Concrete Block or AAC Block Work Quantity

Number of blocks, mortar and cement bags for a wall of concrete or AAC blocks from the wall area, block size, joint thickness and mix.

Method: Blocks per m² = 1/((l + j)(h + j)); mortar by dry volume (Common site practice (quantity estimating))

Input parameters

Unit system: SI

Parameter	Value	Unit
Wall area (less openings)	100.00	m²
Block length	600.00	mm
Block height	200.00	mm
Block thickness (wall thickness)	200.00	mm
Joint thickness	10.000	mm
Allowance for broken blocks	5.0000	%
Sand parts per part of cement	6.0000	
Dry volume factor of mortar	1.3300	
Bulk density of cement	1,440.0	kg/m³
Mass of one cement bag	50.000	kg

Calculated results

Parameter	Value	Unit
Blocks needed (with allowance)	819.67	
Wall volume	20.000	m³
Wet mortar volume	1.2646	m³
Cement bags	6.9201	
Sand volume	1.4417	m³

Notes for this case

- AAC blocks laid with thin-bed adhesive need far less mortar: set the joint to 3 mm and use the adhesive maker's coverage instead.

Formula and method

$$N = \frac{A}{(l+j)(h+j)}(1+k_w), \quad V_m = At - N_0\, lht$$

Variables

A	Wall area (less openings)	m²
l	Block length	m
h	Block height	m
t	Block thickness (wall thickness)	m
j	Joint thickness	m
k_w	Allowance for broken blocks	-
S	Sand parts per part of cement	-
f_d	Dry volume factor of mortar	-
ρ_c	Bulk density of cement	kg/m³
m_b	Mass of one cement bag	kg

N	Blocks needed (with allowance)	-
V_w	Wall volume	m³
V_m	Wet mortar volume	m³
N_b	Cement bags	-
V_s	Sand volume	m³

Method and standards

Geometry and dry volume method.

Assumptions and limits

- Uniform wall, single leaf.

References

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Report details

Report reference	FCC-8FR0-ZSKV (the same inputs always give the same reference)
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Release checks	3 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/quantities/block-work-quantity

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.