

SEDEX* *ULTRA*

The ceramic foam filter for iron castings

VESUVIUS



SEDEX *ULTRA* filters

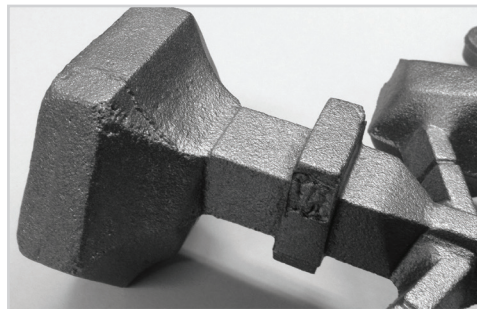
A new generation of ceramic foam filters for iron castings

SEDEX *ULTRA* filters represent the state of the art amongst filters for iron casting. There is a frame around the filter which significantly improves the handling and performance characteristics of the filter.

The formation of the four-sided frame results in a unique distribution of the ceramic within the filter. This generates a more open structure, providing a higher and more uniform flow capacity, enabling the use of smaller and finer filters.

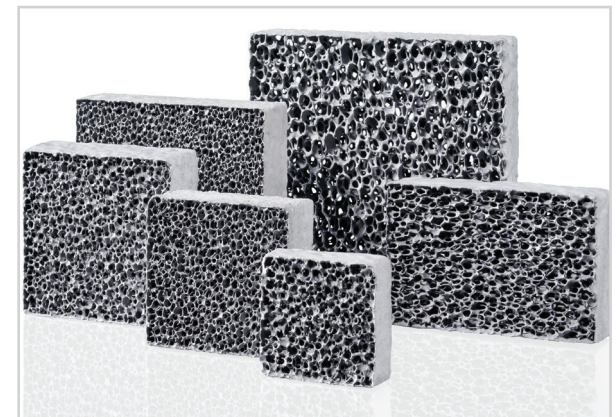
Due to the higher flow capacity, foundrymen can use finer filters optimising the filter performance and process reliability; it is also possible to reduce the size of filters used. This results in returns savings and the optimization of yield. The improved handling of the filters leads to considerable advantages, particularly in highly automated moulding lines with automated filter positioning.

SEDEX *ULTRA* filter placed in the gating system of a DISAMATIC casting



Advantages of SEDEX *ULTRA* filters:

- + Cleaner castings and less scrap
 - Use of finer filters results in higher filter efficiency whilst maintaining the casting pouring time
- + Increased yield
 - The poured weight can be reduced through the use of smaller filters
- + Uniform flow rates
 - Open structure results in very uniform pouring times
- + Improved handling characteristics



A range of SEDEX *ULTRA* filters

SEDEX *ULTRA* filters

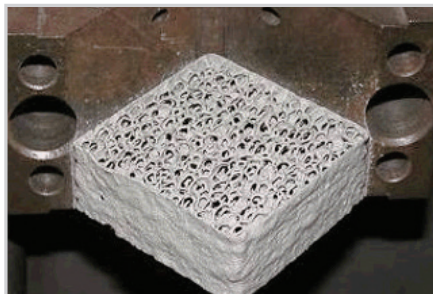
Cleaner castings and increased yield

Calculation of gating systems

The calculation of gating systems for SEDEX *ULTRA* filters is the same as for standard SEDEX filters. The calculation can be found in the SEDEX brochure.

Based on the higher flow rate capacity of the SEDEX *ULTRA* product, depending upon application, the filter area may be reduced by up to 20% and a finer filter can be employed. The following capacity guidelines can be used:

Iron grade	Filter capacity kg/cm ²
Grey and malleable iron	2,0-4,8
Ductile and compacted graphite iron	1,0-2,4
Alloyed and in-mould treated ductile iron	0,5-1,2



SEDEX *ULTRA* filter sitting in the coresetter print of a DISA

Application example of SEDEX *ULTRA*

The example of a flywheel casting (shown right) shows how the use of SEDEX *ULTRA* filters improve yield by reducing filter area.

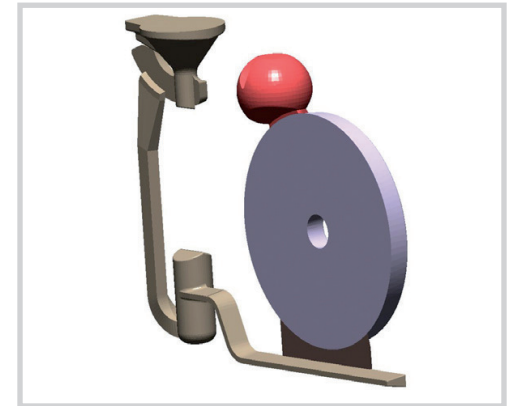
The top picture shows the initial conventional gating system without filter, with a pouring time of 15.5 s, at a poured weight of 25 kg.

With the use of a filter, in the first scenario, a SEDEX 50x50x15/20ppi filter resulted in a significant reduction in scrap. The poured weight was reduced to 23.7 kg with a shorter pouring time of 10.5 s.

