Master Thesis - “Best practice – Weld shrinkage analysis” (30 credits/20 weeks – 1 student)

Project Background

GKN Aerospace designs and produces parts for commercial aircraft engines. We are responsible for requirement fulfillment of the parts we design. The analysis department perform structural and thermal analyses to evaluate the design.

On occasion, defects are found in production that require repair. Welding is one commonly used method. A draw-back is that welding induces residual stresses in the material when the melted material cools and thereby shrinks.

An important part of the evaluation of the repaired structure is to correctly predict the level of residual stress.

There is currently no best practice in how a weld shrinkage analysis should be performed. Different projects have different methods.

Assignment Description

The assignment is to collect the practices of weld shrinkage analyses in the different GKN projects, compare them on an actual case and recommend a best practice.

Qualifications

Student in the final year of their M.Sc. in Mechanical Engineering.

Completed course(s) in theory and application of Finite Element Methods.

Apply by

Send your resume and cover letter to Magnus Andréasson, (magnus.andreasson@gknaerospace.com)

Interviews will be held continuously.