

PUMICE CONCRETE IS AN ALTERNATIVE TO CONVENTIONAL CONCRETE

Pumice concrete is composed of Portland cement, pumice rock, pumice sand, pozzolan, and water. Compared to regular concrete, pumice concrete offers roughly a one-third reduction in weight and four times the R-Value. Additional benefits include sound absorption, reduction or elimination of moisture condensation on walls and ceilings, elasticity for reduced brittleness under earthquake conditions, will not spall under direct contact with flame, resistant to freeze thaw.

Proportioning, mixing and placing are done in a similar manner to that of conventional concrete and pumice concrete is used in the same applications as sand-and-gravel concrete. It is also placed, screed, troweled and finished with the same equipment. Due to its unique properties, pumice concrete is an appropriate material for varying climates.

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Mix Designs for Pumice Concrete

QUANTITIES ARE PER CUBIC YARD

MIX NO. (LBS)	CEMENT CONTENT (LBS)	PUMICE 1/8 FINES (LBS)	PUMICE 3/4 x 5/16 (LBS)	NATURAL SAND	WATER (GALLONS)	A.E.A (OUNCES) (GALLONS)	SHRINK REDUCER (GALLONS)	WATER REDUCER	POZZOLAN* (LBS)
1500 P	470	1000	1000	–	20-25	5.4	–	–	94
2000 P	517	1000	1000	–	25-30	5.4	–	–	103.4
2500 P	570	1060	1060	–	25-30	5.4	–	0.5	114
3000 P	658	942	1144	–	18-20	5.4	–	1	131.6
2500 LS	540	1070	1070	–	30	5.4	1.25	0.5	108
3000PNS	630	–	900	2370	23	3	–	–	126

Concrete Properties

MIX NO.	28 DAY STRENGTH (PSI)	SLUMP (INCHES)	WET WEIGHT (PCF)	DRY WEIGHT (PCF)	R-VALUE	E-VALUE
1500 P	1500	1 - 2	–	–	–	–
2000 P	2000	1 - 2	–	–	–	–
2500 P	2500	1 - 2	99	89	0.46	2.2
3000 P	3000	1 - 2	109	–	–	–
2500 LS	2500	2 - 3	–	–	–	–
3000PNS	3000	2 - 3	116	110	–	–

Admixture Additives

1. A.E.A. is Amex 210 Air Entrainer by Grace Construction Products.
2. Shrink Reducer is Eclipse Shrinkage Reducer by Grace Construction Products.
3. Water Reducer is Daracem ML 330 Superplasticizer by Grace Construction Products.
4. *Pozzolan is Hess Pozz Standard (DS325).