

Slab bar bending schedule

SiteSetu | Worked quantity example | 20 October 2026

One 3,050 x 6,050 x 150 mm slab panel, supported on the two opposite long sides. The full table below covers only its two straight bottom-mesh marks. Support anchorage, top extras, opening reinforcement and chairs are excluded and must be scheduled from the actual design.

S1 runs along the 3,050 mm short direction and is counted across the 6,050 mm direction. S2 runs along the long direction and sits above S1. Bottom cover is 25 mm to S1; edge cover is 25 mm to the steel surface. Thickness establishes the section but does not change these straight plan lengths.

Schedule for the shown marks

Mark / position	Shape	Dia mm	Count	Cut mm	Total m	D ² /162 kg/m	kg
S1: Bottom main, short direction	Straight	10	41	3000	123.000	0.617284	75.93
S2: Bottom distribution, long direction	Straight	8	16	6000	96.000	0.395062	37.93
SUBTOTAL			57		219.000		113.85

Diameter summary

Dia mm	Pieces	Total m	Weight kg
8	16	96.000	37.93
10	41	123.000	75.93

Input dimensions and reinforcement

Input	Value	Input	Value
Short overall panel dimension	3050 mm	Long overall panel dimension	6050 mm
Slab thickness	150 mm	Edge and bottom cover	25 mm
S1 main bar diameter	10 mm	S1 maximum spacing	150 mm
S2 distribution diameter	8 mm	S2 maximum spacing	200 mm

Slab: calculation steps

ROUNDUP(x, 0) rounds upward to a whole number. MAX chooses the larger value. All length inputs are mm.

Step	Arithmetic / result
S1 straight cutting length	$3050 - 2 \times 25 = 3000$ mm
S1 first-to-last centre distance	$6050 - 2 \times 25 - 10 = 5990$ mm
S1 spaces, rounded up	$\text{ROUNDUP}(5990 / 150, 0) = 40$ spaces
S1 bar count	$40 + 1 = 41$ bars
S2 straight cutting length	$6050 - 2 \times 25 = 6000$ mm
S2 first-to-last centre distance	$3050 - 2 \times 25 - 8 = 2992$ mm
S2 spaces, rounded up	$\text{ROUNDUP}(2992 / 200, 0) = 15$ spaces
S2 bar count	$15 + 1 = 16$ bars

Weight calculation by mark

S1: $41 \times 3000 / 1000 = 123.000$ m; $123.000 \times 10^2 / 162 =$ approximately 75.925926 kg, displayed 75.93 kg.

S2: $16 \times 6000 / 1000 = 96.000$ m; $96.000 \times 8^2 / 162 =$ approximately 37.925926 kg, displayed 37.93 kg.

Sum unrounded weights. Procurement waste and excluded design bars are separate. The beam/column link shortcut is approximate and does not establish bend radii or fabrication hook tails.

Marked drawing and member FAQs: <https://sitesetu.app/bar-bending-schedule/slab>

Beam bar bending schedule

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One 230 x 450 mm beam with 4,000 mm clear span. B1 has three 16 mm bottom bars; B2 has two 12 mm top bars. Each extends straight 800 mm beyond each support face. B3 is an 8 mm closed stirrup at maximum 200 mm spacing in this uniform-spacing exercise.

Cover is 25 mm to the outside of the stirrup. First and last stirrup centres are 50 mm from support faces. The 800 mm extension is a supplied exercise dimension, not a calculated development length. Support-zone extras, joint reinforcement and curtailed bars are excluded. The uniform spacing is not a ductile beam design.

Schedule for the shown marks

Mark / position	Shape	Dia mm	Count	Cut mm	Total m	D ² /162 kg/m	kg
B1: Bottom longitudinal	Straight	16	3	5600	16.800	1.580247	26.55
B2: Top longitudinal	Straight	12	2	5600	11.200	0.888889	9.96
B3: Closed stirrup	Rectangle, two 135 deg ends	8	21	1225	25.725	0.395062	10.16
SUBTOTAL			26		53.725		46.67

Diameter summary

Dia mm	Pieces	Total m	Weight kg
8	21	25.725	10.16
12	2	11.200	9.96
16	3	16.800	26.55

