

Next generation filtering technologies for light metal casting

APPLICATIONS

This advanced filtering system is specifically tailored for light metal casting processes including Low-Pressure Casting (LPC), High-Pressure Casting (HPC) and Vertical Vacuum Casting (VVC).

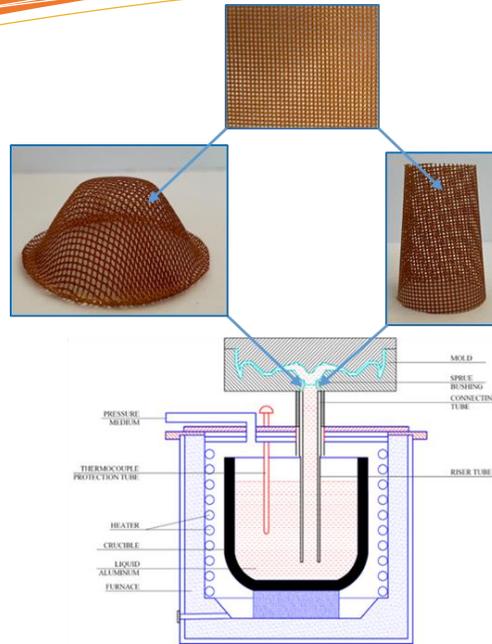
MATERIALS

CHARACTERISTICS

The filter is composed of advanced fiberglass material capable of operating effectively at high temperature levels (i.e. up to 1000°C)

SERVICE AVAILABLE

LMC Technology offers expertise to the automotive aluminum and magnesium components with recommendations for improvement in the production process.



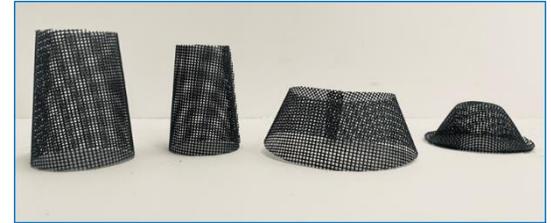
Problem to be solved:

Eliminate the possibility of oxides in the cavity, developed when liquid metal (e.g. aluminum and magnesium alloys) is in contact with the riser tubes and bushings (gating system) during vertical vacuum, low pressure and counter pressure casting processes. Subsequently to the casting procedure, the material from the gating system is desired to be 100% recyclable without changes in the composition of the alloy.

Next generation filtering solution:

The next generation fine mesh filtering system is manufactured using advanced fiberglass material capable of operating effectively at high temperature levels (i.e. up to 1000°C). The fiber-based filtering system is tailored and assembled on the gating system of the mold in vertical vacuum, low pressure or counter pressure casting process. Consequently the advanced filtering system:

- Reduces the oxide content in the liquid metal
- Increases the feeding area in the central area of the casting
- Does not damage the coating within the bushing area
- Allows for easier separation from the liquid metal by eliminating any reaction



Advantages:

- Improves mechanical properties of the final component as a result of an optimized feeding process.
- Decreases the amount of oxides in the casting
- Decreases the amount of porosity in the casting
- Reduces the overall cost of the production processes
- Increases process yield
- Operating temperatures of the filter is up to 1000°C

Applications:

The next generation filtering technology is ideal for vertical vacuum casting, low pressure casting, counter pressure casting, and any variation of these methodologies.

Filtering system characteristics:

The filtering mesh system is assembled in the upper region of the bushing system close to the mold cavity prior to casting. The filter is consequently fixed with the mold divider, which eliminates any movement of the filter. The design makes the filter stable enough while allowing for minimal elastic deformation due to the applied pressure during the mold filling.

The fiber filter is easily removed from the liquid alloy, by melting of the gating system, without any consequent reaction.

Location of the filtering system:

