Earthquakes- Stress and Strain

**Strain**- a change in the shape of a rock caused by stress

1. Elastic strain-
2. Plastic/Ductile strain-

**Stress- Strain Curve**- there is a distinct relationship between stress and strain that can be plotted.

1.  **Low produce the straight segment,
which represents the strain of a
material.**
2. **If the elastic strain is reduced to ,
the deformation .**

**Ductile Deformation**

1. **When stress exceeds a certain value (elastic limit),**

**a material undergoes deformation,**

**shown by the curved segment of the graph.**

1. **This type of strain produces permanent deformation,**

**which means that the material stays**

**even if the stress is reduced to .**

1. **When stress exceeds the strength of a material, the material breaks, or , as designated by the X on the graph.**
2. **Most rocks, though on the surface, become ductile at the higher present at greater .**

**Elastic Rebound Theory**- explains how energy is stored in rocks

* **Rocks bend until the strength of the rock is .**
* **Rupture occurs and the rocks quickly rebound to an shape**
* **Energy is in waves that radiate outward from the .**