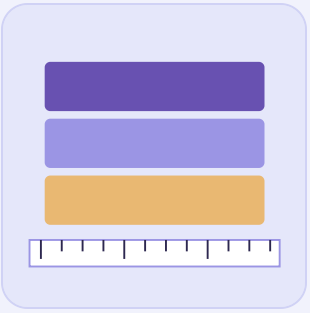
FREE GUIDE

Quilt Yardage and Backing Guide

How much fabric to buy for a quilt: the yardage math for any cut, what a yard really gives you, backing for seven quilt sizes, and a shopping sheet to fill in.



How fabric is sold

- **Width.** Quilting cotton comes off the bolt about 42 to 44 in wide. Trim the tightly woven selvages and plan on **42 in** of usable width, the width QuiltLab's calculators use. If your fabric measures less, use your number.
- **Length.** Shops cut along the length of the bolt, usually in eighths of a yard. A yard is 36 in, so 1/8 yd is 4 1/2 in. Patterns round up to the next 1/8 yd.
- **Grain.** The lengthwise grain runs beside the selvage and barely stretches. The crosswise grain, from selvage to selvage, stretches a little. The bias, at 45 degrees, stretches the most.
- **Wideback.** Backing fabric sold 108 in wide, so most quilts need no backing seam. This guide plans on 106 in usable.

Yards to inches

Cut	Length
1/8 yd	4 1/2 in
1/4 yd	9 in
3/8 yd	13 1/2 in
1/2 yd	18 in
1/3 yd	12 in

Cut	Length
5/8 yd	22 1/2 in
3/4 yd	27 in
7/8 yd	31 1/2 in
1 yd	36 in
2/3 yd	24 in

A fat quarter is not a quarter yard

Fat quarter

18 x 21 in: half a yard, cut in half at the fold

Quarter yard

9 x 42 in: a quarter yard off the bolt. Same fabric, but the fat quarter cuts bigger squares: up to 18 in, not 9 in.

THE FORMULA

Yardage for any cut

42 in usable width, selvages trimmed



One 5 1/2 in strip gives 7 squares of 5 1/2 in: 42 / 5 1/2 is a little over 7, rounded down.
The shaded 3 1/2 in left at the end is too short for another square.

Pieces per strip = 42 in / piece width, rounded down	The strip is as tall as one piece.
Strips = pieces needed / pieces per strip, rounded up	A part strip still uses a whole strip.
Length = strips x piece height	Then round up to the next 1/8 yd (4 1/2 in).

Example: 60 rectangles cut 2 1/2 x 4 1/2 in. Lay the 2 1/2 in side across the strip: 16 per strip, 4 strips of 4 1/2 in, 18 in = **1/2 yd**.

How many squares you get

Cut square	Per strip	From 1/4 yd	From 1/2 yd	From 1 yd	Buy for 100
2 1/2 in	16	48	112	224	1/2 yd
3 1/2 in	12	24	60	120	7/8 yd
4 1/2 in	9	18	36	72	1 1/2 yd
5 in	8	8	24	56	1 7/8 yd
5 1/2 in	7	7	21	42	2 3/8 yd
6 1/2 in	6	6	12	30	3 1/8 yd
10 in	4	-	4	12	7 yd
12 1/2 in	3	-	3	6	11 7/8 yd

Strips cut across 42 in of usable width, nothing allowed for straightening the cut edge. 10 in squares match a layer cake; 5 in squares match a charm pack.

Worked example: a 50 x 65 in throw of 5 in squares in 4 fabrics

Squares across x down	10 x 13 = 130 squares, cut 5 1/2 in
Each fabric	33 squares: 7 per strip, 5 strips = 7/8 yd
All four fabrics	**3 1/2 yd** for the top, before borders and binding

Any size or shape: fabric yardage calculator.

How much backing

The back is cut larger than the top so it can be squared up after quilting, and so a longarm frame has something to clamp. This guide adds **4 in on every side**, 8 in each way. Longarm quilters often ask for 4 to 6 in per side, so check with whoever is quilting it.

