BFC

BAJRANG FOAM CAST

BROCHURE

BUSINESS

A Group Company of
Vishal Manufacturer
Pvt. Ltd. Rajkot

ABOUT
COMPANY

Bajrang Foam Cast (BFC) is a group company of Vishal Manufacturer Pvt. Ltd. (VMPL). Since the electric power load limit can not be exceeded at VMPL, hence BFC has been made as a separate legal business entity. It is a Vacuum Lost Foam process-based casting manufacturing plant, having installed capacity of 1000 MT per month to produce Grey & Ductile Iron castings.

The plant equipment, machinery & tooling have been imported from CHINA having intensive process integration to avoid any future process or product repercussions in routine production.

The plant has been commissioned in production from April 2025 & certified with the quality certification ISO: 9001:2015.

ABOUT VACUUM LOST
FOAM CASTING PROCESS

It is one of the latest casting processes rarely used in India but quite widely used in abroad countries like China, Korea, USA, Russia etc.It is more or less similar to the Investment Casting process where the EPS patterns are used instead of Wax patterns. In addition to base material, the vacuum is being used at the time of moulding and pouring.

It is mainly categorized in White Part, Yellow Part & Black Part sections. The process sequence is:

01. Die is made based on component drawing and EPS material is used to make patterns (White Part).

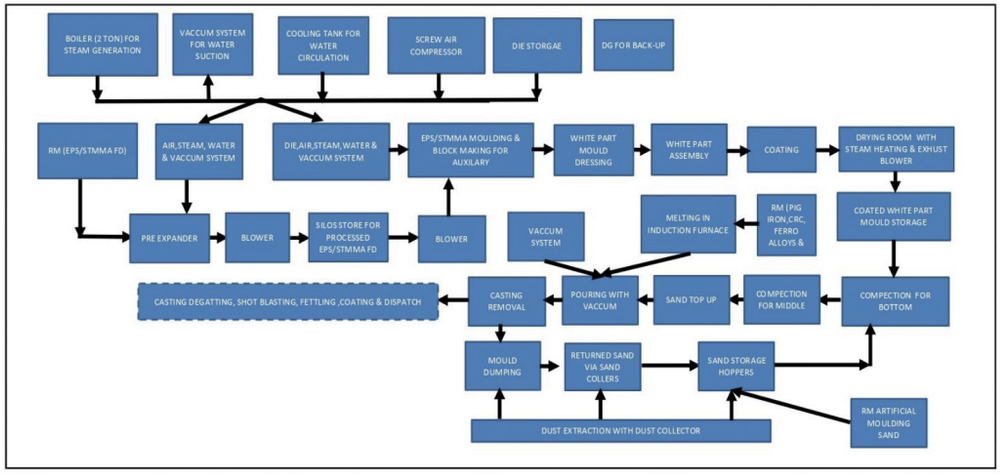
02. These EPS patterns are then assembled with a gating system in the form of a tree and coated with ceramic slurry and dried in a heated room (Yellow Part).

03. Once dried then it is ready for moulding & pouring.

04. The dry artificial synthetic sand is used for making moulds with the help of vacuum.

05. Then pouring is done in vacuum condition and thereafter a knock out process is performed to get the castings.

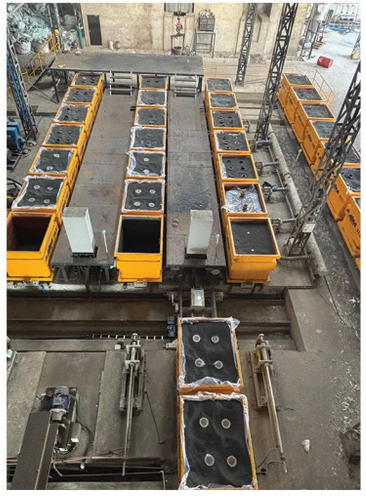
BFL
PROCESS FLOW



This flowchart illustrates the process of manufacturing and casting using EPS/STIMMA FD raw materials. It begins with steam generation via a boiler, water suction through a vacuum system, and water circulation using a cooling tank, supported by a screw air compressor and a DG set for backup. The raw materials are processed in a pre-expander and stored in silos before moving into moulding and block-making systems, aided by air, steam, water, and vacuum. After mould dressing, white parts are assembled, coated, and dried in a steam-heated drying room before storage. Simultaneously, metal raw materials (pig iron, CRC, ferro alloys) are melted in an induction furnace and poured into moulds under vacuum. The moulds undergo compaction (bottom and middle layers) using artificial moulding sand stored in hoppers. After casting removal, mould dumping and sand recycling occur through sand coolers and dust extraction systems. The final steps include degating, shot blasting, fettling, coating, and dispatch. The process integrates auxiliary systems for steam, air, and vacuum to ensure seamless production and environmental control.

SALIENT FEATURES
OF VLFC PROCESS

- Smooth & Uniform Surace Finish.
- Consistent Castingt Weight & Geometry, easy repeatability in machining set ups.
- Low chance of Internal Casting Defect due to Vacuum Pouring. Complicated shapes are feasible.
- Faster and better as compared to No Bake (Furon) process. Eco Friendly process.
- Integrated white part, yellow part & black part imported from China including tooling/dies.
- White part molding machines are connected with a centralized vacuum system to avoid water & steam spillage.
- Use of imported artificial synthetic sand having fully round shape for better permeability to ensure uniform vacuum during pouring.
- Fitted with fire control safety system.
- Single piece @700-800 Kg or bunch weight, can be done with molding box size 1200 x 1500 x 1200 mm.



- Fitted with IBR approved steam boiler & steam piping along with air preheater, water preheater, water scrubber, accumulator & metal dust collector for better energy saving and also as per GPCB norms.
- Fitted with Dust Extraction System as per GPCB norms.
- Use of STMMA – FD raw material having very low carbon emission effect as compared to other EPS material.
- Use of well proven coating material imported from China.
- Centralized Vacuum Pumping System for molding machines & foam bead expander machines.

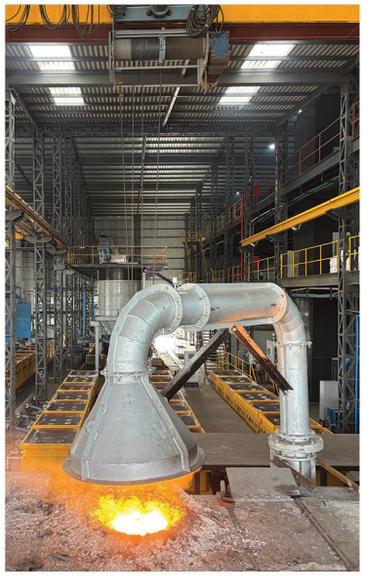
MACHINERY &
TECHNOLOGY HIGHLIGHTS

CENTRAL MOLDING VACUUM SYSTEM

MOLDING MACHINES

BOILER

BOILER



COATING

DRYING ROOM

MACHINERY & TECHNOLOGY HIGHLIGHTS

POURING VACUUM SYSTEM

POURING

SAND COOLER & DES

MOLD DUMPING

BAJRANG FOAM CAST

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