Question 11

Q: How to perform the piezoelectric-harmonic analysis with viscoelasticity taken into account?

A: The dynamic modulus of a material is used to perform the analysis with viscoelasticity taken into account.
When viscoelasticity is taken into account, the material is treated as an isotropic material during calculations. To calculate the transverse modulus or shear modulus for the analysis, Poisson's ratio specified on the [Piezoelectricity] tab will be used.

Please refer to the next slide.

Additional Information

The piezoelectric-harmonic analysis can take into account viscoelasticity.

The dynamic modulus of a material is used to perform the analysis with viscoelasticity taken into account.

$D^* = D(1 + j \tan\delta) = D_{re} + j\, D_{im}$

D^*:Dynamic modulus, D_{re}:Storage modulus, D_{im}:Loss modulus

When viscoelasticity is taken into account, the material is treated as an isotropic material during calculations.

To calculate the transverse modulus or shear modulus for the analysis, Poisson's ratio specified on the [Piezoelectricity] tab will be used.