

Design Question 3- Why BESI does not use viscous damper.

BESI doesn't use velocity related viscous dampers for seismic resistance purpose, the reasons are as below:

- **Viscous damper is suitable for constant vibration reduce, need periodic maintenance, not suitable for seismic resistance, because earthquake is a rare dynamic action.**
- **Devices used for seismic resistance shall need no or little maintenance.**
- **(2) Viscous damper is relatively expensive.**
- **(3) Viscous damper, when used in a horizontal position, may have oil leaking when its seal get aged.**
- **(4) ideal linear viscous damper is difficult to make, actual linear viscous damper satisfies linear relationship only at low velocity, at high velocity, actual viscous damper**
- **Is viscous elastic model, only dynamic analysis program can accept this model, no way for manual calculation with equivalent static procedure.**
- **(5) To calculation damping ratio of a structure with viscous dampers is more approximate than that with displacement dependent dampers.**