



Grey Iron - Ductile Iron - Vermicular Iron - ADI Cast Iron

 **FERROMATRIX**

Automated High Precision Iron Foundry

## Ferromatrix

is a high precision cast iron foundry for large and medium size castings moulded on automatised furan sand moulding lines. A unique MES-system controls the production from order entry and planning over core making and melting to fettling and shipping.

### 3 furan sand moulding lines

#### Cast iron grades

- Grey iron (EN 1561): EN-GJL-200, -250, -300, -350
- Ductile iron (EN 1563): EN-GJS-400-18 LT, -400-18, -500-7, -600-3, -700-2, -800-2
- Vermicular iron: EN-GJV-300-5
- ADI cast iron (EN 1564): EN-GJS-1000-5, EN-GJS-1200-2, EN-GJS-1400-1
- Special alloyed cast iron (SiMo ...)

### production capacity 25.000 Ton

#### Weights & sizes

- 2 Ton Moulding line - Flasks: min 1000 x 1100 mm - max 2000 x 2500 mm (5 sizes)  
Heights: 200 - 1200 mm
- 5 Ton Moulding line - Flasks: min 2000 x 2000 mm - max 3000 x 4000 mm (4 sizes)  
Heights: 200 - 1200 mm



Line 2: pouring line

## Application areas

### Gearboxes for general industrial applications

half gearbox, integrated gearbox, monobloc...

### Gearboxes for wind energy

housing, cover, torque arm, planet carrier...

### Turbochargers

gas inlet, gas outlet, volute casing, bearing casing...

### Compressors

rotor housing, gear casing, rotor, cooler...



## medium & large sized castings

### Diesel- & gas engines

cylinder head, console, pump cover, fly wheel housing...

### Pumps

submersible, mixed flow and propeller pumps

### Textile machinery

frame, gear box, cam...

### Machinery

applications for food, plastic, semi-conductor,  
medical, printing, packaging industry

## Total on-line shop floor control

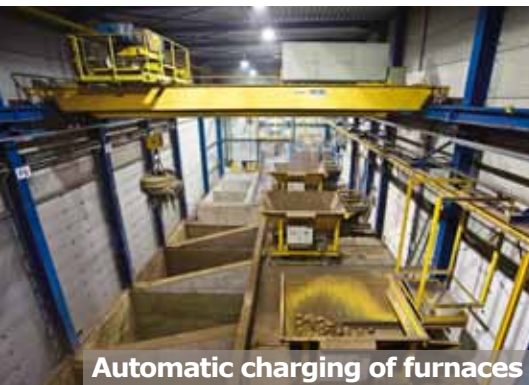
The production is entirely controlled by computer, with on-line shop floor control and an integrated quality supervision system (ISO 9001: 2008 certified). To guarantee the flexibility and high level of quality, Ferromatrix has all foundry activities in house: engineering & design, pattern division, core shooting, moulding lines, melting hall, fettling & finishing.

## electric melting furnaces

5x electric induction melting furnaces with automated charging  
(2x 1,5T, 2x 6T, 1x 12 T)  
automated inoculation and mg-treatment (wire)

## core making

4x cold box core shooting machine  
(20L, 60L, 120L & 200L)  
2x furan sand mixers



Automatic charging of furnaces



Core shooting



Crane brings flasks on patterns



Roll over extracts pattern



Core assembly



Fast loop - 2 coating manipulators



Automatic closure of the moulds

## 2 T furan sand moulding line

## FMS Foundry

Internal logistics are automated by roller conveyors and cranes. There are automatic manipulators at each work station:

- sand mixers with several recipes
- roll over system extracts the pattern from the mould
- 2 coating manipulators
- automatic core supply by a stacker crane
- automated closing of the mould
- storage of moulds in vertical stacker (before/after pouring)
- 2 manipulators in the shake out station



Core assembly



Coating of the mould



Sand filling (10 T/ hour)



Core assembly hall

## 5 T furan sand moulding line



Line 2: Vertical stacker crane (12T) for moulds

## Fettling & Finishing

Shop floor control by different finishing steps of the castings in the workstations along several stacker cranes:

- Shotblasting (automatic / by hand)
- Grinding
- Heat treatment
- Quality control
- Painting



