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Concrete Block Calculator

Calculate how many concrete blocks and bags of mortar are needed for your project by entering your wall dimensions and block size. Add the block price to get an estimated material price estimate.

Width:
Height:
Block Size:

Optionally enter the price per block

Price:

Material Estimate:

- Blocks (16" x 8")
- Bags of Mortar
- yds³ Sand

Installation Overview:

Square Footage: 800.00 ft²

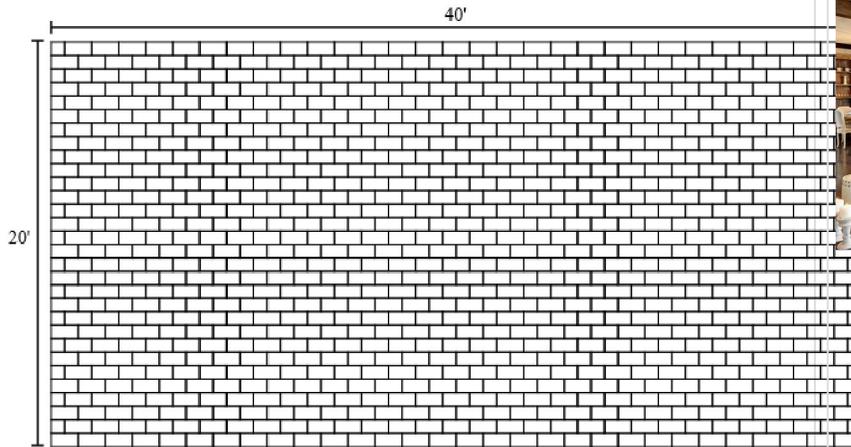
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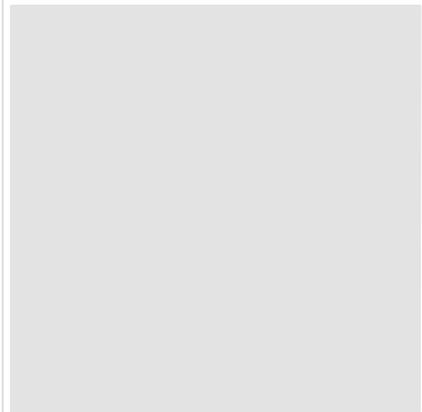


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Brick Calculator

Recommended Masonry Tools:

[Masonry Saw Blade](#)

[Brick Trowel](#)

[Mason Line](#)

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[Mixing Tub](#)

Learn how we calculated this result [below](#).

[Direct Link to Results:](#)

https://www.inchcalculator.com/concrete-block-calculator/?uc_width=4



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How Many Concrete Blocks Do I Need?

Concrete blocks are an affordable building material that can be used for many construction projects and are suited very well for construction walls for foundations or utility buildings.

Concrete blocks typically have holes in the center to reduce the weight, material needed, and cost. The average concrete block is composed of cement and coal ash, which is why they are often called cinder blocks.



Concrete blocks are concrete masonry units, or CMUs, but we often refer to them as concrete blocks or cinder blocks. Learn more about [concrete masonry units](#). A wall typically requires $1\frac{1}{8}$ blocks per square foot.

Finding how many concrete blocks you need for your project can seem like a confusing and challenging task, but it can be simplified using the calculator above. Just enter the dimensions of your wall project, and the concrete block calculator will figure out how many blocks are needed. For example, a $10' \times 10'$ wall using a $16'' \times 8'' \times 8''$ block will require an estimated 120 blocks and cost about \$185 for material.

If you're building a retaining wall, then check out our [retaining wall calculator](#). Consider getting several professional estimates to get the best labor cost and find the right company for your project. A wall typically costs \$10 – \$15 to install, [learn more](#) about the cost factors of a wall project.

How to Estimate How Many Concrete Blocks Are Needed

There are several formulas to figure out how many blocks are necessary for a wall project, but the first step is to measure the width and height of the wall, in feet.

Find Wall Square Footage

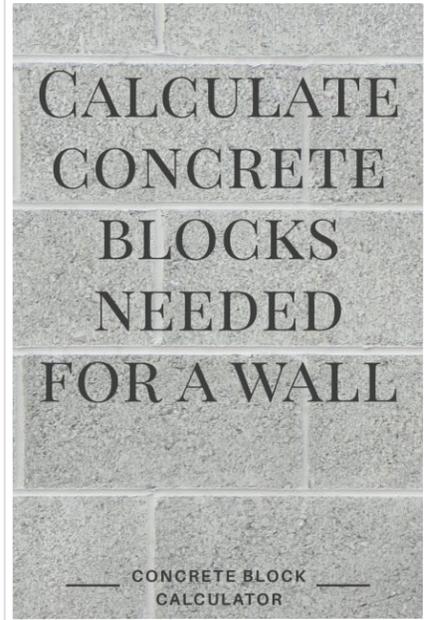
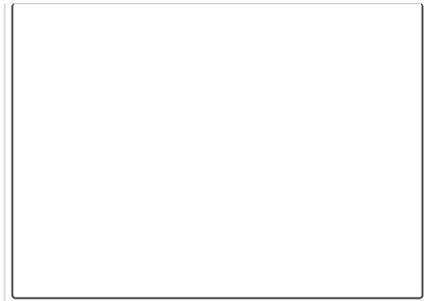
Once you have the wall measurements, calculate the square footage by multiplying the width times the height.

