

AEROLITE QUARRIES PTY LTD

Indicative Specification Sheet:

Lightweight Concrete Aggregate

PARTICLE DENSITY AND WATER ABSORPTION – 14mm Aggregate (Black) (AS 1141.5)

Uncompacted Bulk Density as per dry basis	0.77 Tonne/M3
Apparent Particle Density	1.92 Tonne/M3
Dry Particle Density	1.51 Tonne/M3
Saturated Surface Dry Particle Density	1.72 Tonne/M3
Water Absorption	14.3 %

AEROLITE FOR LIGHTWEIGHT CONCRETE

Basaltic, or heavyweight aggregate, normally used in dense weight concrete, has a specific gravity of 2.7–2.9 and a density of approximately 1600 kgs per cubic metre. However, Aerolite's concrete aggregate is less than half this density and when used in place of heavier stone (representing approx 50% of total batch weight of concrete) reduces the weight of concrete by close to 25%.

DESIGN DENSITIES OF AIR DRIED CONCRETE

Heavyweight concrete 2400 Kgs / M3
AEROLITE Lightweight concrete 1760 Kgs / M3

PARTICLE SIZE DISTRIBUTION – 14mm Aggregate (Black) (AS 1141.11 UNWASHED)

Sieve Size (mm)	% Passing
19.00	100
13.20	71
9.50	19
6.70	8
4.75	7
3.35	
2.36	7
1.18	
0.600	
0.425	
0.300	
0.150	
0.075	1

COST OF CONSTRUCTION REDUCED

Not only is there a tangible saving in the cost of materials, as a direct result of using AEROLITE LIGHTWEIGHT AGGREGATE, but there is also a number of ways in which construction costs are reduced. For instance the cost of formwork can be cheaper. The reduced deadload of the wet concrete will require less back propping, economising on time and cost. Where the concrete is to be manhandled, either as wet or precast elements, the weight reduction means cranes work faster and at a greater radius. Even a lighter barrow load can be moved quicker.

LIGHT BUT STRONG

With a ceiling strength of about 50 MPA at 28 days, lightweight concrete can be used for practically all construction applications. It is in common use for columns, beams, slabs and precast walls in a wide variety of buildings. These range from two storey factories and office blocks to high rise commercial and residential projects.

SUGGESTED MIX DESIGN

Cement GP - content per M3	420 Kg
14mm Lightweight Aggregate (Black)	450 Kg
Sand content per M3	740 Kg
Polyheed 850	500 ml / 100 Kg Cement (in Winter)
Pozzolith 370	400 ml / 100 Kg Cement (in Summer)
Mix to 40-60 mm Slump	Water Demand is approx 150 litre

CUSTOMISED CONSULTATION

There are many different and varied ways that lightweight concrete can be used in industry. We therefore have recognised concrete consultants available to analyse our clients' specific needs and to then construct suitable mix designs. This service is very personalised and achieves results second to none. Aerolite also offers to negotiate with the local concrete suppliers on behalf of our clients.

STRENGTHS

Stripping Strength (24 hours)	12-15 MPA
7 Day Strength	Excess of 30 MPA
28 Day Strength	40 MPA

STRENGTHS

These strengths are indicative of the strengths that will occur using the above suggested mix design. Higher strengths of 50 MPA are achievable along with more workable slumps.