

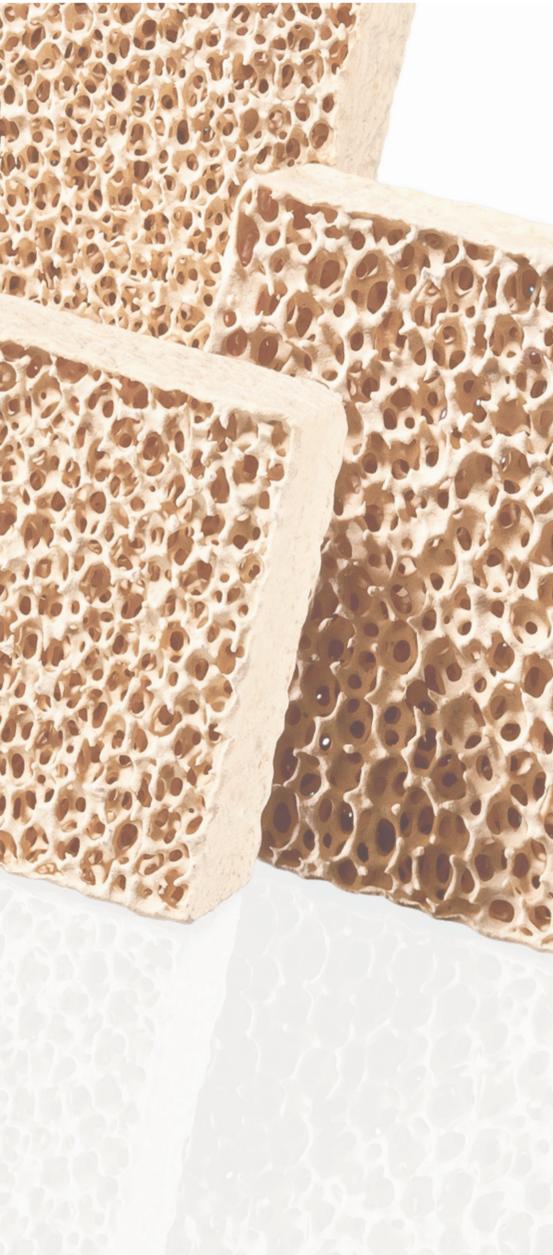


STELEX* ZR AND STELEX ZR *ULTRA* FOR INVESTMENT CASTINGS



ZIRCONIA BASED FILTERS FOR HIGH TEMPERATURE AND SUPERALLOY STEEL APPLICATIONS

- + Cleaner castings
- + Improved surface appearance
- + Reduced scrap
- + Consistent performance



STELEX ZR and STELEX ZR *ULTRA* filters

for the filtration of ferrous alloys

STELEX ZR filters

STELEX ZR ceramic foam filters are based on zirconia; and consequently they are ideally suited to the filtration of molten steel and alloys poured at very high temperature.

The application of STELEX ZR filters in the casting gating system, either in the pouring cup or casting tree, will prevent non-metallic materials reaching the mould cavity. This increases the casting cleanliness generating lower scrap levels, or subsequent repair work. The manufacturing time and costs for the castings can be reduced allowing for a leaner and more reliable supply chain.

STELEX ZR filters facilitate a calm and controlled mould fill. This reduces the formation of “re-oxidation” defects and improves the finish of the cast component.

KEY FILTRATION BENEFITS

- + Improved casting quality
 - Reduced inclusions
 - Improved surface finish
 - Improved properties
- + Improved production costs
 - Reduced casting scrap
 - Shorter lead times
- + Consistent performance

STELEX ZR *ULTRA* filters

STELEX ZR *ULTRA* provides the casting producer with the ability to produce higher quality castings using filtration technology with a greater degree of confidence in the performance.

A combination of improved zirconia ceramic and filter framing technology is the basis for the introduction of Foseco’s new generation of STELEX ZR filters.

