



# Technical Bulletin

## CELLULAR CONCRETE STRENGTH / DENSITY CHART

THESE MATERIAL WEIGHTS AND MEASURES ARE FOR ONE INDIVIDUAL CUBIC YARD OF CELLULAR CONCRETE  
MULTIPLY THESE AMOUNTS BY THE NUMBER OF CUBIC YARDS YOU WISH TO BATCH FOR YOUR PROJECT

### TYPICAL NEAT CEMENT (NO SAND) MIXES

The following chart illustrates the various typical properties of **Weight Density** (lb./c.f.), **Compressive Strength**, (psi), and **Thermal Conductivity** values attainable with various volumes of preformed foam additions to Neat Cement Mixes.

TYPICAL VALUES					
Wet Cast Density lb/ft <sup>3</sup>	Dry Density lb/ft <sup>3</sup>	Compressive Strength * (28 Days) lb/in <sup>2</sup>	"k" Thermal** Conductivity Btu in/h ft <sup>2</sup> °F	Portland Cement lbs/yd <sup>3</sup>	Foam Volume ft <sup>3</sup> /yd <sup>3</sup>
20	16	50	0.54	328	22.7
25	20	80	0.60	420	21.5
30	25	140	0.67	512	20.3
35	29	210	0.76	603	19.1
40	34	330	0.87	695	17.9
45	38	450	0.98	787	16.7
50	43	640	1.06	878	15.5
55	47	790	1.20	970	14.3
60	51	930	1.33	1062	13.1

\*The compressive strengths shown are approximate. As with ordinary concrete, the strength at any given density and mix proportion will also vary with the type of cement and the final water content of the mix. Substantial increases in strength will result by reduction of the w/c ratio, such as is possible with efficient mixing equipment and by curing in low-pressure steam. Other admixtures such as foam compatible dispersing agents and water reducing agents may contribute to strength increases.

\*\*Reference: National Bureau of Standards Data from "Insulating Concretes", ACI Journal (Nov. 1956)

Typical Mix Designs Illustrated above are based on a water/cement Ratio of 0.50  
Method of ASTM C 495 used for compressive strength testing of Lightweight Insulating Concrete

Actual properties will depend on cement used, curing conditions and other variables as dictated by job conditions.

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### SAND / CEMENT GROUT MIXES

The following chart illustrates the various typical properties of **Weight Density** (lb./c.f.), **Compressive Strength**, (psi), and **Thermal Conductivity** values attainable with various volumes of preformed foam additions to Sand / Cement Mixes.

**(Based on dry sand/cement ration of 300 lb. sack and 8.75 sacks cement/ yd<sup>3</sup> of unfoamed grout)**

#### TYPICAL VALUES

Wet Cast Density lb/ft <sup>3</sup>	Dry Density lb/ft <sup>3</sup>	Compressive Strength * (28 days) lb/in <sup>2</sup>	"k" Thermal ** Conductivity Btu in/h ft <sup>2</sup> °F	Portland Cement lbs/yd <sup>3</sup>	Sand dry (lbs)	Water (US Gal)	Foam Volume ft <sup>3</sup> /yd <sup>3</sup>
90	85	400 - 500	3.30	512	1640	32.8	10.10
95	90	750 - 1,000	3.70	542	1730	34.6	9.10
100	95	1000 - 1,500	4.10	570	1815	36.5	8.20
105	100	1,500 - 2,000	4.50	600	1915	38.3	7.30
110	105	2,000 - 2,500	5.00	630	2010	40.2	6.40
115	110	2,500 - 3,000	5.50	658	2100	42.0	5.40
120	115	3,000 - 3,500	6.00	688	2190	43.8	4.50
125	120	3,500 - 4,000	6.60	714	2280	45.7	3.50

\*The compressive strengths shown are approximate. As with ordinary concrete, the strength at any given density and mix proportion will also vary with the type of cement, the quality and fineness of the sand and the final water content of the mix. Substantial increases in strength will result by reduction of the w/c ratio, such as is possible with efficient mixing equipment and by curing in low-pressure steam. Other admixtures such as foam compatible dispersing agents and water reducing agents may contribute to strength increases.

\*\*Reference: National Bureau of Standards Data from "Insulating Concretes", ACI Journal (Nov. 1956)

Actual properties will depend on cement used, curing conditions and other variables as dictated by job conditions. The above typical mix designs are based on a water / cement ration of 0.53