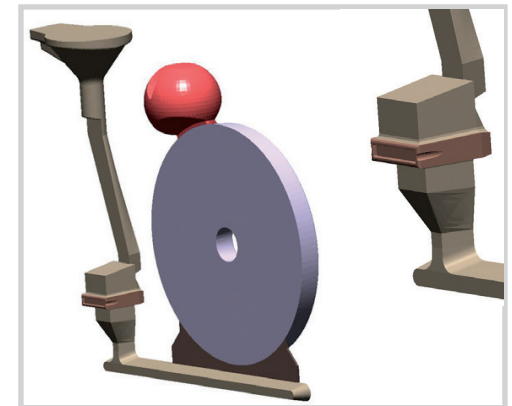
With further development and optimisation, the above filters were replaced by a SEDEX *ULTRA* 40x40x15/20 ppi. This allowed a further reduction of poured weight to 23.5 kg. This equates to a metal saving of 0.2 kg per casting compared with the standard filtered gating system. Pouring time was again maintained at 10.5 s.

The last modification alone facilitated a return saving of 10,000 kg per annum. Together with the pouring time reduction and returns saving from the initial modification, this resulted in a significant commercial improvement for the foundry.

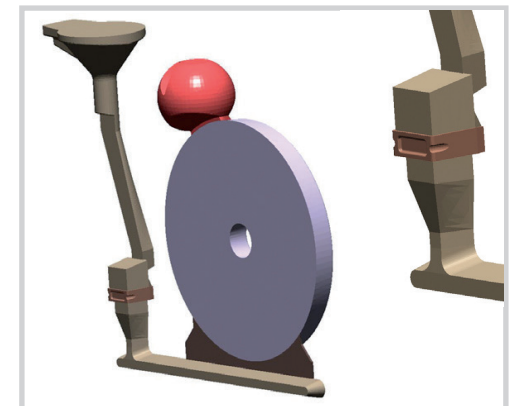
Initial gating system



1st Optimisation -
Conventional SEDEX
Application 50x50x15/20 ppi



2nd Optimisation
SEDEX *ULTRA* 20
40x40x15/20 ppi

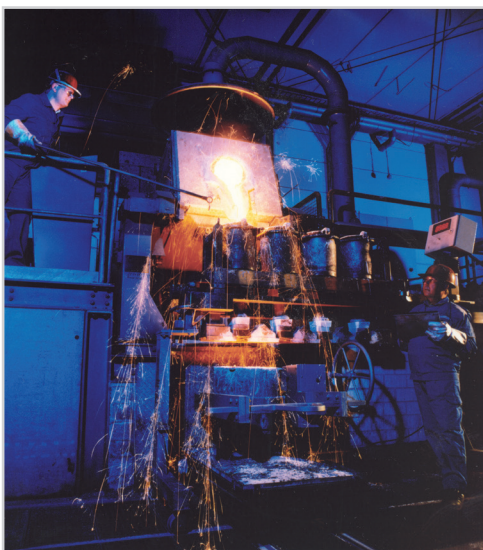


Quality Assured

Inspection of product characteristics

Quality management

The Foseco quality management system is certified against DIN ISO 9001 and ISO 14001. All relevant product quality features of SEDEX *ULTRA* filters are controlled and recorded according to these quality standards.



Impingement testing unit

Important product attributes monitored in this way include:

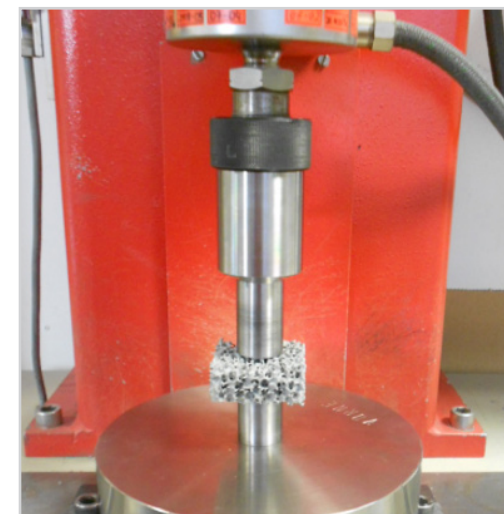
- + Filter dimensions
- + Bulk density
- + Cold compression strength
- + Porosity
- + Thermal shock resistance (impingement test)

Next to filtration effectiveness, thermal shock and erosion resistance to the liquid iron are the most important product attributes. These properties are evaluated regularly using liquid cast iron. A special test procedure, the impingement test, has been specifically developed for this purpose. Extensive use of this test has enabled Foseco to continually improve the quality and consistency of the SEDEX iron filter.

It ensures the filters being tested are under the most severe conditions possible, in terms of ferrostatic pressure and filter support. This test represents the most relevant quality measure for our customers.



Filter measurement



Room temperature strength measurement



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Foseco International Limited
Drayton Manor Business Park,
Tamworth, Staffordshire,
England B78 3TL
Phone: +44 (0)1827 262021
Fax: +44 (0)1827 283725
www.foseco.com
Please contact your local Foseco team