



[www.frese.eu/foundry](http://www.frese.eu/foundry)

# Frese Metal & Steel Foundry

Frese Metal- & Stålstøberi A/S

*Customised component solutions for the toughest environments*





“Everything can be cast but not all foundries can cast everything”

# Who are we?

Frese Metal are experts in the complete process of developing prototypes into cost efficient castings in a range of alloys

With over 7 decades of knowledge and experience in the field of specialist sand castings, Frese provides customers with customised solutions for the most demanding of applications in a range of alloys including bronze, nickel-aluminium bronze, stainless steel and duplex steel.

By using innovative manufacturing processes and knowledge, Frese work closely with customers to provide the best possible solution both technically and commercially.

Manufacturing excellence is of extreme importance to Frese, and continuous investment is made to ensure solutions are delivered on-time and to specification in the most environmentally-friendly manner.

Supplying component solutions to a number of market segments, including the marine and offshore industries, Frese offer a range of services including pattern design and production, MAGMA-soft® simulation, 3D mould printing, machining, certified quality inspection and supply chain management.

Work closely with customers to provide the best solution using the latest technology

Over 70 years of knowledge and experience in the field of specialist sand castings

Environmentally approved to operate 24/7/365



## Production facilities and equipment

### **Coldbox core shooting**

1000 x 1500 x 600 mm

### **No bake core (Furan)**

1500 x 1500 x 1500 mm

### **Floor moulding No bake (Furan)**

2000 x 2000 x 2000 mm

### **Fast-loop moulding No bake (Furan)**

1100 x 1200 x 400 + 400 mm

### **Melting in induction furnaces**

3 x 500 kg + 3 x 1000 kg

### **Vacuum impregnation**

Ultraseal Pc504 ø1250 x 1400 mm

### **Heat treatment**

2 x 1200 x 1000 x 1000 mm  
1100 °C. Water and air cooling

Focused on improving  
our processes to reduce  
the level of impact on  
the environment





# Environmental initiatives

## Green castings

Focusing on improving the product lifespan, reducing the environmental impact and improving product efficiency



## Energy consumption

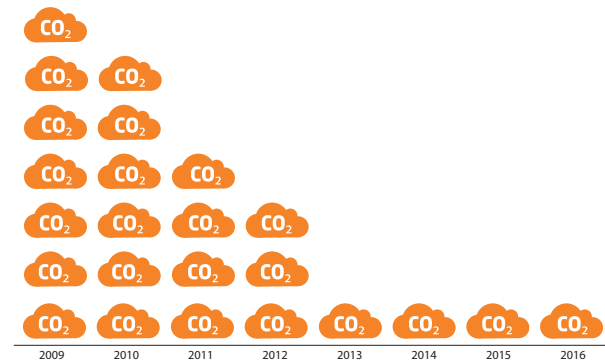
Reducing energy consumption in line with the international standards

## ECO Metal

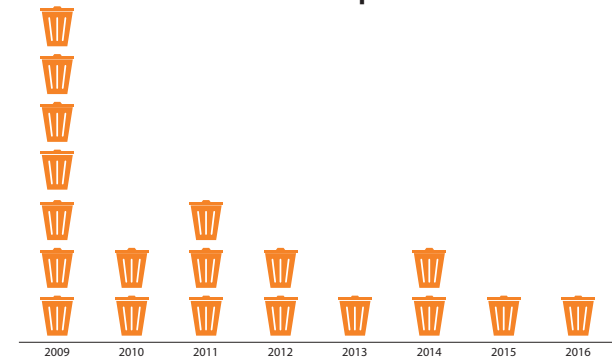
Established set of criteria for reducing the environmental impact in our development process



CO2 Index



Waste to dump Index





BUREAU  
VERITAS

DNV·GL

## Working with Frese

# Customer benefits

### KNOWLEDGE

“We offer advice and produce castings in materials suitable for the toughest applications”

- Our extensive knowledge of casting processes and specialist materials allows us to advise our customers of the best possible solution for their needs during design development and review
- Through simulation, we detect in advance any critical areas before problems can occur
- We can supply castings in Nickel-Aluminium bronze, Gunmetal, Stainless steel and Duplex to suit some of the toughest applications

### QUALITY

“We are fully approved by the relevant authorities to guarantee the best possible solution for our customers”

- Approved by DET NORSKE VERITAS-GL (DNV-GL) and Bureau Veritas (BV)
- Manufacturer of materials for use in the construction or repair of ships, other marine structures and associated machinery which are classed or certified
- Full material traceability and supporting documentation

## INNOVATION

“We provide our customers with innovative solutions that are **designed and produced to the exact geometries** using the latest thinking and techniques”

- Using start-of-the-art techniques such as 3D printing of moulds and cores allows us to significantly reduce the timeframe from idea to product
- The latest techniques allow complete freedom of design in a cost effective way
- Our extensive experience and commitment to continuous development allows us to approach projects in an innovative way to find the best possible solution

