

# Engineering Specialist Services – Assessment of plant **Pipework stress and flexibility analysis**



**We are able to assist customers to comply with legislation such as the Pressure Systems Safety Regulations (PSSR) by avoiding piping system failures as a result of incorrect design. Properly designed piping systems help to ensure future plant reliability.**

## What does the service include?

- An analysis of pipework stresses, support loads and thermal expansions using the latest engineering software – Bentley Autopipe.
- A comprehensive report showing pipework layout along with detailed stress reports for all the components, support loadings and thermal expansions. The report includes recommendations for remedial action.

## Who does it affect and why?

The stresses and loadings imposed by a pressurised piping system operating at elevated temperature are highly complex and can only be properly evaluated through computer analysis. For example, failure due to underestimating the loads on such components as supports or expansion bellows can have serious consequences.

PSSR places duties on anyone who repairs or modifies a pressure system to ensure that nothing about the way in which it is modified or repaired gives rise to danger. In addition Pressure Equipment Regulations (PER) place a duty on anyone who designs and manufactures new pressure equipment (including certain piping systems) to carry out conformity assessment and CE marking where applicable.

As part of these duties a pipework flexibility/stress analysis may be required to demonstrate that the essential safety requirements of PER are being complied with.

## Our approach

First we'll gather data for the analysis from either:

- Isometric drawings, general arrangement drawings or other documents produced by your own draughtsmen for piping.
- Information obtained from a site survey undertaken by one of our engineers.

You will receive a detailed report of the results of our analysis, including support loadings and expansion movements. If the results are not compliant with the standard, we will advise what solutions can be applied.

Zurich employs engineers highly experienced within the process industry with extensive knowledge of codes, standards and legislation relevant to piping. Seeking expert advice ensures you meet your legal obligations.

Linked services include notified body assessment of pressure equipment and finite element analysis of structures.

For more information  
contact us on

**0121 697 9225**

or visit

**[www.zurich.co.uk  
/engineering](http://www.zurich.co.uk/engineering)**