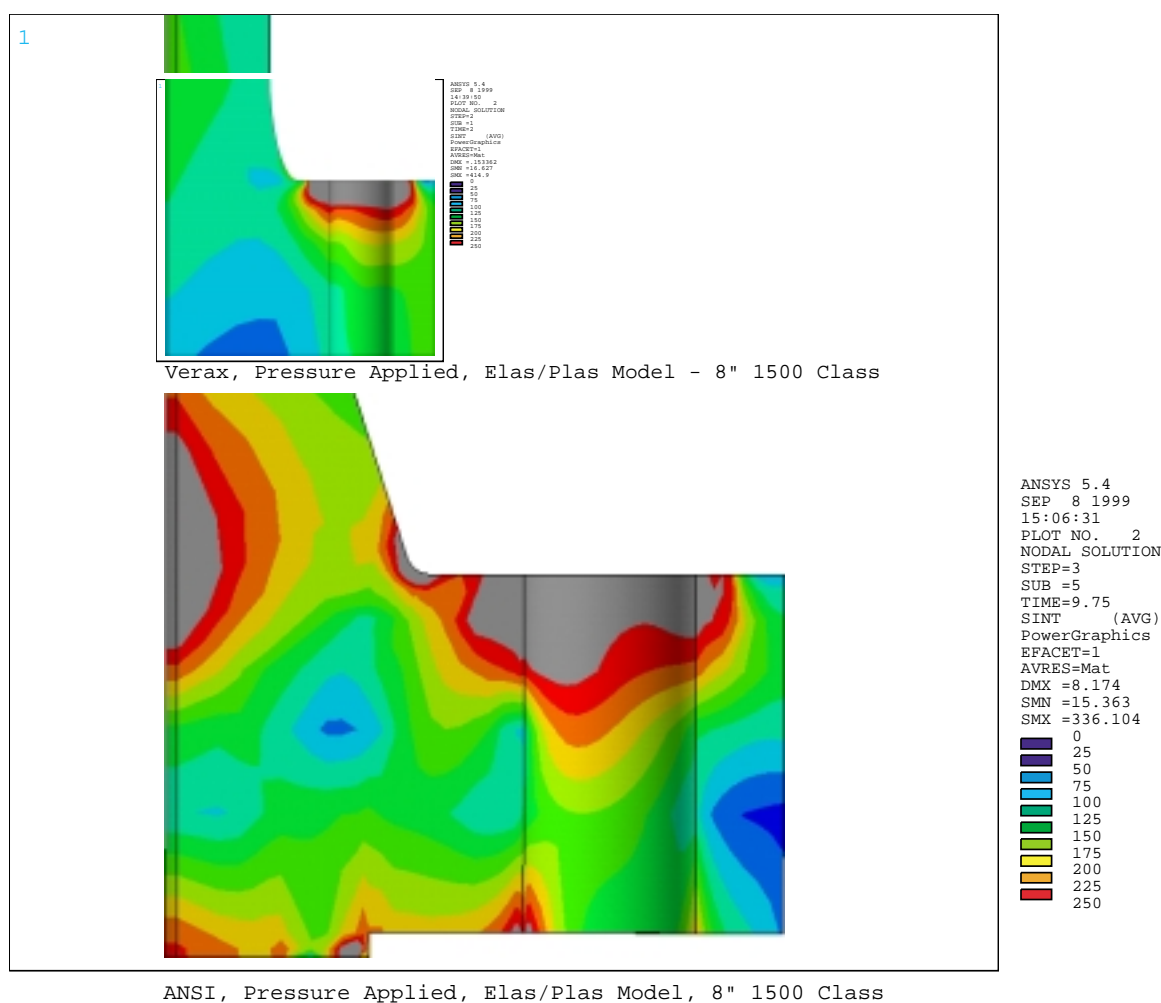


In 1997, David J Power of the University of Strathclyde, under the guidance of dr David R Nash and professor T G F Gray, performed a study, reported on under the title: "A study of conventional and unconventional flanged pipe joint styles using non-linear finite element analysis techniques", sponsored by SHELL (UK) Exploration and Production at LOWESTOFT, Suffolk.

By courtesy of mr Power and the University of Strathclyde, the Figure 53 on page 93 in the report is presented below. It uses two Bi-linear Kinematic Material models for 8 inch pipe, rated at 2'500 psi; one acc. to ANSI and the other to VERAX. They are shown to the same scale to demonstrate the difference in size and to show the levels of strain, calculated for a fluid pressure of 386 bar.

Of particular interest is a comparison of the peak stresses in the transition zone between the flange disk proper and the neck. Also the stress distribution under the bolt head is of interest as it indicates, that with the ANSI-joint bending is significant.



Scaled figure of ANSI and VCF joints