## MANUFACTURING EXCELLENCE

“Our manufacturing history and expertise allows us to produce casting solutions in an efficient and cost effective way”

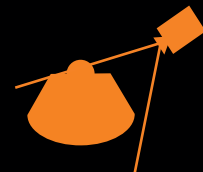
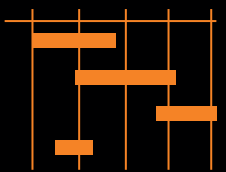
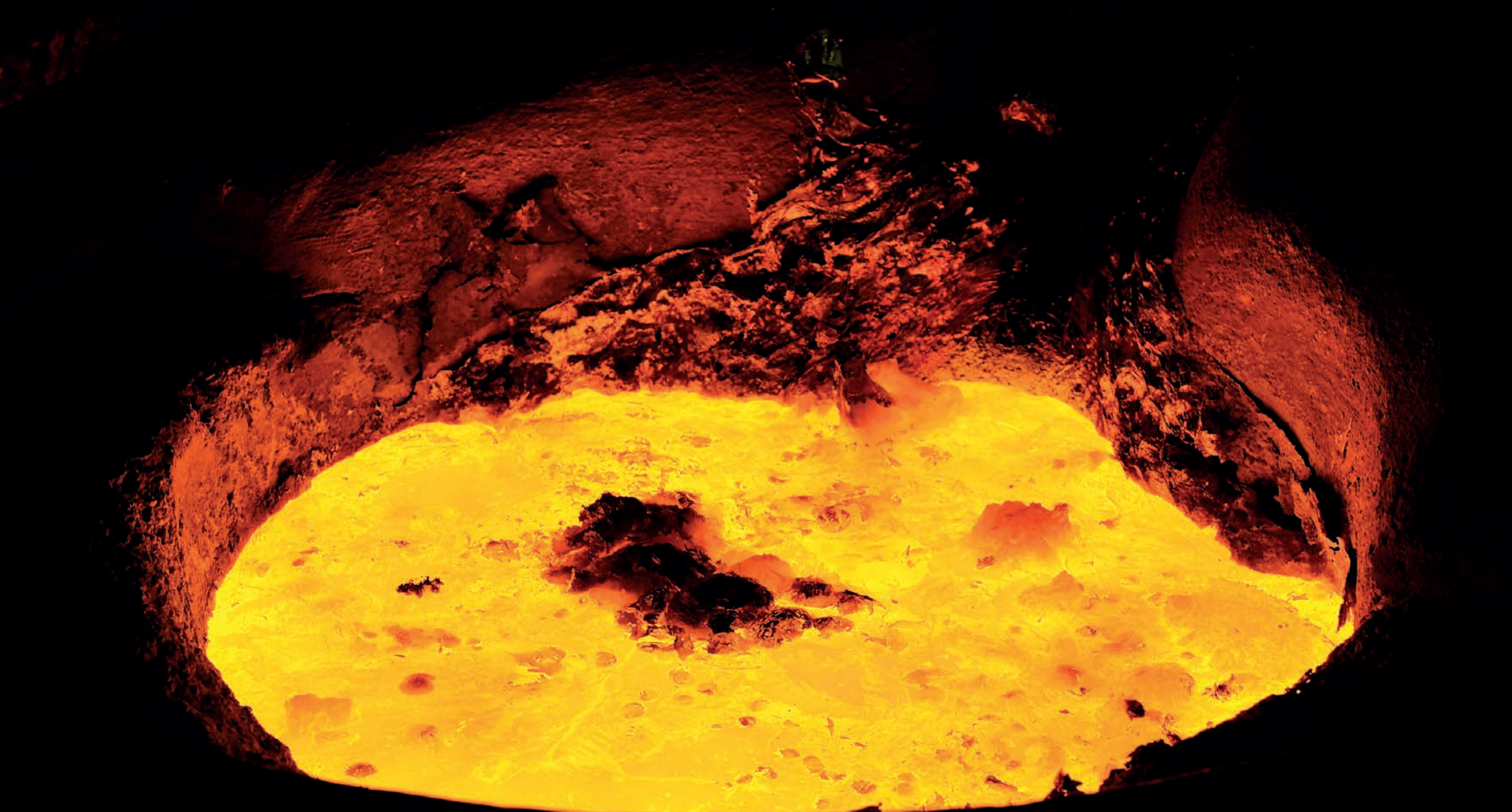
- Producing thin walled sand castings in a range of corrosion resistant materials
- Handling core intensive and complex geometries
- Constant monitoring and improvements during all stages of the casting process to ensure projects are delivered on time and to budget
- Manufacturing equipment that is suitable for both single batch and multi batch production

## CUSTOMER FOCUS

“Work closely with our customers offering an **honest and trustworthy approach** to projects to satisfy their needs”

