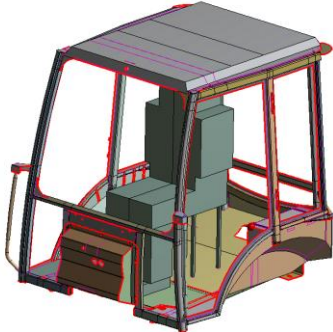
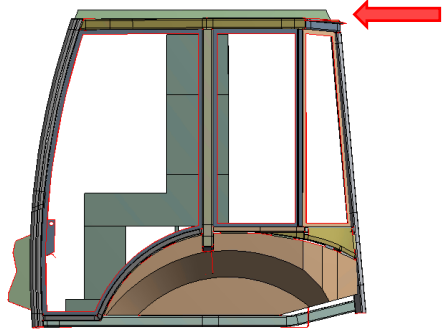
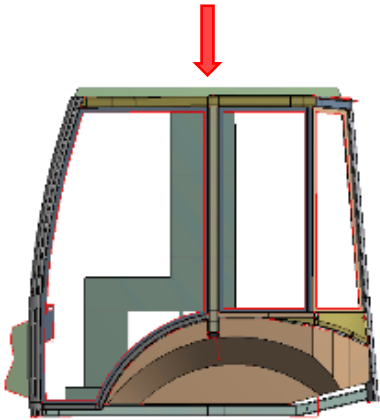
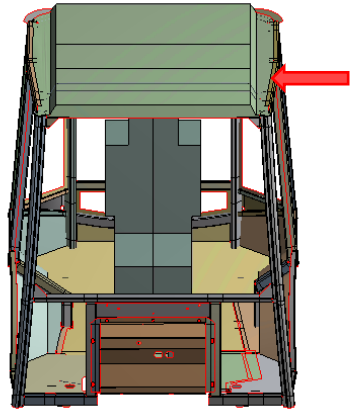


Backhoe Loader Cabin Roll Over Protection Structures (ROPS):



Load Type	Load in N	Energy in J
Lateral Load	$F_{Lat} = 6 * M = 48,600$	$12,500 (M/10000) ^{1.25} = 9,605$
Vertical Load	$F_{Vert} = 19.61 * M = 1,58,841$	Not Applicable
Longitudinal Load	$F_{long} = 4.8 * M = 38,880$	Not Applicable



To perform virtual destructive test (ROPS-FEA) as per ISO3471:2008 to compare with physical testing:

- Extensive FE modelling techniques are used to prepare the cabin to apply ROPS sequence loadings
- Stress v/s strain curve was adapted to all the parts used in cabin to predict the plastic deformation around deflection limited volume.
- ISO 3471 Standard is referred to determines the loading required based on the category of the machinery
- Critical regions in the cabin are identified after the analysis and reported the deformations around DLV, & stress intensities
- To ensure the safety of operator, FE Simulation is carried out for a Cabin which is subjected to various kinds of loads during machine extreme working conditions

