

Continuous Foaming Machine Model FM-150



The FM-150 Foaming Machine is designed for 150 to 250 kg per min output. This yields foam blocks in size up to 2080 mm width and 1250 mm's height depending on selected density.

Because of the square Flat-top and straight sides, the waste percentage can be limited to around 5-6 percent, which is much less than what a traditional domed foaming plant produces.

The variation of density in the block is reduced to a minimum. The outer skin of the block is thin and with fewer hard-points, therefore less trimming is required.

The FM-150 is designed for continuous production of flexible Polyurethane foam in rectangular blocks with flat top configuration. The FM-150 is working on a low-pressure system with multiple mixer inlets and re-circulation. The catalyst metering systems has as standard three main streams and auxiliary facilities for additional streams, extra colors, / catalysts. The Closed foaming tunnel has a manually (or Motorized) adjustable fall-plate system, sidewalls, and infinitely variable speed driven conveyor.

The following are general specifications for the standard machine, Please consult with the factory for your specific requirement. Most machines are tailor made to suite the customer need and budget.

Keeping in mind that this machine was intended to operate in areas where skilled technicians are not available.



THE PUMPING SYSTEM

All liquid components streams (except the water and M/C) are equipped with gear pumps with variable frequency drives and re-circulation system.



The water and M/C pumps are piston positive displacement models. The Nucleating Air metered by a precision needle valve situated on the pneumatic control panel, to ensure that the flow measurement is independent of mixing head pressure. Independent color metering streams can be provided as an option.

The FM-150 machine is equipped with a complete control system for the different pumps and other mechanical systems.

The Polyol, T.D.I. and Methylene Chloride Inlet and return connection pipe work to mixing head points are to be provided as on site-supplied piping by the customer.

Flow meters will be provided for T.D.I., water, MCL, and air. For the Water, Silicone, Stannous Octoate and Amine stainless steel tanks will be provided.

MIXING HEAD

The mix head is the high shear pin design. The mixer is powered by a suitable motor with mixer speeds as defined by changing pulleys. The automatic valves on this mix head consists of a manifold mounted three-way ball valve with Teflon seals. The mix head can be flushed by MCL for cleaning. The mix head is sturdily mounted on its own chassis.

The mixer seal chamber is lubricated via polyol stream to prevent transgression of chemicals to the seal.



Variable Speed Drive to the mixing head can be provided as an optional extra. In case of any problems all streams and mixer will automatically stop.



TROUGH AND FALL-PLATE SYSTEM

From the mixer the chemicals pass via a trough to the paper-covered Fall-plate this design enables the plant to produce flat-topped foam blocks. The fall-plate system consists of interconnected plates. Each fall-plate has independent height adjustment. Both the Trough and the fall-plate are height adjustable to accommodate different formulations of foam.

SIDE WALLS

Each section is adjustable to ensure correct alignment of the sidewall. The sidewalls are carried on brackets for easy manual adjustment of foaming width (motorized option is also available).



FOAMING TUNNEL

The tunnel construction forms a complete enclosure around the foam slab with top cover plates and sidewalls. The floor is a horizontal track type conveyor with Aluminum slats.

The tunnel roof covers the full width of the conveyor. Flexible curtains are fitted to allow access to the foam and to ensure ventilation of the tunnel. At the end of the tunnel there is a roller conveyor to transfer the foam block to the block cut-off machine.

For Ventilation of the tunnel 2 axial ventilation's fans are built in the roof. The ducting from these fans must be provided by the customer and fitted on the site. Ventilation above the Block Cut-off machine is recommended. An Infra-Red Heater unit for reduction of curing time for the block surface can be supplied as an option.



The floor is a horizontal track type conveyor. Powering the conveyor will be a gear reduction motor with a variable speed controller with push button control and digital speed indicator.

The sidewalls provided are constructed from laminated plywood or steel plates

PAPER SYSTEM

This is a 3-paper system. The bottom paper feed reel is mounted in front of the foaming platform and is equipped with alignment and



tension adjustment.

The side paper feed reels are mounted at either side of the tunnel mouth and are equipped with tension adjustment. Rewinding of the side papers is carried out at the end of the tunnel around a pair of capstan rollers and the rewinding speed is self-adjustable to synchronize with the foaming speed.

BLOCK CUT-OFF MACHINES





An FM-150 equipped with a well engineered and accurate block cut-off machine like the FINCORP ENGINEERING BC-125 type machine will reduce waste to a minimum and optimize profitability. Cutting width of 160 - 205 cm, cut-of length of 125 - 300 cm with a tolerance +/- 10 mm is available with adjustable cutting speed and acceleration conveyor. Type BC-125 transverse Cut-off Machine will cut blocks to length with a smooth straight surface which thereby eliminates any further trimming.

CURING AREA

A suitable outdoor (or well ventilated indoor) curing area is required. The size of the area should be adequate to fit the production capacity of the machine. A concrete floor is advisable as to prevent damage to the rolling carts (customer supplied). The foam will need to cure for 8 hrs before being sent to the cutting or storage area.

MAINTENANCE

The machine was built to require minimal maintenance. Proper cleaning of all components which come in contact with the foam is essential.

SPARE PARTS

The machine is supplied with a standard set of spare parts suitable for one year operation. Additional spare parts for all the components of the FM machine and can dispatch from our warehouse within one day by courier.

ANCILLARY EQUIPMENT

Fincorp can also supply the required tanks (Polyol, TDI, M/C) for the foaming machine. It has been customary that the customer will provide this if they are available locally. In addition, the use of Calcium carbonate as filler has increased in the last few years, this leads to our developing the necessary equipment to mix and pump the calcium carbonate filled polyol. This usually requires a Pre-Mixer (out Turbo-mixer) and a day tank with separate stream to the mix head. Please consult with us for further details.



General Specifications: (Subject to change)

- Overall length 35 meters
- Overall width 4.5 meters
- Overall height 4.8 meters
- Installed power: 35 kw
- Power supply: 380 VAC 50Hz 3Ph+N
- Air supply required 300 l/hr 6 bars dry oil free air.
- Tank room (with temperature control or climate control)
- Clean water supply ½" line
- Exhaust duct to the outside (provided by the customer)
- Wall extraction fans (provided by the customer)