Input dimensions and reinforcement

Input	Value	Input	Value
Clear span between support faces	4000 mm	Beam width	230 mm
Beam overall depth	450 mm	Cover to outside of stirrup	25 mm
Straight extension at each end	800 mm	B1 bottom diameter	16 mm
B1 bottom count	3 bars	B2 top diameter	12 mm
B2 top count	2 bars	B3 stirrup diameter	8 mm
B3 maximum spacing	200 mm	First/last link offset from face	50 mm
Nominal hook addition multiplier	10 d	Minimum nominal hook addition	75 mm
Cut-length rounding increment	25 mm		

Beam: calculation steps

ROUNDUP(x, 0) rounds upward to a whole number. MAX chooses the larger value. All length inputs are mm.

Step	Arithmetic / result
B1 straight cutting length	$4000 + 2 \times 800 = 5600$ mm
B2 straight cutting length	$4000 + 2 \times 800 = 5600$ mm
B3 first-to-last centre distance	$4000 - 2 \times 50 = 3900$ mm
B3 spaces, rounded up	$\text{ROUNDUP}(3900 / 200, 0) = 20$ spaces
B3 stirrup count	$20 + 1 = 21$ bars
Outside link width a	$230 - 2 \times 25 = 180$ mm
Outside link height b	$450 - 2 \times 25 = 400$ mm
Nominal addition H per end	$\text{MAX}(10 \times 8, 75) = 80$ mm
Outside rectangle perimeter	$2 \times (180 + 400) = 1160$ mm
Three 90 deg deductions	$3 \times 2 \times 8 = 48$ mm
Two 135 deg deductions	$2 \times 3 \times 8 = 48$ mm
Raw approximate link length	$1160 + 2 \times 80 - 48 - 48 = 1224$ mm
Scheduled link cutting length	$\text{ROUNDUP}(1224 / 25, 0) \times 25 = 1225$ mm

Weight calculation by mark

B1: $3 \times 5600 / 1000 = 16.800$ m; $16.800 \times 16^2 / 162 =$ approximately 26.548148 kg, displayed 26.55 kg.

B2: $2 \times 5600 / 1000 = 11.200$ m; $11.200 \times 12^2 / 162 =$ approximately 9.955556 kg, displayed 9.96 kg.

B3: $21 \times 1225 / 1000 = 25.725$ m; $25.725 \times 8^2 / 162 =$ approximately 10.162963 kg, displayed 10.16 kg.

Sum unrounded weights. Procurement waste and excluded design bars are separate. The beam/column link shortcut is approximate and does not establish bend radii or fabrication hook tails.

Marked drawing and member FAQs: <https://sitesetu.app/bar-bending-schedule/beam>

Column bar bending schedule

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One 350 x 350 mm column segment with 3,000 mm scheduling height, four 20 mm corner bars and 8 mm rectangular ties. Allocate one 1,000 mm lap to each vertical bar for this quantity exercise. Cover is 40 mm to the outside of the ties.

Tie centres run from 50 to 2,950 mm over the scheduling height at maximum 150 mm spacing. The lap allocation is a quantity assumption, not permission to splice all bars at one level. Joint ties, end confinement, starters and crossties are outside this exercise. Actual lap positions and zones come from the approved detailing.

Schedule for the shown marks

Mark / position	Shape	Dia mm	Count	Cut mm	Total m	D ² /162 kg/m	kg
C1: Vertical, one stated lap allocation	Straight	20	4	4000	16.000	2.469136	39.51
C2: Rectangular tie	Rectangle, two 135 deg ends	8	21	1150	24.150	0.395062	9.54
SUBTOTAL			25		40.150		49.05

Diameter summary

Dia mm	Pieces	Total m	Weight kg
8	21	24.150	9.54
20	4	16.000	39.51

Input dimensions and reinforcement

Input	Value	Input	Value
Scheduling height	3000 mm	Column width	350 mm
Column depth	350 mm	Cover to outside of tie	40 mm
C1 vertical diameter	20 mm	C1 vertical count	4 bars
Allocated lap per vertical bar	1000 mm	C2 tie diameter	8 mm
C2 maximum spacing	150 mm	First/last tie centre offset	50 mm
Nominal hook addition multiplier	10 d	Minimum nominal hook addition	75 mm
Cut-length rounding increment	25 mm		

Column: calculation steps

ROUNDUP(x, 0) rounds upward to a whole number. MAX chooses the larger value. All length inputs are mm.

