

## Technical Comparison of different Foamed Concrete Manufacturers

Description	LithoPore® Aerated Concrete Technology	Other Foamed Concrete Technology
<b>Technology</b>	<p>A true foamed concrete technology is depending partially on the machinery used to produce the concrete and foam and partially on the raw material used to generate the foam and other additives to enhance the performance and quality of the foamed concrete. The new innovative foaming agent technology by LithoPore Europe is based on a biotechnological procedure. Thus LithoFoam® products have a neutral, technical odour and are adjustable to every need.</p> <p>With the highly active synthetic proteins in LithoFoam® only 1-5 % active agents are sufficient to reach better results than standard protein based foaming agents, requiring 30-50 % active agents. As a result, less superfluous external material that could disturb the properties of the concrete mix is inserted with the foam. The low ratio of active agents is made possible through a special process using biotechnology, developed by LithoPore Europe. This way LithoFoam® foaming agents can be offered at prices far below those of competitors.</p>	<p>Machinery is mostly coming from the concrete sector and not respecting the special characteristics of foamed concrete.</p> <p>Protein based standard foaming agents are made by protein hydrolysis from animal proteins out of horn, blood, bones of cows, pigs and other remainders of animal carcasses. This leads not only to occasional variations in quality, due to the differing raw materials used in different batches, but also to a very intense smell of such foaming agents.</p> <p>Surfactant based foaming agents are purely chemical products with constant quality, but until today with insufficient properties and low efficiency for the manufacturing of foam concrete.</p>
<b>Concrete density that can be achieved</b>	75 to 1,600 kg/m <sup>3</sup>	400 to 1,600 kg/m <sup>3</sup>
<b>Additive variety</b>	<p>Specific foaming agent (LithoFoam® SL 200-L, SL 400-L, etc.) and special additives (LithoFoam® NWF S, NWF NT, MRF 2000-S) for specific applications.</p> <p>LithoFoam® has got improved silicon oil resistance, frost resistance, anti bacterial properties (effective against mildew). The LithoFoam® foaming agent further more containing a strength increasing agent and is therefore considered to be a compound, not only a product.</p>	<p>Only one standard foaming agent for all applications. No special additives available to improve the performance of concrete. Most of the foaming agent fails under frost conditions, very less resistance to silicon oil and bacterial and fungi infections.</p>
<b>Equipment</b>	<p>LithoPore Europe provides Mobile, Semi-Automatic, Fully Automatic and RMC Systems. All these systems are provided only complete equipment integrated with foam generator, mixing system, weighing system and pumping system. In case of block and panel production, moulds, cutting and vapour curing systems are provided additionally. By providing complete turn-key system we guarantee the quality of not only our equipment but also ensures the quality of end product.</p>	<p>Some technology providers sells only foaming agent and some sells only foam generators and even others provide foam generators and mixers separately. Most of the equipment fail the required production capacity and many won't provide completely automatic system. Also, the end product quality is not consistent and vary time to time</p>



<p><b>Foam generators</b></p>	<p>LithoPore® foam generators are fully automatic, energy efficient and compact system. It is a very precise system wherein the density and quantity of foam output can be varied by changing the values in the pre-selection switch. It can be operated continuously or time-based. Air compressor, water pump and foaming agent pump are integrated in one single machine. Also, on a press of a button, the system cleans on its own after use, using warm heater with an in-built water heater. The air compressor is very compact and uses air pressure of 200 to 300 mBar only.</p>	<p>Many suppliers provide only the foam lance and water pump. The foaming agent has to be mixed manually with the water in specific ratio and feed into the foam generator. The air compressor has to be bought separately locally which will occupy too much of space depending on the capacity. The Foam output is not constant and to vary the density of foam every time the foaming agent to water mixing ratio has to be changed or air volume has to be changed manually. The cleaning is completely manual and therefore no thorough cleaning is ensured.</p>
<p><b>Quality and reliability</b></p>	<p>All the equipment supplied by LithoPore Europe are provided with manufacturing warranty of 1 year. All our equipment and spare parts are made using world renowned companies such as ABB, Siemens control systems, Schneider electric systems, etc. to meet the strict German Standards and Norms. Even the metal parts and welding systems are of high standard that it can withstand the rust and wear and tear for longer years. Also, almost all the equipment require easy and very less maintenance and sometimes auto greasing of moving parts will be provided, if necessary. Ultimately the equipment is reliable for its performance. The Quality Management System (QM-System) of LithoPore Europe has been certified. All operational processes are conducted under the constant supervision of the respective responsible employee.</p>	<p>All the equipment and spare parts are made locally using local company manufacturers. There is no standard in the equipment manufactured and no reliability in the equipment performance.</p>
<p><b>Consistency in Quality</b></p>	<p>Very consistent in producing good quality foam as well as foam concrete. Even at electricity fluctuation, it adjusts the pumping rate to produce same quality of foam every time. It has got electronic control to adjust the pumping rate</p>	<p>Inconsistent in producing good quality foam as well as foam concrete. At electricity fluctuation, the equipment gets damaged or production capacity also fluctuates.</p>
<p><b>Service</b></p>	<p>LithoPore Europe has got partners world-wide in their own respective countries, who can assist in training, commissioning and after-sales service. Also, it has got service engineers available at short notice, who can come to specific countries where there are no partners available. The spare parts and raw materials are readily available throughout the year and can be shipped to any place in the world by DHL or TNT couriers and also by air or sea transport.</p>	<p>No local partners for many of the foamed concrete technology providers. Timely availability of assistance in production, spare parts is limited and/or more money has to be spent for the same.</p>



<b>Research &amp; development</b>	<p>LithoPore Europe has got its own Research and Development Department and can look back on more than 45 years of research experience in the enzymatic field under the leadership of Dr.-Ing. Sebastiano F. Lucà. Lean structures and efficient manufacturing processes enable competitive prices coupled with a high quality of the products. With LithoPore Europe you acquire the products directly from the manufacturer.</p>	<p>No proven research done by other competitors</p>
<b>Cooperation partners</b>	<p>Naturally, every product has to be developed to full application maturity on the market. This is where large-scale technical application in industry is indispensable. LithoPore Europe is therefore constantly working with industrial partners in the various different fields of application. For this, numerous research are being conducted together with industry. Products from LithoPore Europe are tailored and optimized together with industry to meet the individual needs of each user. Few of our renowned partners with whom we work closely are Fixit AG, MASA Group, VICAT Group, etc.</p>	<p>None</p>