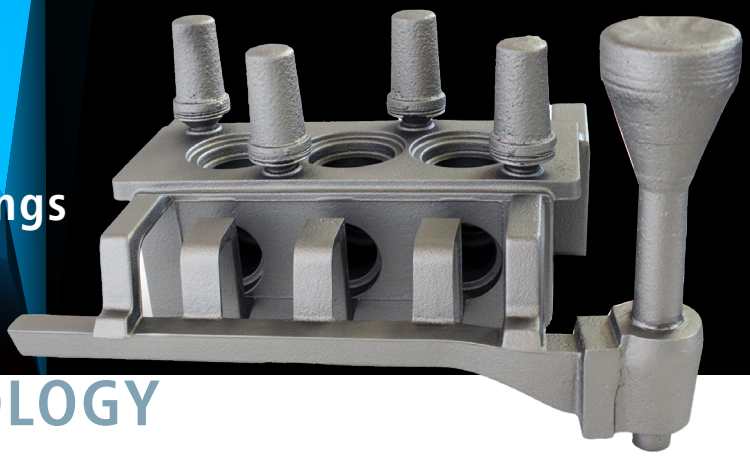
CASE STUDY

MANIFOLD CASTING

IRON FOUNDRY
COATINGS AND FEEDING SYSTEMS

FOSECO

Realising energy and labour savings and benefitting the environment through the application of SEMCO CC coatings and FEEDEX FEF VAK feeders



INNOVATION & TECHNOLOGY

THE CHALLENGE

The customer wanted to reduce moisture-related defects and optimise drying times to save energy. The aim was to prevent the use of insufficiently dried cores in production and to avoid rework or scrap. Tighter environmental legislation has significantly increased the disposal costs for used foundry sand, especially with regard to contaminants such as fluoride which is an ingredient of many exothermic sleeves. The customer was keen to avoid the cost burden without compromising on feed performance.

PARAMETER

Alloy: EN-GJS-600-3
Coremaking: Cold box
Casting weight: 50 kg
Core package weight: 8.5 kg
Casting temp.: 1,400-1,420 °C

FOUNDRY:

Eisengiesserei Baumgarte GmbH, Germany produces a wide range of castings for a variety of industries, from general mechanical engineering, plant engineering and railway engineering to vehicle construction, pump technology and special drive technology.

FOSECO PRODUCTS

4 x FEEDEX* FEF VAK 191/61M sleeves
1 x SEDEX* 50x75x22/10ppi filter
SEMCO* CC coating

The SEMCO CC colour change indicator can be integrated in almost every Foseco waterbased coating. Excluded are pure graphite or coke dust coatings. The colour change works on the following systems:
- Furane resin
- Phenolic resin
- Coldbox
- Shell process
- Lost Foam

VESUVIUS

go to next page

OUR SOLUTION

The first task was to choose the appropriate coating to achieved the desired surface finish properties for the castings concerned. Once selected, a colour change indicator was added to visualise and optimise the drying process.

Novel FEEDEX FEF VAK sleeves were chosen to optmise casting yield. These sleeves have been specially developed to eliminate harmful emissions and hazardous waste, being both fluoride emission free and lower in VOC than market alternatives. At the same time, they are proven to deliver the highest thermal and feed performance of all high density exothermic feeders on the market. In addition, the use of the new FEEDEX FEF formulation in combination with VAK technology has been selected.

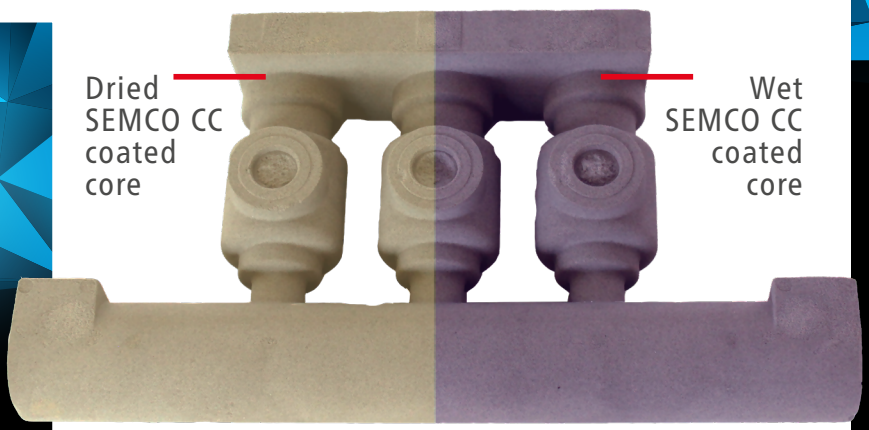
THE OUTCOME

By using the SEMCO CC with colour indicator, the customer was able to optimise the drying process. The result: Reduced energy costs & drying times and increased productivity. The visualisation prevents the use of insufficiently dried cores. These improvements resulted in energy cost savings of 20 % per year.

By using the FEEDEX FEF formulation, the water-soluble fluorine content in the used sand can be significantly reduced. In combination with our VAK spot feed technology, the time and work required for fettling and grinding the castings can also be considerably reduced.

KEY BENEFITS

- **Visualisation of the drying time**
- **Determination of the optimal oven drying time and temperature**
- **Reduced energy costs and lower environmental impact**
- **Reversible colour change at high humidities**
- **Savings of 20 % energy costs per year**
- **Lower used sand disposal costs**
- **Minimum contact area**
- **Reduction of fettling costs**



Pattern plate with FEEDEX FEF VAK sleeves

> LET´S LEARN MORE

THINK BEYOND. SHAPE THE FUTURE.

FOSECO

VESUVIUS
A VESUVIUS GROUP COMPANY