

## Foam Generator-GS30-GS40-GS80

One of the most important ingredient required to produce foamed concrete is the foaming agent.

The foam generator acts as a medium which transforms the liquid chemical into stable foam. Foam generators comes in many sizes depending on the ability to hold and transform liquid chemical into foam.

As an example , one would need about 500 liters of foam to make 1cubic meter of foamed concrete @ about 1100 kg/m<sup>3</sup> density. For a large mixer machine, for example 250 liters effective capacity we need 125 liters of foam.

In order to make 138 liters foam , one has to dilute say 0.25 liter of chemical foaming agent in 8 liters of water and subsequently transform this 9 liters of premix solution into 138 liters of foam using the generator.

As you can see, the expansion rate is 16 times (138/8.25). We can increase this expansion rate by introducing more air but this will degrade the quality of the foam. Therefore the capacity of a foaming generator will depend very much on its ability to hold and pump out maximum amount of foam.

	GS30	GS40	GS80
Type of equipment	static	static	static
Supplied with air at min.	4 atmospheres	4 atmospheres	8 atmospheres
Minimum air flow	150 liter/ minute	150 liter/ minute	500 liter/ minute
Dimensions	300 X 400 x 500	350 x 450 x 550mm	550 x 650 x 750mm
Volume of tank	25 liters	50 liters	80 liters
Volume of foam for one cycle	425 liters	850 liters	1200 liters
Foam density	40-75 g/liter	40-75 g/liter	40-75 g/liter
Working pressure of the air in the foam generator	3 atmospheres	3 atmospheres	8 atmospheres

The density of foam must be 0.045÷0.075Kg/liter.

The typical foam generator runs from an air compressor and consists of a **holding tank**, **dosing unit** and a **static mixer**. The purpose of the holding tank is to hold the diluted foaming agent and subsequently deliver it through a dosing unit and then to static mixer. It is normally in a the form of a pressurized tank and needs to be closed tight for operation. The volume of foam obtained from such a system depends very much on the size of these

tanks. For large volumes it is impractical to use the tank system since it is bulky to carry about. Large capacity holding tanks are heavy and cumbersome for smaller scale on site production. (Static Foam Generator GS30 and GS40)

In order to overcome this problem, we have developed a compact version of the static foaming generator to cater for small to medium scale for factory or on-site production of foamed concrete. These static foam generators perform well since they rely on mechanical means to deliver the chemicals and are suitable for pilot plant scale production, researchers and self-help house building.

The static foaming generator comes in various models (GS30, GS40) and have the capacity to produce about 100 to 200 liters of foam in one minute. They can be used with a pneumatic delivery unit, air compressor or high pressure tank.

It has specially designed chambers for producing the maximum and efficient output of foam. In addition all of the models have controls for modifying the density of foam and also expansion ratios.

Foam generators come in two models GS30 and GS40. Model GS30 has the lowest output of about 150 lit/min. Model GS40 has output of 200 lit/min. Model GS40 is for larger scale (up to 0.41 cubic meter / mix) continuous foam production.

Model GS30 is suitable for mixing volumes of less than 0.2 cubic meter / mix and is suitable for beginners, DIY builders and some researchers.

It must be pointed however that Foam generators have been tested with Profoam 806 and many other foaming agents and are compatible with the above mentioned chemicals, conforming closely to the data explained.