

# RedcoLite® Ultra Lightweight Concrete

A premium PERLITE product by  
**REDCO II**

PRODUCT  
INFORMATION  
BULLETIN

**504c**

## RedcoLite Concrete Aggregate

RedcoLite Concrete Aggregate is an expanded perlite of very low density, meeting the requirements of ASTM C332. Portland Cement mixes using RedcoLite as the sole aggregate have been designed to produce ultra-light concrete with dry densities from 22 lb. per cubic foot to 77 lb. per cubic foot. Compressive strength can range between 90 and 1,900 psi. Insulation value increases dramatically as the density decreases. (Note: In most cases RedcoLite Plaster Aggregate may be substituted for RedcoLite Concrete Aggregate with equivalent results. Consult your Building Material Dealer.)

The table below covers the range of densities and strengths of ultra light RedcoLite Concrete without other aggregates (using RedcoLite as the sole aggregate). Quantities are for one sack batches with perlite proportions expressed as a ratio of loose volumes. A 94 lb. sack of cement is presumed to be one cubic foot, loose. It should be noted that the figures given are approximate. Actual results can vary depending on a number of variables, including (but not limited to) mixing time and sequencing, water quality, and admixtures used.

TABLE OF CONCRETE MIXES

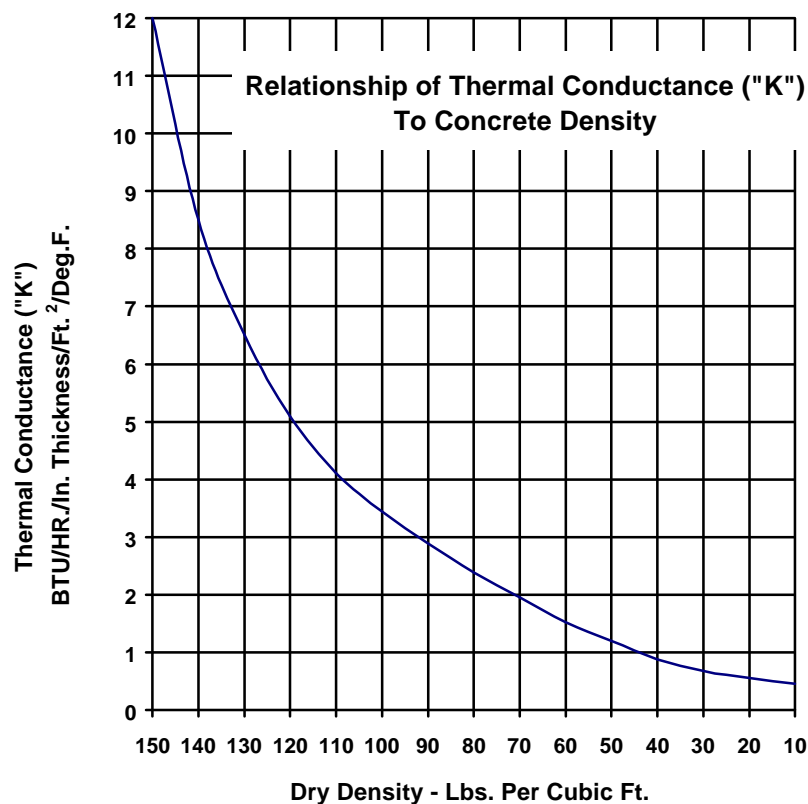
DENSITY Lb./Cu.Ft. Dry - Wet	Compressive Strength psi	Cement	RedcoLite	Water Gal.	Admix Fl. Oz.	Yield Cu. Ft.	Typical Applications
22 37	90-125	1	8	16	28A	8	Pool Base
27 42	125-200	1	6	13	24A	6	Insulating Roof Deck
36 50	350-500	1	4	10	16A	4	General Purpose
47 62	800-1100	1	3	9	8A	3	Plaster
45 60	800-1100	1	3	8-9	8B	2.7	Plaster
61 77	1500-1900	1	2	5-6	8B	1.7	Floor Fill, Statuary, Architectural Moldings

ADMIXTURE  
<sup>A</sup> Air Entrainment  
<sup>B</sup> Plasticizer

Densities of conventional structural concrete are noted below for reference:

AGGREGATE		DRY DENSITY Lb./Cu.Ft.
<u>FINE</u>	<u>COARSE.</u>	
Concrete Sand	Gravel	140 - 150
Concrete Sand	Expanded Shale	100 - 110
Expanded Shale	Expanded Shale	90 - 100

The curve below shows the significant rise in insulation value as concrete density decreases. (Data from Portland Cement Association and Perlite Institute.)



MIXING

Proper Mixing will assure maximum yield and uniformity. Low shear, low RPM mixers (similar to plaster mixers) are recommended for fastest uniform mixing on the jobsite.

1. Add all materials except RedcoLite (Cement, Water, Admix, and other aggregate, if required); mix until this slurry is fairly uniform. Two minutes will usually suffice.
2. Add all RedcoLite and mix only long enough for a uniform mix, probably 2 to 3 minutes.

Excess water and under mixing may reduce yield and workability. Over-mixing may degrade the RedcoLite and increase concrete density. Optimum mixing cycle can usually be settled with one or two trial batches.