Step	Arithmetic / result
C1 straight length with stated lap	$3000 + 1000 = 4000 \text{ mm}$
C2 first-to-last centre distance	$3000 - 2 \times 50 = 2900 \text{ mm}$
C2 spaces, rounded up	$\text{ROUNDUP}(2900 / 150, 0) = 20 \text{ spaces}$
C2 tie count	$20 + 1 = 21 \text{ bars}$
Outside link width a	$350 - 2 \times 40 = 270 \text{ mm}$
Outside link height b	$350 - 2 \times 40 = 270 \text{ mm}$
Nominal addition H per end	$\text{MAX}(10 \times 8, 75) = 80 \text{ mm}$
Outside rectangle perimeter	$2 \times (270 + 270) = 1080 \text{ mm}$
Three 90 deg deductions	$3 \times 2 \times 8 = 48 \text{ mm}$
Two 135 deg deductions	$2 \times 3 \times 8 = 48 \text{ mm}$
Raw approximate link length	$1080 + 2 \times 80 - 48 - 48 = 1144 \text{ mm}$
Scheduled link cutting length	$\text{ROUNDUP}(1144 / 25, 0) \times 25 = 1150 \text{ mm}$

Weight calculation by mark

C1: $4 \times 4000 / 1000 = 16.000 \text{ m}$; $16.000 \times 20^2 / 162 = \text{approximately } 39.506173 \text{ kg}$, displayed 39.51 kg.

C2: $21 \times 1150 / 1000 = 24.150 \text{ m}$; $24.150 \times 8^2 / 162 = \text{approximately } 9.540741 \text{ kg}$, displayed 9.54 kg.

Sum unrounded weights. Procurement waste and excluded design bars are separate. The beam/column link shortcut is approximate and does not establish bend radii or fabrication hook tails.

Marked drawing and member FAQs: <https://sitesetu.app/bar-bending-schedule/column>

Footing bar bending schedule

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One 2,100 x 2,100 x 450 mm isolated footing with 50 mm edge and bottom cover. The assumed detail specifies straight 12 mm bars at maximum 150 mm spacing in both directions. Only the two bottom-mesh marks are included.

F1 runs in X and is the lower layer; F2 runs in Y directly above it. Edge cover is measured to each bar's surface. Footing depth establishes the section but does not enter these straight cutting lengths. Column starters, chairs, top reinforcement and any bent-up ends must be measured separately from the actual design.

Schedule for the shown marks

Mark / position	Shape	Dia mm	Count	Cut mm	Total m	D ² /162 kg/m	kg
F1: Bottom mesh, X direction	Straight	12	15	2000	30.000	0.888889	26.67
F2: Bottom mesh, Y direction	Straight	12	15	2000	30.000	0.888889	26.67
SUBTOTAL			30		60.000		53.33

Diameter summary

Dia mm	Pieces	Total m	Weight kg
12	30	60.000	53.33

Input dimensions and reinforcement

Input	Value	Input	Value
Footing overall X dimension	2100 mm	Footing overall Y dimension	2100 mm
Footing thickness	450 mm	Edge and bottom cover	50 mm
F1 X-bar diameter	12 mm	F1 maximum spacing	150 mm
F2 Y-bar diameter	12 mm	F2 maximum spacing	150 mm

Footing: calculation steps

ROUNDUP(x, 0) rounds upward to a whole number. MAX chooses the larger value. All length inputs are mm.

Step	Arithmetic / result
F1 straight cutting length	$2100 - 2 \times 50 = 2000$ mm
F1 centres across Y	$2100 - 2 \times 50 - 12 = 1988$ mm
F1 spaces, rounded up	ROUNDUP($1988 / 150, 0$) = 14 spaces
F1 bar count	$14 + 1 = 15$ bars
F2 straight cutting length	$2100 - 2 \times 50 = 2000$ mm
F2 centres across X	$2100 - 2 \times 50 - 12 = 1988$ mm
F2 spaces, rounded up	ROUNDUP($1988 / 150, 0$) = 14 spaces
F2 bar count	$14 + 1 = 15$ bars

Weight calculation by mark

F1: $15 \times 2000 / 1000 = 30.000$ m; $30.000 \times 12^2 / 162 =$ approximately 26.666667 kg, displayed 26.67 kg.