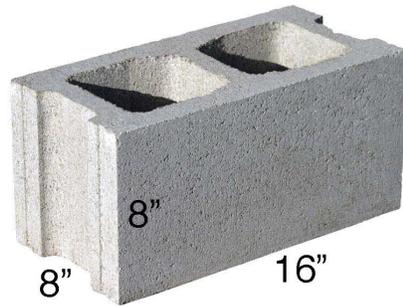
$$\text{wall sq. ft.} = \text{width} \times \text{height}$$

Find Block Square Footage

Now you need to figure out the square footage of the block you are using. The standard block size is 16" wide x 8" high. Multiply 16×8 and then divide by 144 to get the answer.

$$\text{block sq. ft.} = (16 \times 8) \div 144 = .89 \text{ sq. ft.}$$





Different size blocks will have different square footages, apply the formula above to find the solution. Check out our [square footage calculator](#) to determine the square footage of your block.

Calculate Blocks Needed

After you have found the square footage of both your wall and your block, determining the number of blocks you need is as simple as dividing the wall square footage by the block square footage.

$$\text{blocks} = \text{wall sq. ft.} \div \text{block sq. ft.}$$

If you're using a standard 16" x 8" x 8" block, find the number of blocks needed by dividing the wall square footage by .89.

$$\text{blocks} = \text{wall sq. ft.} \div .89$$

We recommend adding 5%-10% additional blocks to account for broken blocks or blocks that need to be cut for the edges.

Our calculator above may indicate a different quantity of blocks needed since it uses a more precise formula, accounting for partial blocks and cutoffs automatically.

How to Estimate Mortar for a Block Wall

Calculating the amount of mortar needed for the joints in a concrete block wall will vary depending on the mortar mix you use. On average it takes about three bags of cement for every 100 blocks. Divide the number of blocks being installed by 33.3 to calculate how many bags are needed. Standard mortar requires a 1:3 cement to sand mix, which amounts to 1 yd³ of sand for every seven bags of cement.

You can also purchase pre-mixed bags of mortar, which generally yield around 12 blocks per 80-pound bag. Try our [mortar calculator](#) to calculate how many bags are needed.

Estimating Grout or Concrete Fill

Estimating the concrete needed to fill the voids in concrete block involves finding the volume of the void in the block being used and multiplying that by the number of voids in the wall. Measure the length, width, and height of the void in inches, then multiply to get the cubic inches of the void. Multiply the cubic inches by the number of voids in the wall, typically 2 per block. Finally, divide cubic inches by 46,656 to find cubic yards of concrete needed.

Use our [block fill calculator](#) to estimate the fill volume.

Installation Tools Needed to Install Concrete Block Wall

If you're installing a concrete block wall, you will need several tools to do the job correctly. Here is a small list of tools that are necessary to build a wall.

- **Brick Trowel:** This is used to lay an even bed of mortar when setting block.
- **Mason Line:** Use mason line to make sure the wall is straight and level and to ensure the block is set at an even height.
- **Level:** Make sure you have a level on hand to verify that each block is straight and level with adjacent blocks.
- **Jointer:** A jointer will help get smooth, clean joints for a professional look.
- **Tape Measure:** You're definitely going to need a tape measure for this one.
- **Mixing Tub:** Mix mortar in a mixing tub to keep your wheelbarrow clean.

Common Concrete Block Sizes

You'll need to know the size of the concrete block you'll be using to determine how many blocks you need for your project. The most common sizes are 8" high by 8" wide and 8" high by 16" wide in varying thicknesses. The thickness of the block is not critical to finding how many blocks you need but it is essential when estimating how much mortar and other masonry material you need. The common thicknesses are 4", 6", 8", 10", 12", and 14". Refer to the table below for standard block sizes including the nominal dimensions. The nominal size is the actual size of the block, while the size includes a 3/8" mortar joint and is the size that should be used when estimating material. The standard mortar joint should be 3/8" thick for your wall.

2" and 3" CMU		
Size D x H x W	Nominal D x H x W	Blocks per 100 ft ²
2" x 8" x 16"	1 5/8" x 7 5/8" x 15 5/8"	113
3" x 8" x 16"	2 5/8" x 7 5/8" x 15 5/8"	113

4" CMU		
Size D x H x W	Nominal D x H x W	Blocks per 100 ft ²
4" x 8" x 8"	3 5/8" x 7 5/8" x 7 5/8"	226
4" x 8" x 16"	3 5/8" x 7 5/8" x 15 5/8"	113

6" CMU		
Size D x H x W	Nominal D x H x W	Blocks per 100 ft ²
6" x 8" x 8"	5 5/8" x 7 5/8" x 7 5/8"	226
6" x 8" x 16"	5 5/8" x 7 5/8" x 15 5/8"	113

8" CMU		
Size D x H x W	Nominal D x H x W	Blocks per 100 ft ²
8" x 8" x 8"	7 5/8" x 7 5/8" x 7 5/8"	226

8" CMU		
Size D x H x W	Nominal D x H x W	Blocks per 100 ft ²
8" x 8" x 16"	7 5/8" x 7 5/8" x 15 5/8"	113

10" CMU		
Size D x H x W	Nominal D x H x W	Blocks per 100 ft ²
10" x 8" x 8"	9 5/8" x 7 5/8" x 7 5/8"	226
10" x 8" x 16"	9 5/8" x 7 5/8" x 15 5/8"	113

12" CMU		
Size D x H x W	Nominal D x H x W	Blocks per 100 ft ²
12" x 8" x 8"	11 5/8" x 7 5/8" x 7 5/8"	226
12" x 8" x 16"	11 5/8" x 7 5/8" x 15 5/8"	113

14" CMU		
Size D x H x W	Nominal D x H x W	Blocks per 100 ft ²
14" x 8" x 8"	13 5/8" x 7 5/8" x 7 5/8"	226
14" x 8" x 16"	13 5/8" x 7 5/8" x 15 5/8"	113

Check out our [concrete calculator](#) to help with your other concrete projects.

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