

HOLLITEX* Shroud

Turbulence control and filtration for large steel castings

Metal Stream Shrouding and Filtration of Steel Castings

Foundries pay insufficient attention to protecting the molten metal stream as it exits from the bottom-pour ladle during the casting process. Oxide films readily form on the surfaces of the metal streams, then through metal turbulence these films are entrained in the metal, and new oxide layers form. These films often exist as bi-films and initiate many defects in the casting, degrading the physical properties. For many years continuous casters of metals have been using processes to protect the metal streams during casting. Foundries are now able to enhance their casting quality using a shrouding concept.

HOLLOTEX Shroud is a new process that can be effectively applied in steel foundries. A shroud is positioned in the mould, the bottom of the shroud protrudes into a filter box located at the base of the mould. When the ladle is in position, the shroud is mechanically lifted so there is a seal between the nozzle and the shroud. The metal flows from the nozzle, through the shroud into the filter box, and then to the runner. As the metal flows it is protected from exposure to air, eliminating the potential for air aspiration.



HOLLOTEX Shroud Filter Box during moulding

HOLLOTEX Shroud

Products Description

The HOLLOTEX Shroud system can be considered in four parts:



The VAPEX* nozzle

The Nozzle is a reverse tapered design and is fitted into the ladle in the conventional way. The Nozzle has a rounded exit which fits into the Shroud. A Gasket is used to ensure the seal between the nozzle and Shroud is air-tight.

The Shroud

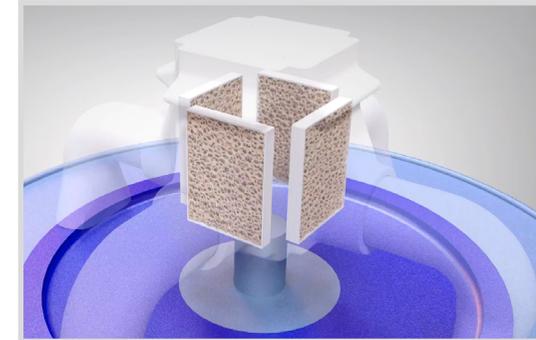
The Shroud is produced in fused silica material. The properties of the fused silica are ideal for this application and have tight and consistent dimensional tolerances. The Shroud is introduced into the mould as a loose fit in a purpose designed downsprue.

Filter Box

The Filter Box is also produced in fused silica material. STELEX* ZR *ULTRA* filters are already integrated into the unit. The Filter Box is moulded so that the shroud when applied will protrude into the filter box.

Shroud Lifting Device

This is a reusable steel mechanism applied to the top of the mould which is used to lift the shroud, so it engages with the nozzle in the bottom-pour ladle and allows metal to flow into the filter box.



HOLLOTEX Shroud Filter Box assembly incorporating STELEX ZR *ULTRA* filters



HOLLOTEX Shroud Lifting Device



HOLLOTEX Shroud vs. conventional casting pouring practice

Application and services

Service

Our engineers and product managers work in partnership with our customers to help them improve productivity, process control, casting quality and the working environment.

Simulation

Solidification simulation is an essential tool for the modern methods engineer. All our experts have access to the latest simulation technology through our alliance with MAGMA® GmbH, the world leader in solidification and Flow Simulation technology for the foundry industry.

Key Benefits

- + No air entrainment
- + Reduced unacceptable X-ray and MPI defects
- + Reduced repair requirements
- + Process repeatability (consistent casting quality)
- + Faster delivery of castings
- + Pouring temperature reduction
- + Improvement in mechanical properties
- + Health and safety through reduced exposure to molten metal during the casting process
- + Environmental improvements



Simulation support



Non-turbulent flow with HOLLOTEX Shroud application



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