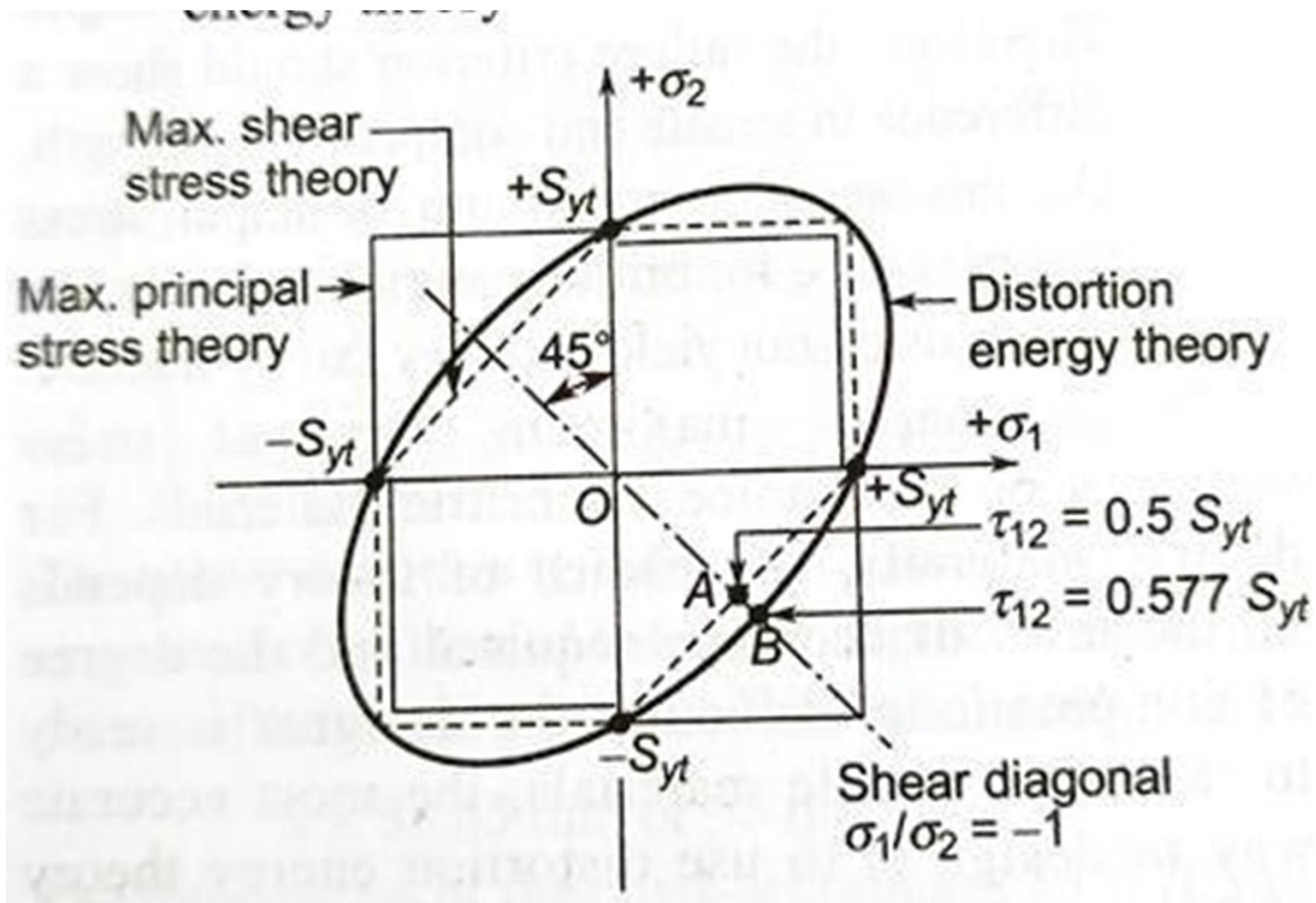


# Selection and uses of theory of failure



The maximum distortion energy theory is the best theory among all. It provides safe and economical design because the area of the region of this theory is neither too small nor not too large so this is best suitable theory for designing.

1. Maximum distortion energy theory is the best theory of failure for ductile materials because it gives safe and economical design.
2. Maximum shear stress theory will give over safe design for ductile materials.
3. Maximum shear stress theory and Maximum distortion energy are not suitable for ductile materials under hydrostatic state of stress conditions because shear stress on all the planes passing through is zero or we can say that every plane is principal plane.
4. For hydrostatic state of stress conditions maximum principal stress theory and maximum principal strain theory and maximum strain energy theory are best suitable.
5. Maximum principal stress theory and Maximum shear stress theory will give same results in uniaxial state of stress conditions and bi-axial state of stress conditions when principal stresses are like in nature.