STELEX ZR *ULTRA* filters have a lower mass; this facilitates the generation of a more consistently open structure. The frame and ceramic ensure that the filter has very low friability. STELEX ZR *ULTRA* provides all the benefits normally associated with steel filtration together with some important new advantages:

ADDED BENEFITS OF STELEX ZR *ULTRA*

- + Reduced potential for metal flow related issues
 - more consistent capacity and flow rates of metal through the filter
- + Potential for enhanced casting cleanliness
 - the use of finer filters with molten steel and alloys where previously this had not been possible
 - greater filtration efficiency and a higher level of turbulence control
 - reduction in the possibility of metal bypassing the filter
 - very low friability reducing the potential of filter inclusions in the casting
- + Foundries can have greater confidence in the overall performance of steel filtration products than ever before.

STELEX ZR and STELEX ZR *ULTRA* filters

ensure clean castings

Application of STELEX ZR and STELEX ZR *ULTRA* filters

Filtration effectiveness largely depends upon the correct application of STELEX ZR filters. The filters are applied in physically demanding applications and need to be well supported with no possibility of metal bypassing the structure.

In investment casting applications it is very unusual for the filters to become blocked; when considering the size of filter required, the rate at which the mould needs to be filled is normally the major consideration. As a generalisation, cast weights of up to 6kg can be satisfied with a 50mm diameter filter, and then up to 12kg with a 70mm diameter filter.

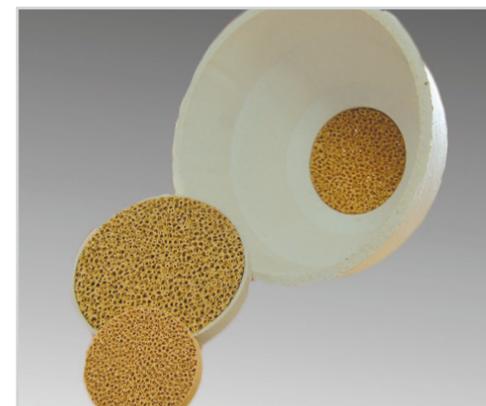
The most common filter application technique is in the pouring cup. Ideally a pouring cup which is specifically designed and supplied to be used with a filter will be employed. This enables a "straight sided" filter to be positioned in the pouring cup at the appropriate time.

STELEX ZR filters can be supplied with ceramic paper gaskets to ensure a good fit of the filter in the pouring cup and eliminate the potential of the filter abrading against the ceramic of the pouring cup. If the pouring cup has no filter support ledge a tapered Stelex ZR needs to be used. Tapered STELEX ZR are available with a ceramic paper gasket so the filter can be pushed in to place in the pouring cup.

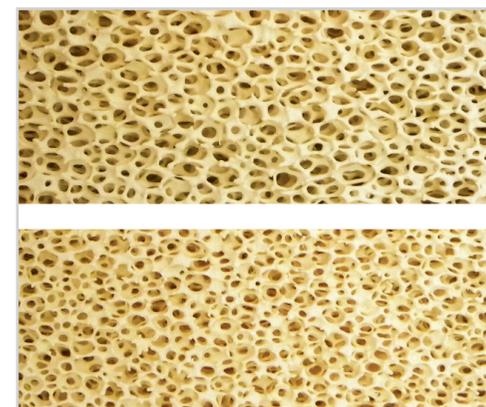
It is important to avoid the use of cement to secure the filters in place as this is a potential source of inclusions. The rate at which the metal passes through the filter is influenced by the "head of metal" above the filter, the filter should be as low in the pouring cup as is practical. Venting of the mould is highly important in air melt applications to ensure rapid and controlled mould fill.

To achieve the least turbulent fill, filters may be invested into the wax tree towards the base of the mould.

Finer porosity STELEX ZR will provide higher levels of turbulence control and inclusion removal where required, but will add a little complexity in application due to the increased resistance to metal flow. It is normal for a foundry to start with 10 pore filters and then introduce finer filters (15 and 20 pore) onto specific casting types where the increased filtration efficiency is required.



Application to investment castings



Available in coarse and fine porosity

Quality is assured

Higher quality and lower costs

Quality management

The Foseco quality management system is certified against DIN ISO 9001, VDA 6.1 and ISO 14001. All relevant product quality features of STELEX filters are controlled and recorded according to these quality standards.

Further information regarding filter sizes, flow rates and filter capacities can be obtained from your local Foseco team.

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.



Impingement testing unit



Visual quality control



Statistical process control



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