

Perlite Concrete Mix Designs

Materials per Cubic Yard Based on 100% Yield

Mix Ratio (Cement/ Perlite) Volume	Oven Dry Density lb./cu.ft.	Cement bags	Perlite cu. ft.	Water gal.	Air Entraining Agent pints	Wet Density Range lb./cu.ft
1:4	36	6.75	27	61	*	48-56
1:5	30.5	5.40	27	59.5	*	42-50
1:6	27	4.50	27	54	*	38-44
1:8	22	3.38	27	54	*	34-40

*Air Entraining Agent. Neutralized vinsol resin or other air entraining agent. Approx. 14% air solution. Follow manufacturer's recommendations.

Typical Physical Properties of Perlite Concrete*

Mix Ration (cement/ perlite) Volume	Typical Oven Dry Density lb./cu.ft.	Dry Density Range lb./cu.ft.	Thermal Conductivity Range "k"^(Compressive Strength Range lb./sq.in.	Minimum Compressive Strength lb./sq.in.
1:4	36	36-42	.83-.97	300-500	300
1:5	30.5	30-36	.71-.83	200-300	200
1:6	27	24-30	.58-.71	125-200	125
1:8	22	18-24	.46-.58	80-125	80

*Mixing is critical to expected properties and yields. Over-mixing or excessive water will adversely affect results. In paddle-type mixer, mix cement, air entraining agent and water into a slurry. Then add perlite aggregate and mix only until coated (2-5 min.).

Perlite/Sand Concrete – Typical Physical Properties & Mix Proportions

Air Dry Density lb./cu.ft.	Compressive Strength Range lb./sq.in.	Wet Density When Placed lb./cu.ft.	Cement cu.ft.	Perlite cu.ft.	Sand cu.ft.	Water gal.	Air Entraining ozs.
65	800-900	82 ± 5	1	3	2.2	11.2	3
75	900-1200	80 ± 5	1	3	2.0	8.0	3
82	1100-1300	98 ± 5	1	1.6	2.5	9.2	3
88	2300-2500	105 ± 5	1	1.1	2.1	7.8	3
99	2000-2200	110 ± 5	1	3	1.75	8.4	3