

Density

A.1 If density increases does strength increase or decrease?

As the density of a material increases so will the strength of the material.
Bricks are denser than timber so bricks are stronger.

A.2 Will dense materials absorb more or less water?

The dense material will absorb less water, Engineering bricks are denser than facing FL quality bricks, engineering bricks are harder to lay as they do not absorb the moisture in the mortar the same as FL quality bricks.

Prior to the invention of plastic DPC engineering bricks could be used as a DPC.

A.3 Material density and manual handling are linked why?

Dense materials are heavier, therefore less can be carried, and the maximum weight a person should carry is 25kg with some companies stipulating a maximum of 20kg per person.

A.4 Which block offers better insulation and why?

The lighter less dense, this is because the lighter block contains more air bubbles within the core. It is like you putting a thin plastic coat on it will keep you dry but not warm, put a thick quilted layer beneath and trap in plenty of air you will be warm. You will note, as the block becomes lighter it becomes less dense and less strong.

A.5 Why would you want to use a dense product in a retaining wall?

To retain the wall's needs to be heavy, the wall will need to be heavier than the ground it is retaining.

The greatest affect pushing on a retaining wall is water, wet ground is much heavier then dry ground.

The forces acting on a retaining wall vary depending in the ground conditions, the slope behind, the height of the wall.

Dense materials will also help stop or reduce effloresce, it will reduce the absorption of moisture and salts from the ground by the denser materials.

A.6 How and why does water affect the density of concrete?

Water is used in the manufacture of concrete, so it becomes part of the volume of the concrete.

Concrete dries so what happens to the water, it evaporates leaving behind small pockets and bubbles like the block. The more bubbles the weaker the concrete.

We use a prescribed concrete mix, with the correctly specified water ratio to give the correct 'slump', do NOT add water to a correctly batched concrete mix.

A vibrating concrete poker and tamping makes the air escape and the concrete stronger.