

**Aerospace**  
**Conventional Power Generation**  
**Manufacturing**  
**Maritime**  
**Nuclear Power Generation**  
**Oil and Gas**  
**Rail and Transport**



**VEQTER**

Residual Stress Experts

VEQTER is an engineering company providing excellence in the measurement and management of residual stresses. We are world leaders in our field and offer measurement, consultancy and training services.

## Report Validation and Database Creation

VEQTER's expert understanding of residual stresses uniquely positions it as a key partner in the assessment and compilation of results. We offer a full report validation service for the verification of Finite Element Analysis (FEA) and experimental measurements.

Also, our depth of knowledge allows us to interpret and manipulate data from other contractors, research institutions and universities. This allows us to record data in easily accessible common formats appropriate to our clients, for easy interrogation and intelligent comparison of multiple data sets.

To find out how VEQTER can make a difference to your business, call Dr Xavier Ficquet on +44 (0) 117 987 8015.

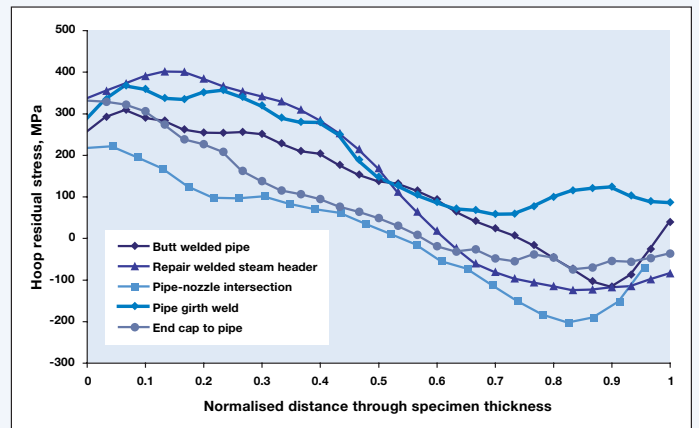
### Report Validation Service

- We provide an independent scrutiny of both numerical and experimental reports concerning residual stresses and fracture
- The foundation of our validation is extensive experience of using all residual stress measurement techniques, coupled with many years of leading edge numerical modelling
- We have experience of validating reports to all levels of quality, e.g. "spot-check" or complete re-working
- FEA report validation will check, for example, convergence, meshes, time increments, boundary conditions and material properties for numerical simulations
- Measurement report validation will check that experimental parameters, such as elastic constants, stress-free lattice spacings, gauge volumes and inversion algorithms were correctly determined and appropriately used



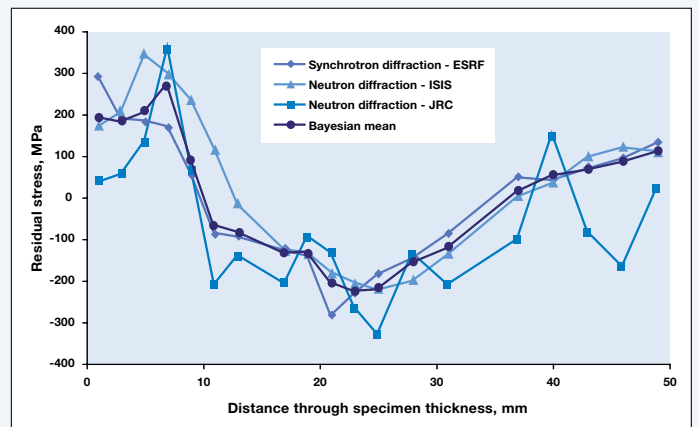
- Mesh refinement
- Boundary conditions
- Material properties
- Reported errors
- Stress-free parameter
- Measurement location
- Gauge volume
- Inversion algorithm

- We can create and manage a database of residual stress measurement results and numerical predictions, using data accrued from current and historical R & D projects
- The database permits interrogation of multiple data sources and ensures consistency in the format of recorded data
- The database enables rapid comparisons to be made using, for example, material type, geometry and fabrication history as search criteria



Comparison of V-weld residual stresses from different components

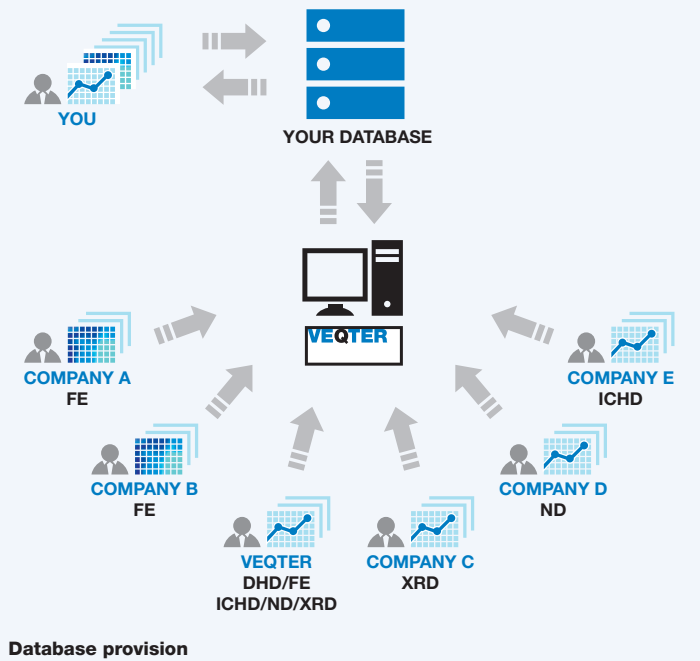
- We can provide a realistic error analysis of the data, and also provide a statistical (e.g. conventional and Bayesian) interpretation of the data



Bayesian mean of multiple experimental data

- The database can be generated to be consistent with R6 and other standards

### Database Creation Service



Database provision