CAE simulation 5

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Subject : ansys analysis of coal compression equipment

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1. Problem

We are trying to manufacture a coal compression equipment. (Material SS400) The hydraulic jockey placed on the lower beam can apply a force of up to 12 tons to the molding cylinderplaced on the center beam. Currently, the molded cylinder is in contact with the upper beam and the upper beam is loaded, and raw coal is squeezed inside the cylinder to manufacture the formed coal. The hydraulic jack is placed on the lower beam. A 1/4 CAD model is used for simulation considering the geometric symmetry.

2. Simulation result

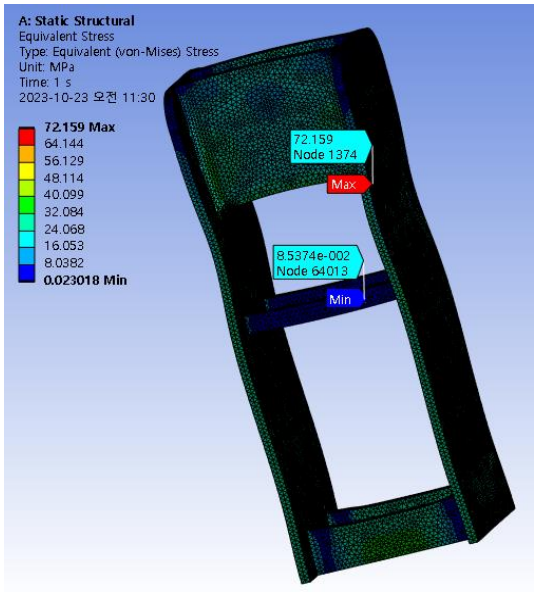
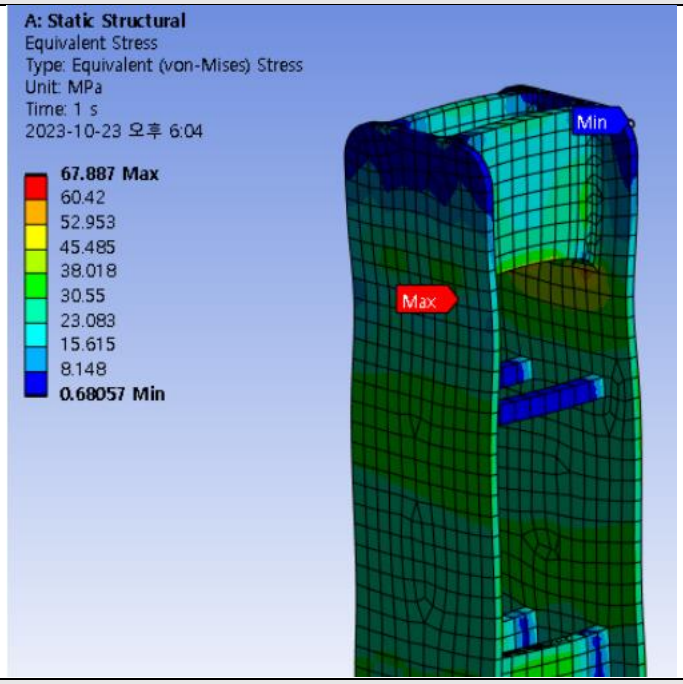
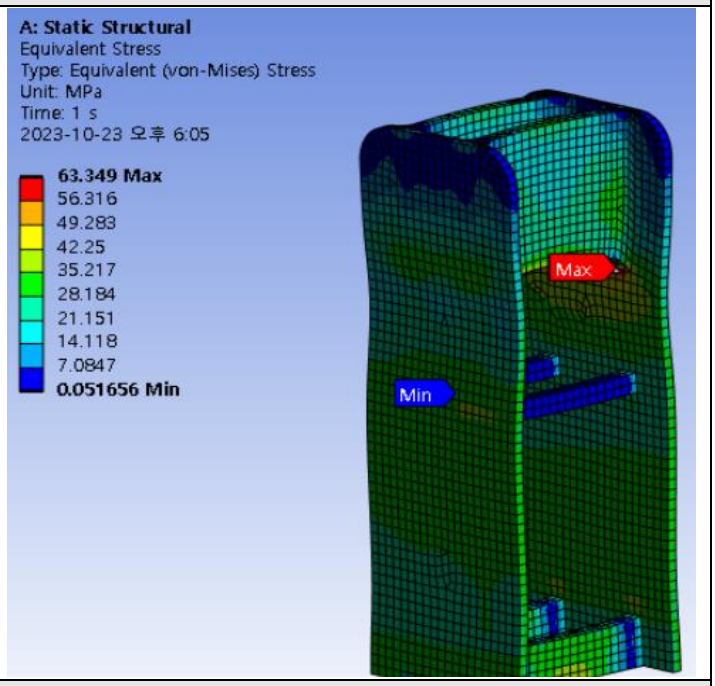
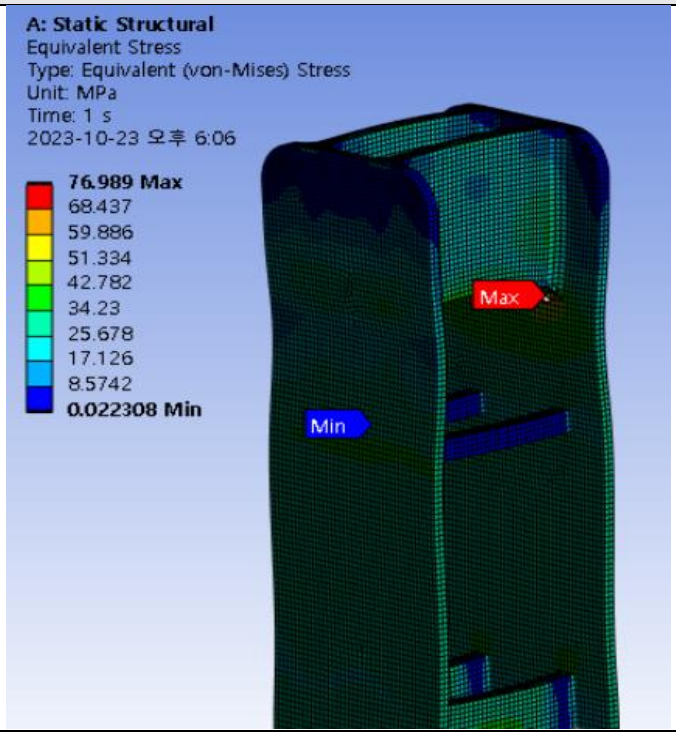
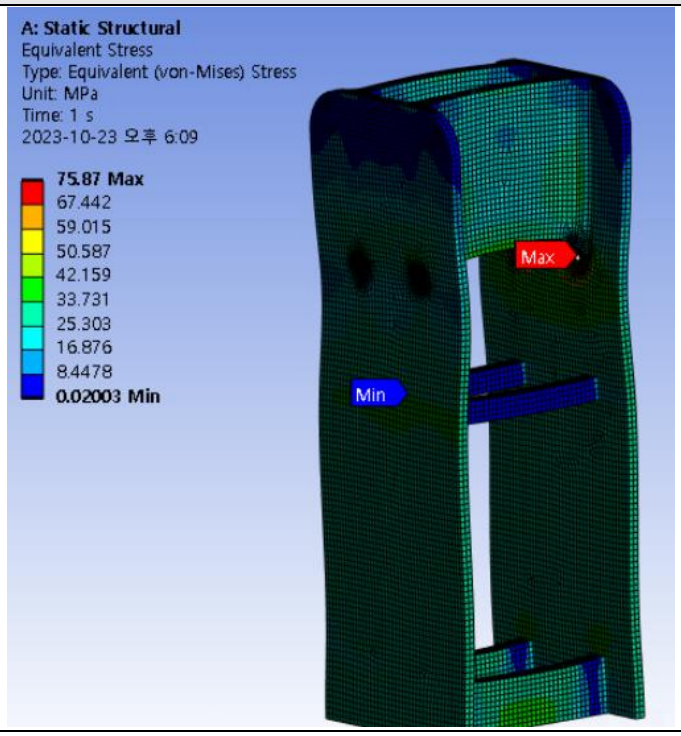


