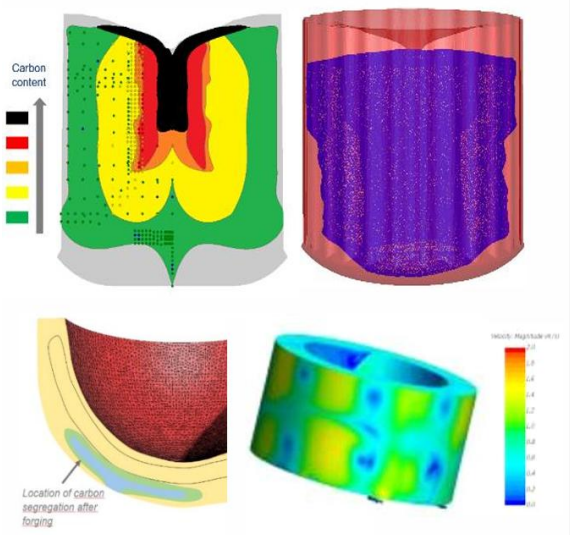
framatome

Forging studies & process simulations

Small Modular Reactors / Advanced Modular Reactors

Expertise in materials behavior and in-depth knowledge of manufacturing steps, such as forging and heat treatment, are key to ensure required quality of components



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Challenge

Demonstrate forgings manufacturability using combination of Metallurgy knowledge and know-how of forging & heat treatment sequences to predict mechanical characteristics and quality of components.

Solution

Process simulation studies include forging and heat treatment sequences, ensuring feasibility of components and recommendations on manufacturing program, to get required level of quality, costs & lead-times optimizations:

Pre-studies:

- Components feasibility: ingots size & chemistry
- Prediction of metallurgical behaviors
- Optimization of industrial routes

Studies:

- Detailed manufacturing sequences from ingot to final machined parts (including forging and heat treatment)
- Positioning of machining areas to avoid segregated areas
- Component & process optimizations with real production parameters

From feasibility studies to justifications to stakeholders

Pre-studies : 2 months per component

Studies : 6 months per component

ISO, ASME and RCCM certified Quality Assurance System

Certified ISO 17025 Laboratory

Customer benefits

- Early demonstration of conformity
- Increase knowledge of components metallurgy (micro-structure & carbon content) and justification of life-time
- Decrease cost uncertainty by providing manufacturing sequences and supply compendium
- Shorten lead-time for component manufacturing
- Enable to manage single or serial production challenges

Your performance
is **our** everyday **commitment**

Key figures

9 000 metric tons press

11 300 metric tons press

More than **3 500** forgings have been delivered by Framatome Forge plant

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