- Partnership approach to customer projects and supply chain management
- Customised solutions for customer requirements
- Provide a one-stop-shop for all sand castings needs
- Continuous cooperation with customers to help find the best solutions to their challenges







# How we do it?

To ensure the highest levels of service and quality, we use the latest technology throughout our processes

## **Computer aided planning**

Handle forecasts using Axapta and Robex in the planning process

## **3D modelling using SpaceCalim software**

We can work with any CAD format

## **Pre-engineering with MAGMA-soft®**

Prediction of critical areas or displacements in complex castings

## **Automatic moulding no-bake process**

Fast loop secures that production is running without stoppages for pattern changes

## **Induction furnaces**

An economical, fast and reliable way to melt alloyed materials with the highest metallurgical quality

## **Computer controlled spectrometric material control**

Metal alloy is critical to the properties of castings therefore we trace every charge

## **Process critical parameter logging**

Sand quality and other process parameters are critical for the best sand castings therefore we log and examine the critical data

## **GOM 3D scanning of geometry**

Geometric Optical Measurement of prototypes and patterns

## **3D printing**

Sand moulds and cores for prototypes and for complex geometries in continuous production

## **Ultrasonic scanning**

On site ultrasound equipment assist in detection of wall thickness and casting errors

# Partnership approach to customer projects



1

## Design, development and review



- In depth knowledge and experience of process costs to estimate at an early stage
- From experience, offering advice as to what is possible for the best solution
- Complete trust and confidentiality

2



## Simulation

- Prediction of critical areas in complex castings
- Predictions of displacements

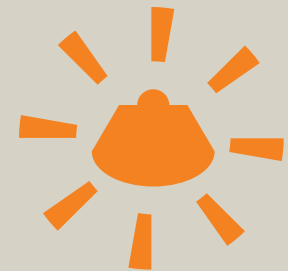
3

## Pattern design



- “One-stop shop” for all the necessary components needed to begin production of high quality castings

4



## Prototypes

- Rapid prototyping
- Easy access to change and optimization of prototypes
- Freedom of design – no need of draft
- 3D sandprinting - mould and core



## 6 Machining

- Easy handling of assembly ready items from one source supplier



## 7

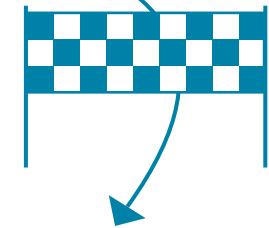
### Test, approval, inspection

- Full test and documentation of sound castings
- Documentation of customer specified quality tasks
- Third party inspection for naval, oil and gas applications



## 5 Sand castings

- Production flexibility in a range of alloys
- Single or series production



Finished product





# Product and industry examples

Extensive experience manufacturing in high corrosion materials therefore our castings are suited for the toughest applications in a variety of industries



## Food processing

Grinder housings and high viscosity pump housings

## Oil and gas

LNG pumps and valves , pipe and hose connectors, firefighting equipment and cargo pumps

## Maritime

Valves, pumps and components for ballast water, heating and cooling

## Leisure boats

Gearboxes, propulsion and shaft brackets

## Chemical

Corrosion resistant pumps and impellers

## Power generation

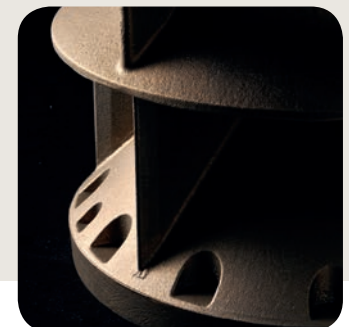
District heating pumps and impellers

## Fish farming

Feed pumps and discharge pumps

## Desalination

Heat exchanger covers, fresh water pumps and brine pumps





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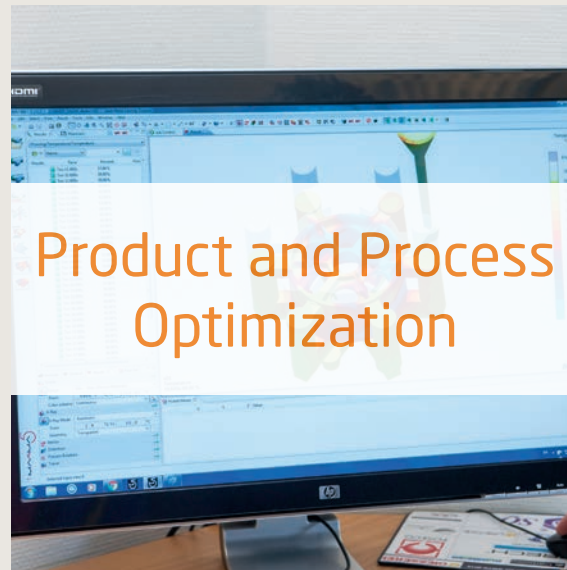




# Can we help?



Casting  
Requirements



Product and Process  
Optimization



Commercial  
Dialogue



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