CASE STUDY

PLANET CARRIER
IRON FOUNDRY
FILTRATION

FOSECO

Lightweight runners and printed filters improve yield and surface finish in steel castings

INNOVATION & TECHNOLOGY

THE CHALLENGE

Due to rising energy and labour costs, foundries are more than ever required to optimise their manufacturing processes. Cost reductions in terms of scrap, returns, disposal and fettling and improvements in labour productivity are of fundamental importance here.

FOUNDRY:

Eickhoff Gießerei GmbH is part of the Eickhoff Group, a globally active family business that has been based in Bochum, Germany, since its foundation in 1864. In addition to the foundry, the Eickhoff Group's portfolio includes mining machines as well as industrial and wind power gearboxes.

PARAMETERS

Metal grade: GS 17 CrNiMo 6 V
Casting weight: 230 kg
Pouring temperature: 1610 °C
Pouring weight (Initial system): 317 kg
Pouring weight (Revised system): 309 kg
Pouring time (Initial system): 21 s
Pouring time (Revised system): 24 s
Yield (Initial system): 72,5 %
Yield (Revised system): 74,4 %
Moulding process: Sand casting, furan resin-bonded moulding material

FOSECO PRODUCTS

1x STELEX* Optiflow3D Ø100x25 filter
1x 3D printed filter holder Ø100x25
1 ½ KALMINEX* X7 & breaker core BK 7/3
HOLLOTEX* EG Runner ST Ø50
TENO* Coating ZBBPX

VESUVIUS

go to next page

OUR SOLUTION

Novel, lightweight HOLLOTEX EG Runner ST tubes replaced the traditional ceramic holloware system. The parts are lightweight and easy to assemble, improving both productivity and the working environment.
STELEX Optiflow 3D filters offer both filtration efficiency and consistent flow rates. The filters have a higher capacity than foam alternatives and facilitiate the filtering of larger castings. Filter structure and porosity can be customised to suit the application.

Easy assembling by push-fit connection

KEY BENEFITS

- Avoidance of ceramic holloware fragments in the sand system
- Lower sand disposal costs and reduced sand system maintenance costs
- Reduction of the casting weight by 8 kg
- Lower scrap and rework costs due to a reduction in process-related inclusions
- Flexible filter design

> LET´S LEARN MORE

THINK BEYOND. SHAPE THE FUTURE.

FOSECO

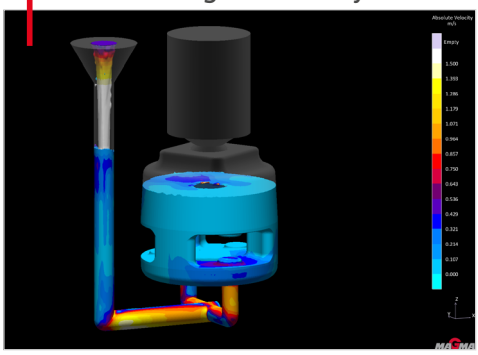
VESUVIUS
A VESUVIUS GROUP COMPANY

THE OUTCOME

By using STELEX Optiflow3D filters, printed filter holders and HOLLOTEX EG Runner ST tubes, the casting weight was reduced and the surface quality improved. The specific filter capacity of the STELEX Optiflow3D filter is in this application 3.9 kg/cm^2.

STELEX Optiflow 3D printed filters have a consistent structure (Voronoi)

Mould filling - initial system



Mould filling - revised system