

Volume of Grout Required in Masonry Walls

GROUT REQUIREMENTS

UNIFORM BUILDING CODE 1973 EDITION
SECTION 2403

Materials

(s) Grout. 1. General. Grout shall be proportioned by volume and shall have sufficient water added to produce consistency for pouring without segregation. Aggregate shall conform to the requirements set forth in U.B.C. Standard No. 24-24.

2. Type. Fine grout shall be composed of one part portland cement, to which may be added not more than one-tenth part hydrated lime or lime putty, and two and one-fourth to three parts sand.

Coarse grout shall be composed of one part portland cement to which may be added not more than one-tenth part hydrated lime or lime putty, and two to three parts sand, and not more than two parts gravel.

Coarse grout may be used in grout spaces in brick masonry 2 inches or more in horizontal dimension and in grout spaces in filled-cell construction 4 inches or more in both horizontal dimensions.

3. Strength. Grout shall attain a minimum compressive strength of 2000 pounds per square inch at 28 days. The Building Official may require a compressive field strength test of grout made in accordance with U.B.C. Standard. No. 24-23

Concrete Block Construction

| Standard Two Cell Block* | Grouted Cells Vert. Steel Spacing | Cu. Yds. [▲] of Grout Per 100 Sq.Ft. of Wall | Cu. Yds. per [▲] 100 Block (8" High) (16" Long) | Block per Cu. Yd. (8" High) (16" Long) |
|--------------------------|-----------------------------------|---|--|--|
| 6" THICK WALLS | All Cells Filled | 0.93 | 0.83 | 120 |
| | 16" O.C. | 0.55 | 0.49 | 205 |
| | 24" O.C. | 0.42 | 0.37 | 270 |
| | 32" O.C. | 0.35 | 0.31 | 320 |
| | 40" O.C. | 0.31 | 0.28 | 360 |
| 48" O.C. | 0.28 | 0.25 | 396 | |
| 8" THICK WALLS | All Cells Filled | 1.12 | 1.00 | 100 |
| | 16" O.C. | 0.65 | 0.58 | 171 |
| | 24" O.C. | 0.50 | 0.44 | 225 |
| | 32" O.C. | 0.43 | 0.38 | 267 |
| | 40" O.C. | 0.37 | 0.33 | 300 |
| 48" O.C. | 0.34 | 0.30 | 330 | |
| 10" THICK WALLS | All Cells Filled | 1.38 | 1.23 | 80 |
| | 16" O.C. | 0.82 | 0.73 | 137 |
| | 24" O.C. | 0.63 | 0.56 | 180 |
| | 32" O.C. | 0.53 | 0.47 | 214 |
| | 40" O.C. | 0.47 | 0.42 | 240 |
| 48" O.C. | 0.43 | 0.38 | 264 | |
| 12" THICK WALLS | All Cells Filled | 1.73 | 1.54 | 65 |
| | 16" O.C. | 1.01 | 0.90 | 111 |
| | 24" O.C. | 0.76 | 0.68 | 146 |
| | 32" O.C. | 0.64 | 0.57 | 174 |
| | 40" O.C. | 0.57 | 0.51 | 195 |
| 48" O.C. | 0.53 | 0.47 | 215 | |

*For open end block add 10% more grout
For slumped block deduct 5% grout.
Horizontal bond beams assumed spaced 4'0.C.

2 Wythe Brick Wall Construction

| Width of Grout Space (Inches) | Cubic Yards of Grout per 100 Sq. Ft. of Wall [▲] | Sq. Ft. of Wall per Cubic Yard of Grout [▲] |
|-------------------------------|---|--|
| 2.0 | 0.64 | 157 |
| 2.5 | 0.79 | 126 |
| 3.0 | 0.96 | 105 |
| 3.5 | 1.11 | 90 |
| 4.0 | 1.27 | 79 |
| 4.5 | 1.43 | 70 |
| + 5.0 | 1.59 | 63 |
| 5.5 | 1.75 | 57 |
| 6.0 | 1.91 | 52 |
| 6.5 | 2.07 | 48 |
| 7.0 | 2.23 | 45 |
| 8.0 | 2.54 | 39 |

[▲]A 3% allowance has been included for loss and job conditions.
⁺It is recommended that floaters be used in low lift grouting when the grout space is 5" or more wide.

For Engineering Information and Details contact

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