Identification of casting by manipulator



Heat treatment



Shotblasting & Automated logistics for finishing



FMS machining



Painting



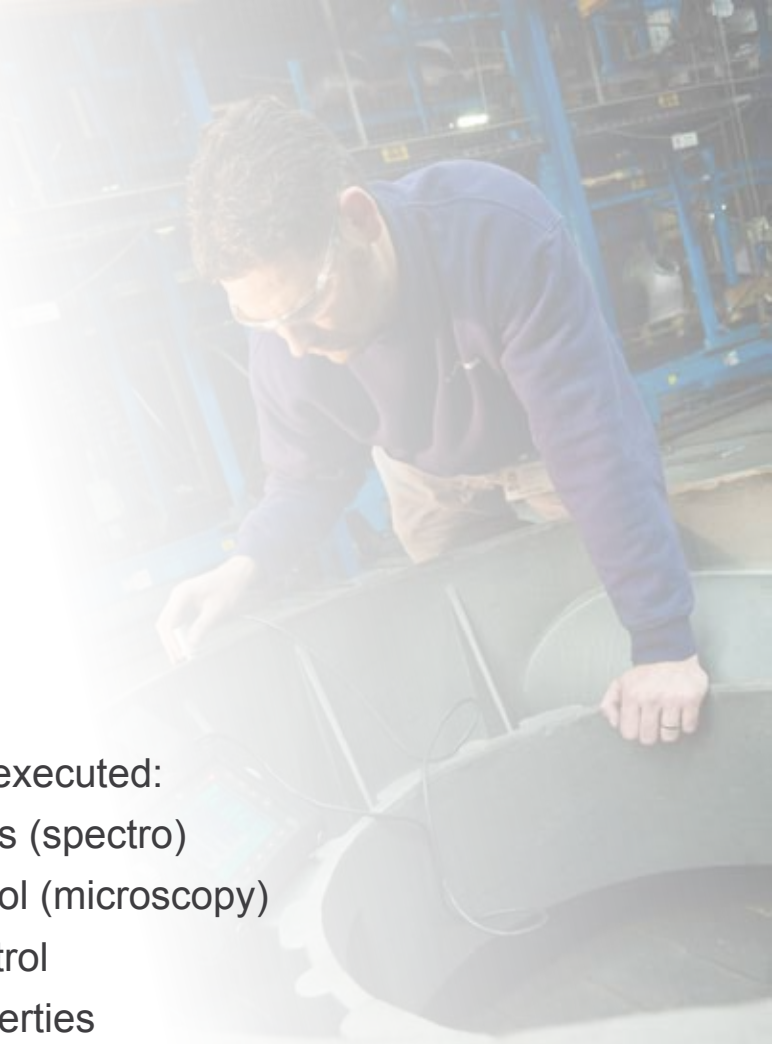
Quality control

**Total subcontracting: machining & assembly**

## Quality Control

Ferromatrix meets the highest quality standards as requested by our high end customers.

Thanks to the automated production process, we have a 100% traceability of all your pieces in production.

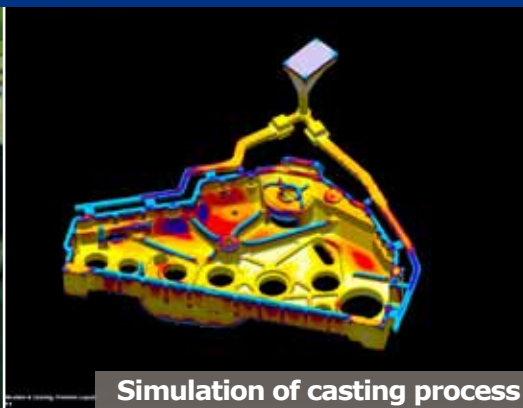


Following tests can be executed:

- chemical analysis (spectro)
- metallurgic control (microscopy)
- dimensional control
- mechanical properties
- ultra sonic & magnetic controls



Tensile strength control



Simulation of casting process



Modeling of iron castings

## Engineering

The casting process (pouring / moulding) is simulated & developed by a multidisciplinary team of engineers using the professional tools such as CAD Pro-Engineer ® & Magmasoft®.

# vandewielegroup.com



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## Van De Wiele Group

Founded in 1936, Ferromatrix stands today for a high-tech iron foundry for large & medium sized castings. The company acts as subcontractor of castings since 1980 and is an independent member of the Van De Wiele Group.

Van De Wiele is the world's leading manufacturer of carpet and velvet weaving machines.



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