
Question 1 (c) continued...

the user therefore the output can only be as accurate as the input data meaning geometry, material properties, boundary conditions and loading of the component must be accurate. Confidence may be achieved through the FE model using a variety of checks on element size and element mesh for example. The engineer completing the analysis should use some experience on similar problems modelled previously. Subjective checks can also be done to identify areas where there are large jumps in output measured. Here the mesh can be redefined in local areas and reassessed. Alternatively, quantitative checks can be done to check the error norm. There are two main types of refining meshes known as h -adaptive or p -adaptive. Plotting the output and element size, analysing results and repeating until convergence is reached should give confidence in the FEA model. Generally, there will be accepted difference of 5-10% in results of strain energy and maximum stress values.