Gusset Length Calculator

U-shaped gusset (two sides and bottom), rounded corners, measured on the stitch line

Cut-edge length = 2(h - r) + (w - 2r) + pi r

Stitch-line length = cut-edge length - pi x i

w = panel width, h = panel height, r = corner radius, i = stitch line distance from the edge (r larger than i). Same units throughout.

The first line is billybopp's formula from leatherworker.net (2014). The second is the correction for measuring on the stitch line, which TinkerTailor recommends on the same thread. For a U gusset the shortening is pi x i whatever the corner radius.

STITCH-LINE LENGTH (inches), stitch line 3/16 in from the edge

Panel w x h	r = 0.5 in	r = 0.75 in	r = 1.0 in	r = 1.5 in	r = 2.0 in	w + 2h rule
6 x 8 in	20.98	20.77	20.55	20.12	19.69	22
7 x 9 in	23.98	23.77	23.55	23.12	22.69	25
9 x 7 in	21.98	21.77	21.55	21.12	20.69	23
10 x 7 in	22.98	22.77	22.55	22.12	21.69	24
12 x 10 in	30.98	30.77	30.55	30.12	29.69	32
14 x 11 in	34.98	34.77	34.55	34.12	33.69	36
16 x 12 in	38.98	38.77	38.55	38.12	37.69	40
17 x 13 in	41.98	41.77	41.55	41.12	40.69	43

STITCH-LINE LENGTH (cm), stitch line 4 mm from the edge

Panel w x h	r = 1.5 cm	r = 2.5 cm	r = 4.0 cm	r = 5.0 cm	w + 2h rule
20 x 15 cm	47.5	46.6	45.3	44.5	50
25 x 20 cm	62.5	61.6	60.3	59.5	65
30 x 20 cm	67.5	66.6	65.3	64.5	70
35 x 25 cm	82.5	81.6	80.3	79.5	85
40 x 30 cm	97.5	96.6	95.3	94.5	100

Cut the gusset strip to the stitch-line length plus an end allowance, then count holes: the same number of holes on panel and gusset is the fit test makers on the thread trust most.

Gusset Worksheet

One bag per block

BAG 1

w panel width	_____
h panel height (to the top of the gusset)	_____
r corner radius	_____
i stitch line distance from edge	_____
Cut edge 2(h - r) + (w - 2r) + 3.1416 x r	_____
Stitch line = cut edge - 3.1416 x i	_____
Holes on panel stitch line (count)	_____
Gusset cut length (stitch line + end allowance)	_____

BAG 2

w panel width	_____
h panel height (to the top of the gusset)	_____
r corner radius	_____
i stitch line distance from edge	_____
Cut edge 2(h - r) + (w - 2r) + 3.1416 x r	_____
Stitch line = cut edge - 3.1416 x i	_____
Holes on panel stitch line (count)	_____
Gusset cut length (stitch line + end allowance)	_____

Square corners (r = 0): the stitch line is w - 2i + 2(h - i). Full wraparound gusset on a rounded rectangle: perimeter on the stitch line = 2(w - 2i) + 2(h - 2i) - (8 - 2 pi)(r - i).