Formwork (Shuttering) Area for Columns, Beams and Slabs

Shuttering area of rectangular columns, beams and slab soffits from their sizes and numbers, for estimating formwork and labour.

Method: Contact area of formwork (Common site practice (quantity estimating))

Input parameters

Unit system: SI

Parameter	Value	Unit
Column width	0.30000	m
Column depth	0.45000	m
Column height	3.0000	m
Number of columns	12.000	
Beam width (soffit)	0.23000	m
Beam depth below the slab (sides)	0.33000	m
Total beam length (clear spans)	90.000	m
Slab soffit area (less beam soffits)	160.00	m²
Slab edge length	56.000	m
Slab thickness	0.15000	m

Calculated results

Parameter	Value	Unit
Columns (four sides)	54.000	m²
Beams (soffit and two sides)	80.100	m²
Slab soffit and edges	168.40	m²
Total formwork area	302.50	m²

Formula and method

$$A_c = 2(b_c + d_c)h_c n_c, \quad A_b = (b_b + 2d_b)L_b, \quad A_{sl} = A_s + P_s t_s$$

Variables

b_c	Column width	m
d_c	Column depth	m
h_c	Column height	m
n_c	Number of columns	-
b_b	Beam width (soffit)	m
d_b	Beam depth below the slab (sides)	m
L_b	Total beam length (clear spans)	m
A_s	Slab soffit area (less beam soffits)	m²
P_s	Slab edge length	m
t_s	Slab thickness	m
A_c	Columns (four sides)	m²
A_b	Beams (soffit and two sides)	m²
A_{sl}	Slab soffit and edges	m²
A	Total formwork area	m²

Method and standards

Contact areas.

Assumptions and limits

- Rectangular members.

References

- Contact area of formwork (Common site practice (quantity estimating))

Report details

Report reference	FCC-2EKX-JT6G (the same inputs always give the same reference)
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Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/civil/concrete/formwork-area

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Reopens the calculator with the inputs of this report.