

# GRAVEL CALCULATION REFERENCE

Standard volume, density, and tonnage formulas for estimating gravel requirements

## GRAVEL VOLUME & TONNAGE FORMULA

$$\begin{aligned} \text{Length} \times \text{Width} \times \text{Depth} &= \text{Volume (cubic feet)} \\ \text{Cubic Feet} \div 27 &= \text{Cubic Yards} \\ \text{Depth (feet)} &= \text{Inches} \div 12 \\ \text{Tons} &= \text{Cubic Yards} \times \text{Density (tons per cubic yard)} \end{aligned}$$

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$$\begin{aligned} 1 \text{ cubic yard} &= 27 \text{ cubic feet} \\ 1 \text{ foot} &= 12 \text{ inches} \end{aligned}$$

### Gravel Coverage per Cubic Yard

Depth	Coverage
2 inches	~162 sq ft
3 inches	~108 sq ft
4 inches	~81 sq ft
6 inches	~ 54 sq ft

Coverage values are approximate and vary with material shape and compaction.

### Material Density

Material	Tons per Cubic Yard
Pea Gravel	~1.40
Crushed Stone	~1.50
River Rock	~1.30
Granite	~1.45
Limestone	~ 1.35

Density varies by supplier and moisture content.

### Allowance Adjustments

$$\begin{aligned} \text{Waste Yards} &= \text{Base Yards} \times (\text{Waste \%} \div 100) \\ \text{Compaction Yards} &= \text{Base Yards} \times (\text{Compaction \%} \div 100) \\ \text{Total Yards} &= \text{Base} + \text{Waste} + \text{Compaction} \\ \text{Total Tons} &= \text{Total Yards} \times \text{Density} \end{aligned}$$

Simple Area	5-10%
Standard Projects	10%
Irregular Slope	10-15%

### Driveway Gravel Example 20 ft x 40 ft x 4 inches

Depth in feet:	Cubic Feet:	Cubic Yards:	Using Crushed Stone (1.50 tons/yd <sup>3</sup> ):
$4 \div 12 = 0.333 \text{ ft}$	$20 \times 40 \times 0.333 = 266.7 \text{ ft}^3$	$266.7 \div 27 = 9.88 \text{ yd}^3$	$9.88 \times 1.50 = 14.82 \text{ tons (before allowances)}$

### Measurement Notes

- Measure length and width in feet
- Convert depth from inches to feet
- Multiple depth measurements may be used on uneven grade
- Round up when ordering bulk material

### Common Depth Ranges

Walkways	2-3 inches
Driveways	4-6 inches
Drainage Beds	6+ inches
Base Layers	Vary By Design

### Ordering Notes

- Gravel sold by cubic yard or ton
- Supplier density may vary
- Compaction reduces loose depth
- Delivery minimums may apply