Quilt	Top (in)	Backing (in)	42 in cotton	Buy	108 in wideback
Crib	36 x 52	44 x 60	2 x 44 in, horizontal seam	**2 1/2 yd**	**1 1/4 yd**
Throw	50 x 65	58 x 73	2 x 58 in, horizontal seam	**3 1/4 yd**	**1 5/8 yd**
Twin	70 x 90	78 x 98	2 x 98 in, vertical seam	**5 1/2 yd**	**2 1/4 yd**
Full	84 x 103	92 x 111	3 x 92 in, horizontal seams	**7 3/4 yd**	**3 1/8 yd**
Queen	90 x 108	98 x 116	3 x 98 in, horizontal seams	**8 1/4 yd**	**3 1/4 yd**
King	108 x 108	116 x 116	3 x 116 in, vertical seams	**9 3/4 yd**	**6 1/2 yd**, 2 panels
Cal king	102 x 112	110 x 120	3 x 110 in, horizontal seams	**9 1/4 yd**	**6 1/8 yd**, 2 panels

Each seam is sewn with a 1/2 in allowance and pressed open, so it uses 1 in of width. The layout is whichever uses less fabric. Sizes are the suggested sizes on quiltlab.co/quilt-sizes; measure your finished top and use your own numbers.

Worked example: the 50 x 65 in throw

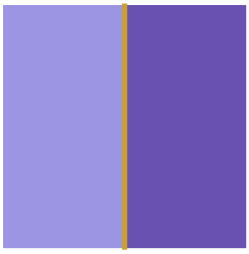
Backing = top + 2 x 4 in each way	58 x 73 in
Panels side by side (vertical seam)	(58 - 1) / (42 - 1), rounded up = 2 panels of 73 in = 146 in
Panels stacked (horizontal seam)	(73 - 1) / (42 - 1), rounded up = 2 panels of 58 in = 116 in
Use the shorter: stacked	116 in = **3 1/4 yd**

Any size: backing calculator.

Wideback or pieced? Compare the total cost of the yardage, not the price per yard: a yard of wideback is about two and a half times as wide as a yard of cotton. More in Wideback vs pieced backing.

Directional prints. On a backing with horizontal seams the panels lie sideways, so a one-way print runs across the quilt. Buy for the vertical layout if the print has to stand upright. More in Marking the top of a directional backing.

Piece and prepare the backing



Lengthwise: vertical seam
each panel = backing length



Crosswise: horizontal seam
each panel = backing width

Crib, throw and twin backings take two widths of cotton; full, queen and king backings take three. When both layouts fit, the one with less fabric often runs the seam across the shorter edge. More in Which way to run backing seams.

Join the panels

1. Cut each panel to the panel length in the chart, straight across the grain.
2. Trim off the selvages. They are woven tighter than the rest of the fabric and can pucker a seam after washing.
3. Lay two panels right sides together, edges matched, and sew with a 1/2 in seam. Sew from the same end each time so the panels don't drift.
4. Press the seam open to spread the bulk, or to one side if your quilter asks. More in Backing seam bulk.
5. Press the whole backing and fold it so it stays smooth. If the print has a direction, pin a note to the top edge for your quilter.

The rest of the quilt sandwich

Quilt	Batting (4 in per side)	Binding, 2 1/2 in strips
Crib	44 x 60 in	5 strips, 3/8 yd
Throw	58 x 73 in	7 strips, 1/2 yd
Twin	78 x 98 in	9 strips, 5/8 yd
Full	92 x 111 in	10 strips, 3/4 yd
Queen	98 x 116 in	11 strips, 7/8 yd
King	116 x 116 in	12 strips, 7/8 yd
Cal king	110 x 120 in	12 strips, 7/8 yd

Batting is cut the same size as the backing. Binding strips are cut across the width of fabric; the Quilt Binding Guide covers the rest. Calculators: batting size, binding.

BEFORE YOU SHOP

Your shopping list

Fabric	Used for	Cut size	How many	Yardage	Have / buy
A					
B					
C					
D					
E					
Border					
Backing					
Binding					
Batting					

Finished quilt size: _____ x _____ in. Usable fabric width: _____ in.

Habits that stop you running short

- Buy a little extra of each fabric, 1/8 to 1/4 yd, for straightening the cut edge and for one miscut.
- If you pre-wash, buy a bit more: cotton can shrink a little in the first wash.
- Buy all of one fabric at once. A later bolt can be a slightly different dye lot.
- Check the bolt end for its width before trusting the chart.

Reading a pattern's fabric list

- Fabric requirements assume a usable width; check which one, especially for directional prints.
- "Fat quarter friendly" means each piece fits in about 18 x 21 in.
- Binding and backing are often listed on their own line, apart from the top.

More in Reading a fabric requirements table.

How we made this guide. QuiltLab wrote and drew it with AI tools from published yardage and backing instructions, summarized in the articles linked above, which cite their sources. The numbers come from the QuiltLab fabric yardage, backing, batting and binding calculators. The pictures are diagrams, not photos, and no one has cut a backing from this guide yet. Spot a mistake? Tell us at quiltlab.co/help.