 m ÷ 0.200 m = 15)
For a castellated post, you have one additional course of post block than panel block, therefore 16 courses.

How many panel blocks will you need for each course of the panel?

15.3 ft post spacing – one post (1.47 ft) = 13.83 ft long panel (4.7 m – 0.448 m = 4.25 m)
13.83 ft long panel ÷ 1.47 ft per post block = 9.5 panel block (4.25 m ÷ 0.448 m = 9.5)

Note: The post and panel blocks are the same length, 1.47 ft (0.448 m)

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How many post block will you need for the entire project?

16 courses per post x 41 posts = 656 post block

How many panel blocks will you need for the entire project?

15 course x 9.5 panel block = 142.5 panel block.

However, consider that each course really has 9 full panel block and one half-panel block.

Therefore: 15 course x 9 panel block = 135 panel block and 15 half-panel block

135 x 40 = 5400 panel block
15 x 40 = 600 half-panel block

Note: If the half panel block are not available in your area you should cut a full size panel block in half to create two half panels. Therefore you would add 300 (600 ÷ 2) panel blocks to your panel block number above.

How many cap blocks will you need for the entire project?

9.5 caps per panel x 40 = 380 cap block
1 cap per post x 41 = 41 cap block Therefore: 421 cap units

Estimating the quantities of all material other than the Allan Block units

Aggregate:
Base Rock:
15.3 ft post spacing – 2.0 ft (the diameter of a pile) = 13.3 ft long base (4.7 m – 0.61 m = 4.09 m)
13.3 ft x 0.5 ft x 1 ft = 6.7 ft^3 x 40 panels = 266 ft^3 ÷ 27 ft^3 per yd^3 = 9.85 yd^3
(4.05 m x 0.15 m x 0.30 m = 0.19 m^3 x 40 panels = 7.5 m^3)
Note: For alternate unreinforced concrete base, see page 3

If you do not want to take the time to remove the piles from your base quantity, simply use the full length of the fence:

610 ft x 0.5 ft x 1 ft = 305 ft^3 ÷ 27 ft^3 per yd^3 = 11.3 yd^3
(186 m x 0.15 m x 0.30 m = 8.4 m^3**)**

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Piles:
Concrete:
((0.5 x 2.0 ft)^2 x 3.14 x 6.0 ft) ÷ 27 ft^3 per yd^3 = 0.7 yd^3
((0.5 x 0.6 m)^2 x 3.14 x 1.8 m) = 0.51 m^3
0.7 yd^3 (0.51 m^3) x 41 piles = 28.6 yd^3 (20.9 m^3)
Steel:
#5 bar (15 M) by 8 ft (2.4 m) x 4 pieces per pile x 41 piles
= 1,312 linear ft (400 linear m)
Note: The length of 8 ft (2.4 m) takes into consideration a clear cover of 3 in. (75 mm) and a lap splice of 24 in. (610 mm).

Posts:
Grout:
(16 block x 0.32 ft^3 per block x 41 posts) ÷ 27 ft^3 per yd^3 = 7.8 yd^3
(16 block x 0.00906 m^3 per block x 41 posts = 6.0 m^3)
Steel:
#5 bar (15 M) by 10 ft (3.0 m) x 4 pieces per post x 41 posts
= 1,640 linear ft (500 linear m)
Concrete Forms:
41 pile x 1 ft (0.30 m) per pile = 41 linear ft (12.3 linear m)
Panels:
Fine Mix Grout:
9.5 block x 2 courses x 0.128 ft^3 per block = 2.43 ft^3 per bond beam
(9.5 block x 2 courses x 0.00363 m^3 per block = 0.069 m^3 per bond beam)

(2.43 ft^3 x 3 bond beams per panel x 40 panels) ÷ 27 ft^3 per yd^3 = 10.8 yd^3
(0.069 m^3 x 3 bond beams per panel x 40 panels = 8.28 m^3)
Steel:
#4 bar (10 M) by 15 ft (4.6 m) x 3 pieces per panel x 40 panels
= 1800 linear ft (548.6 linear m)
Note: The length of 15 ft (4.6 m) takes into consideration a clear cover of 1.5 in. (38 mm) at both ends of the panel.

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9 ga Wire Stirrups:
9.5 block x 2 cores per block = 19 cores.
Note: The general rule of thumb is there are stirrups in the first two cores at each end of a bond beam and every other core for the rest.

Therefore: 19 cores – 4 (2 each end) = 15, 15 ÷ 2 = 7.5, 7.5 + 4 = 11.5, use 12 per bond beam

12 x 1.7 ft (0.5 m) long wire = 20.4 linear ft per bond beam (6.2 linear m per bond beam)
20.4 linear ft x 3 bond beams x 40 panels = 2448 linear ft
(6.2 linear m x 3 bond beams x 40 panels = 744 linear m)

Caps:
Adhesive:
421 caps ÷ 6 caps per tube = 70 tubes

Alternate Unreinforced Concrete Base:
15.3 ft post spacing – 2.0 ft (the diameter of a pile) = 13.3 ft long base (4.7 m – 0.61 m = 4.09 m)

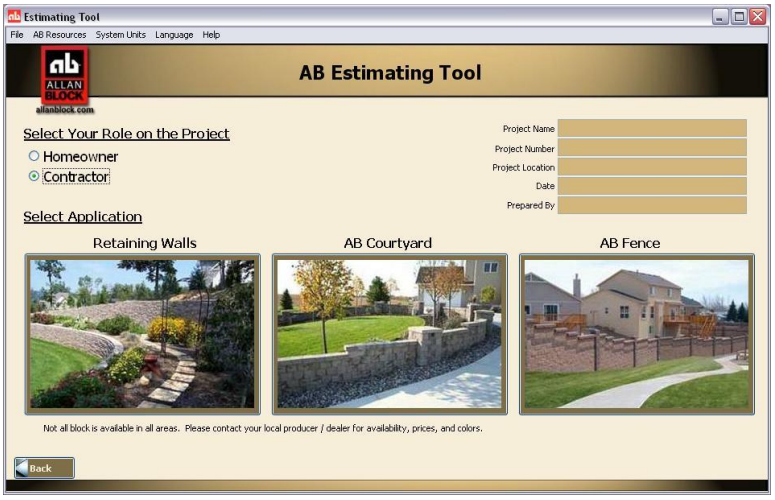
13.3 ft long x 0.25 ft thick x 1.0 ft wide = 3.3 ft^3 ÷ 27 ft^3 per yd^3 = 0.122 yd^3
(4.05 m x 0.076 m x 0.3 m = 0.092 m^3)
Note: Depth and width of base may vary per final design.

0.122 yd^3 x 40 panels = 4.89 yd^3 (0.092 m^3 x 40 panels = 3.7 m^3)

Note: Material estimates do not include overages and only represent the primary materials needed to construct the AB Fence system

AB Estimating Tool

To simplify your estimating process, the AB Estimating Tool can be downloaded at www.allanblock.com, or contact the Allan Block Engineering Department for assistance.



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