F2: $15 \times 2000 / 1000 = 30.000$ m; $30.000 \times 12^2 / 162 =$ approximately 26.666667 kg, displayed 26.67 kg.

Sum unrounded weights. Procurement waste and excluded design bars are separate. The beam/column link shortcut is approximate and does not establish bend radii or fabrication hook tails.

Marked drawing and member FAQs: <https://sitesetu.app/bar-bending-schedule/footing>

Conventions and sources

Dimensions

All input and cut lengths are mm. Link dimensions are outside-to-outside. Cover is to the outer steel surface. Do not substitute centreline dimensions into the outside-dimension link shortcut.

Bend deductions

45 deg = 1d; 90 deg = 2d; 135 deg = 3d as site estimating approximations. The examples have three 90 deg and two 135 deg bends. IS 2502 and SP 34 use shape-specific dimensions and allowances, not a universal angle-only deduction table. Radius and steel type matter.

Hook extension / allowance

Example input $H = \max(10d, 75 \text{ mm})$ per end; with $d = 8 \text{ mm}$, $H = 80 \text{ mm}$. 10d/minimum 75 mm is the IS 13920:1993 extension. The 2017 amendment to IS 13920:2016 uses 8d/minimum 75 mm for the cited links. We retain 10d to match the pillar's illustrative exercise.

Approximate link length

$2(a + b) + 2H - [3(2d) + 2(3d)]$, then round up to a 25 mm increment. Here H is inserted as a nominal estimating addition. A straight hook tail is not a complete bend allowance. This shortcut does not verify the physical tail or bend radius. Use the approved shape for fabrication.

Bar counts

$\text{Ceiling}(\text{first-to-last centre distance} / \text{maximum spacing}) + 1$. Both endpoint bars are included. Mesh centre distance = overall transverse size - 2 x cover - bar diameter. Count shared zone boundaries once.

Weight

Total length x $D^2/162 \text{ kg/m}$, keeping full precision until display. Approximate theoretical mass. The 12 mm shortcut is 0.888889 kg/m versus 0.888 kg/m in IS 1786 Table 1. Use the contract's basis for billing.

Rounding and scope

Bent lengths round upward to 25 mm; these straight lengths already fall on 25 mm increments. Weights display to 2 decimals. IS 2502 clause 5.1.1 and SP 34 clause 13.3.3.1 require the excess to be accommodated in a specified portion. Waste, stock optimisation and omitted design bars are separate.

Reference register

IS 2502:1963 - clauses 3.1, 5.1.1 and Tables II-IX

Dimensioned shapes, allowances and cutting-length increments.

<https://law.resource.org/pub/in/bis/S03/is.2502.1963.pdf>

SP 34:1987 - section 5 and clause 13.3.3.1

Bar marks, member schedules, sketches and the 25 mm scheduling increment.

<https://law.resource.org/pub/in/bis/S03/is.sp.34.1987.pdf>

IS 13920:1993 - clauses 6.3.1 and 7.3.2

Historical 135 deg hoop extension: 10d, at least 75 mm.

<https://law.resource.org/pub/in/bis/S03/is.13920.1993.pdf>

IS 13920:2016, Amendment 1 (September 2017)

Reproduced BIS amendment: 8d, at least 75 mm in beam clause 6.3.1(a) and column clause 7.4.1. Check the project edition and subsequent amendments.

<https://pdfcoffee.com/is-13920-2016-amendments-pdf-free.html>

IS 1786:2008 - Table 1

Nominal mass differs slightly from the $D^2/162$ approximation.

<https://law.resource.org/pub/in/bis/S03/is.1786.2008.pdf>

IS 456:2000 - clauses 26.2 and 26.4

Development, laps and nominal cover; use the approved design values.

<https://law.resource.org/pub/in/bis/S03/is.456.2000.pdf>

Before issue

Add project, member and pour identifiers, drawing/revision, concrete and steel grades, preparation date and checker.

Reconcile all reinforcement callouts. This print contains illustrative quantities, not a structural design or fabrication approval.

Editable workbook and drawings: <https://sitesetu.app/bar-bending-schedule>