

Productos no férricos de Mungia S.L. **COFUNDI**

Aluminium Casting



Quality Procedures

November 2009

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Quality Management System

- COFUNDI works with a Quality Politic that controls every activity in the company
- **“QUALITY IS NOT CHECKED, IT’S PRODUCED”**
- ISO 9001:2000 certified by Lloyds Register since 2003
- In 2010 update to ISO 9001:2008



Our own ERP: FactoryWin

- All the production and management activities are integrated and are managed from our ERP, Factorywin.
- All our people can access to the same application, seeing the information of their interest
- All the information (drawings, purchase orders, claims, parameters,...) can be accessed in the moment and place where is required
- Management of more than 1000 castings, and 100 customer per year.

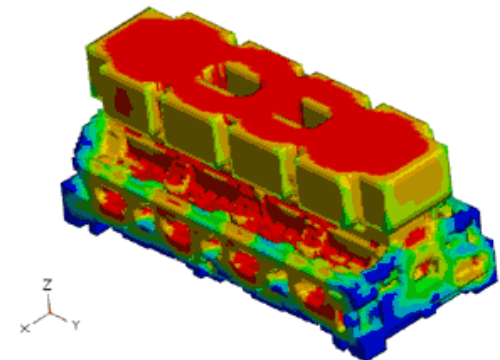
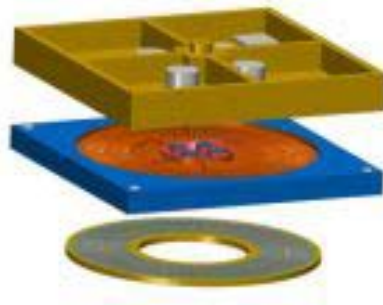


New castings creation

- COFUNDI study all the information proceeding our customers (drawings, specifications, notes,...) to get all the requirement of the product and process
- Our **Technical Office** work with 3D design and melting process simulation software
- Once the toolings and models are made, we sample and **homologate** product and processes
- After customer homologation, product falls under **Quality Department** responsibility

Technical Office

- It's responsible for the creation of new products, and also the maintenance of production toolings.
- All the works are previously designed in 3D:
 - Mistake appearance possibility is minimized
 - Machining programming is easier
- We work with melting simulation software (**QuikCAST of ESI-GROUP**) that gives us information about the filling and cooling of moulds:
 - Time shortage for new toolings startups
 - Detect areas with quite high failure probability



Process Control

- For each casting, our system stores following information:
 - Process Sheet (operations and parameters)
 - Technical Sheet (visual description of processes, problems detected in previous batches)
 - Control Points (checking to made and their records)
- Human team with 4 people, with long experience in foundry, that checks the production and verificates records and processes during fabrication



- COFUNDI owns tools and quality means for checking all our production and processes parameters

Control Means: Metallurgy (I)

- 2 Different laboratories to check metallurgical quality:
 - **Spectrometer** to check aluminium alloys chemical composition



- **Degasser** and Vacuum glass, to remove Hydrogen from aluminium before melting, and testing H removal correctness.

Control Means: Metalurgy (II)

- o **Sand quality** control: higrometer to check and manage humidity. Checking of fines through sand recycle.



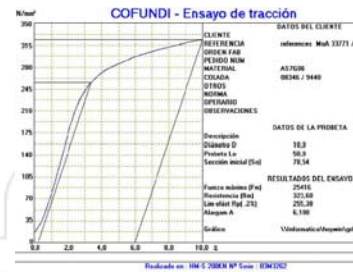
- o **XRay** machine, digital fluoroscopy



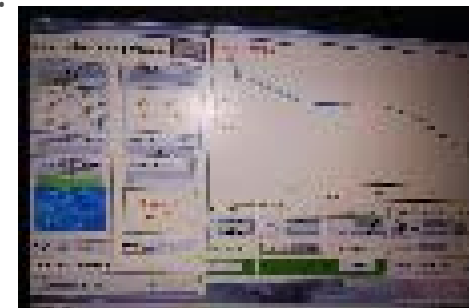
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Control Means: Metallurgy (III)

- o **Tensile test machine**, to test mechanical properties



- o **THERMOLAN**, predictive software that gets information about porosity appearance and metallographic structure correctness, taking information from the aluminium cooling curve. Ours one is the **first european implementation of predictive software for aluminium**.



Control Means: Finishing (I)

- Other laboratory in which final quality assurance tests are made before expedition:
 - Thickness measure, by ultrasonics and/or calipers
 - 3 Dimensions measure Arm (**FARO Arm**), to check dimensions and compare castings with 3D drawings
 - **Brinell hardness**



Control Means: Finishing (II)

- o Beside we make any measure or control that were required by our customers (GO-NotGO gages, calipers) and even unitary trace of the whole part if needed



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