



4,000 PSI Shotcrete Mix Design – Per Yard

For Monolithic Concrete Dome Type Structures

Type I, II Portland Cement	752 pounds
Flyash	100 pounds
Sand – 1/4" minus	2800 pounds (approximate)
Water Reducer	3 ounces
Air Entrainment	3 to 5 percent
Water	40 to 50 gallons (depending on moisture content of sand, etc.)

If there is no flyash available – or it is cost prohibitive – substitute an additional 94 pounds of cement.

The critical fineness modulus number (FM#) for sand shall be between 2.60 and 2.90 with 2.76 as the ideal number. Sand shall generally consist of the following gradation:

Sieve size	Percent passing by weight
No. 4	100%
No. 8	90%
No. 16	85%
No. 30	60%
No. 50	30%
No. 100	10%

If sand does not have sufficient coarse aggregate to provide a pump-able mix, substitute 250 pounds of sand for 3/8" minus aggregate. The weight of sand will vary by geological region to make a cubic yard equivalent.

Some field determined adjustments may be required based on the type and quality of the aggregate.

Mix design target is 4,000 psi strength at 28 days. Slump may vary from 3 to 7 inches.