Figure 1. Stress analysis of quarter model

2.1. Full model

Mesh size = 20 $[mm]$	Mesh size = 10 $[mm]$
	
Mesh size = 5 $[mm]$	**Mesh size = 2 $[mm]$**
	

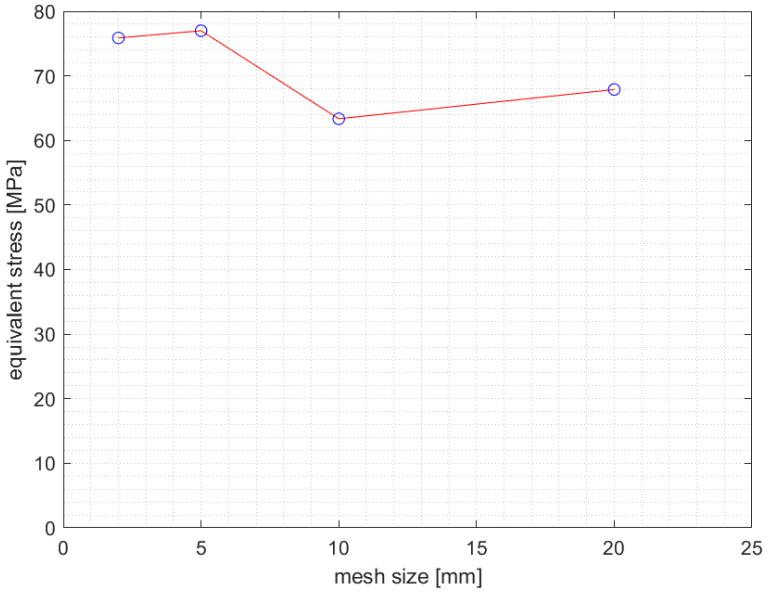


Figure 2. Mesh convergence

As can be seen in the **Figure 2**, mesh equivalent stress converges as mesh size decreases.