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EABASSOC Aircrete Foaming Agent

Concentrated Foaming Agent can be used to make the foam that is used to make Aircrete, which is also called Foamed Concrete, Cellular Lightweight Concrete or CLC.

Aircrete can be used to make pre-cast elements such as blocks, panels, pavers, posts, garden ornaments, sculptures and more.

Aircrete can also be used for cast in-situ walls, floor screeds, raising floor levels, filling voids and many other building and construction applications.

It is suitable for use by professional contractors and for DIY. Highly concentrated with a low dosage, the typical dosage rate is 0.3 - 1.0 litres of EABASSOC Foaming Agent per 1 m³ of Aircrete. The exact dosage depends upon the density of the aircrete that you are making and the mineral content of your water (if you have soft water with a low mineral content you can halve the dosage rate).

Making Foam for Aircrete

To make foam dilute EABASSOC Foaming Agent by 3% in water, e.g. 30 ml per 1 litre of water, to make a solution. Then either whisk the solution into foam using a domestic power drill with a paint mixer attachment or a foam generator (not supplied). If whisking the solution, make sure that all of the solution has been whisked by tilting your bucket and placing the paint mixer in the lowest part of the bucket. Also move the whisk around in the foam so that the foam becomes homogenous.

The foam should be stiff and should resemble shaving foam in consistency.

You can typically make 650 litres of foam from 1 litre of EABASSOC Foaming Agent. (1 kg of EABASSOC Foaming Agent = 0.98 litres.)

The foam must be immediately added to a mixture of sand, cement and water or a mixture of cement and water in a cement mixer to produce aircrete. Transfer the foam from the bucket using a scoop or shovel.

The mixture of sand, cement and water is known as the slurry and should be made first, before making the foam. The slurry should be kept mixing in the cement mixer whilst the foam is being made and added.

Mix Designs

Aircrete can be made with a range of densities from 400 kg/m³ up to 1600 kg/m³

with a range of compressive strengths typically from 1 MPa to 12 MPa. Usually the higher the density is the higher the strength will be, however it also depends upon how much sand, cement and water are used and also the grade of cement. Two regularly used mixes designs are as follows:

1. Typical Foamed Concrete Mix Design. Suitable for most applications.

Dry Density (kg/m³) 1207

Wet Density (kg/m³) 1320

Portland Cement (kg) 25

Dry Sand (kg) 75

Water (kg) 15

Slurry Density (kg/m³) 2238

Foaming Agent (litres) 0.056

Water (litres) 1.85

Foam (litres) 37

Volume of Foamed Concrete (litres) 88.3

2. Low Density Mix Design. Suitable for Insulation.

Dry Density (kg/m³) 586

Wet Density (kg/m³) 750

Portland Cement (kg) 25

Dry Sand (kg) 0

Water (kg) 13.8

Slurry Density (kg/m³) 1783

Foaming Agent (litres) 0.048

Water (litres) 1.60

Foam (litres) 32

Volume of Foamed Concrete (litres) 53.6

To make different amounts of foamed concrete divide or multiply each quantity by the same factor. For example, to make half the volume divide each quantity by 2. The densities remain the same.

It is possible to create other mix designs to make aircrete with different densities and compressive strengths.

Ideally the sand should be fine sand, with a maximum particle size of 2 mm.

Curing Aircrete

Just like normal concrete, when aircrete is first made it is wet. After about 6 - 12 hours it becomes solid. This is known as setting. After setting it cures, during which time it gains strength. It is important that aircrete is not allowed to dry out whilst it is curing otherwise it will not gain full strength.

After your aircrete has set, cover it with plastic sheeting for at least a few days. If possible keep it in the shade and avoid placing it in direct sunlight for 28 days.

Please Note:

- All **EABASSOC** product information is given in good faith and every effort is made to ensure that it is accurate and up to date. It is, however, the responsibility of the customer to ensure that products are suitable for the required purpose. This may involve carrying out small tests.
- Making good quality foamed concrete requires some experience. We recommend undertaking some practice runs before using it on a project or contract.
- Making and placing foamed concrete involves many steps that are beyond our control. Therefore we cannot provide any guarantees regarding the quality of foamed concrete made using EABASSOC Foaming Agent.
- Please refer to health and safety information on the label. Always wear goggles, gloves and suitable work clothing when using EABASSOC Foaming Agent. Keep away from children.
- We are able to provide practical advice to customers. In order to troubleshoot problems we will need to know certain information about how the foamed concrete has been made, including the exact quantities of each ingredient used, the slurry density and the wet density (see below) which will need to be measured when you are making the foamed concrete.
- Please contact us if you require larger quantities.

Measuring Wet Densities

It is a good idea to measure the wet density of the slurry before you add the foam. This should be done as accurately as possible.

To do this use e.g. a small jar. First weigh it empty (in grams). Then weight it full to the brim with water (in grams). Subtract the empty weight from the full weight of water. This will give you the volume (in ml). Fill the jar with slurry and weigh it (in grams). Subtract the empty weight to get the weight of the slurry (in grams). Then divide weight of the slurry by the volume (in ml). This will give you the density in grams/ml. Record this measurement.

If the actual slurry density does not match the theoretical density, extra foam or less foam can be added to the slurry to compensate for the difference. Also measure the wet density of the foamed concrete.