

BIRN

# Energy and cost savings with **ANTRAPEX®** core sand additive at **BIRN**



**BACKGROUND**  
Customers needs



**CONCEPT**  
Calderys solution



**SUMMARY**  
Recap of  
the solution



**RESULTS**  
Concrete  
benefits



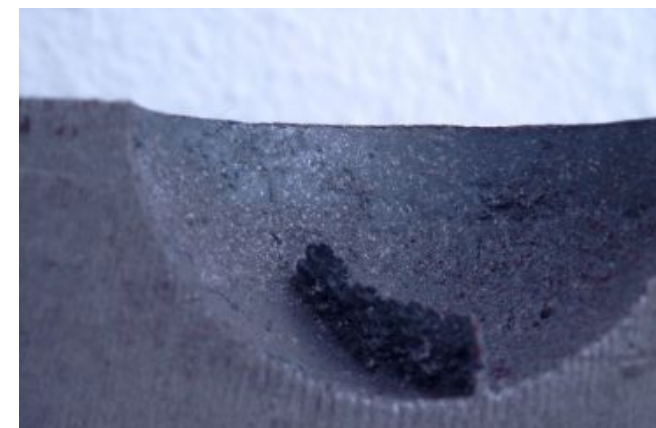
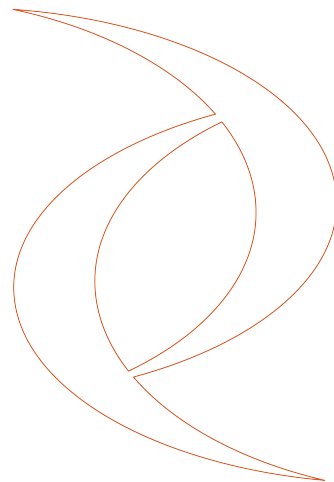
### The background situation

BIRN is one of Northern Europe's largest foundries with roots dating back to 1896. The company offers all services required to deliver custom-built casting projects – from the initial concept to the final product. The company had been using different additives from different suppliers to prevent fins before it was informed by their supplier that some of the additives used up until now were no longer available.



### The request from the customers

BIRN was looking for a replacement of the product they had been using, with the same performance and without the need of using coatings. The foundry is operating at high volumes, so the availability of the product was crucial.





### Analysis of the customer request

Calderys analyzed the requirements to make sure that the proposed product would meet the surface requirements of the specific cast items, without affecting the strength of the cores. The product also needed to be used without coating.

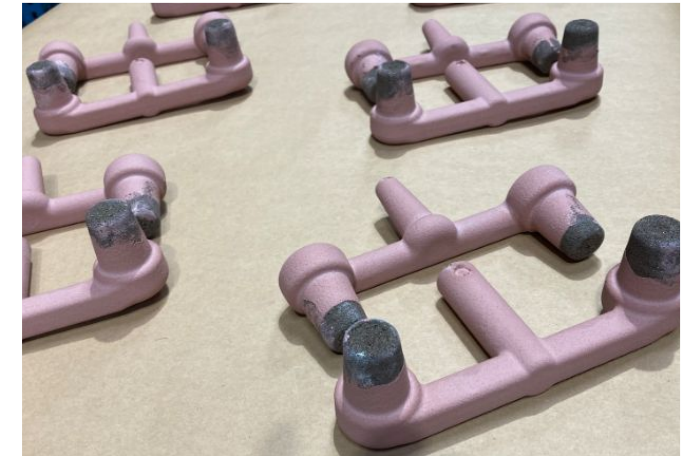
### Description of the solution developed by Calderys

The product range **ANTRAPEX®** is a range of additives with differences in composition (organic & inorganic) and performance.

**ANTRAPEX® P** has an additional advantage - the possibility to achieve good surface results without coatings.

It has several benefits:

- Easy handling
- Energy savings (no need for drying)
- Faster production of cores
- Cost savings using **ANTRAPEX®** without a coating





### Benefits brought by the solution

For the application with coating, an addition of **2 - 2.5%** of **ANTRAPEX®** is efficient to prevent finns. Without coating the addition level needs to be at about **4%**. Although the addition level was higher, the risk of additional water in the core remained low because the customer was using microwave for drying.

The customer was able to achieve the needed strength without increasing the binder level. **ANTRAPEX® P** also brought the following benefits:

- No more casting defects
- Stable supply chain and product quality
- Lower energy demand and reduced carbon footprint with the removal of the coating and including the drying procedure
- **Cost savings** as a result of avoiding the coating, corresponding lower equipment and process costs







### Product presentation

**ANTRAPEX®** is a range of additives that reduces casting defects and veining, and provides a stable supply chain and a long bench life. It is non-porous and generally coarse-grained, minimizing losses of core strength. The organic components of ANTRAPEX® improve the casting surface finish during combustion, guaranteeing a consistent process and quality of core produced. It is not classified as a hazardous substance or dangerous goods. After core breakdown, ANTRAPEX® in the molding sand acts as a carbonaceous material.

The featured product of this range, **ANTRAPEX® P** combines technical performance as well as economical and environmental benefits.

### Services - Expertise

Calderys' product development is the result of a joint effort between the technical foundry experts and the customers. Calderys supports foundries with a range of services:

- Detailed analysis of production process and process conditions
- Product formulation
- Monitoring of the life cycle of the product
- Technical support and sand analysis through the Calderys digital solutions



# Thank you for your attention

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