Asphalt (Bituminous) Quantity in Tonnes

Tonnes of asphalt or bituminous mix for a pavement layer from area, compacted thickness and compacted density, with the binder content and truck loads.

Method: Mass = area × compacted thickness × compacted density

Input parameters

Unit system: SI

Parameter	Value	Unit
Area to pave	2,000.0	m²
Compacted layer thickness	50.000	mm
Compacted density of the mix	2,350.0	kg/m³
Binder content (by mass of mix)	5.5000	%
Wastage allowance	3.0000	%
Truck load	20.000	t

Calculated results

Parameter	Value	Unit
Mix needed (with wastage)	242.05	t
Binder in the mix	13.313	t
Truck loads (rounded up)	13.000	

Formula and method

$$m = A\,t\,\rho\,(1 + k_w), \quad m_b = b\,m$$

Variables

A	Area to pave	m²
t	Compacted layer thickness	m
ρ	Compacted density of the mix	kg/m³
b	Binder content (by mass of mix)	-
k_w	Wastage allowance	-
m_t	Truck load	kg
m	Mix needed (with wastage)	kg
m_b	Binder in the mix	kg
N	Truck loads (rounded up)	-

Method and standards

Mass of the compacted layer.

Assumptions and limits

- Uniform thickness.

References

- Mass = area × compacted thickness × compacted density

Report details

Report reference	FCC-QQAH-G6BJ (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/roads/asphalt-tonnage

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.