Answer on Question #64705, Physics / Mechanics | Relativity

Which is more elastic rubber or steel? why?

Solution:

Young's modulus, also known as the elastic modulus, is a measure of the stiffness of a solid material. It is a mechanical property of linear elastic solid materials.

Young's modulus for rubber (small strain): $(0.01\text{-}0.1)\times10^9$ Pa

Young's modulus for steel: 200×10^9 Pa

Rubber is more elastic than steel.

Explanation: rubber and steel have a different structure.

Steel has a crystal structure. Rubber has long and elastic molecular chains. These molecular chains are curved and intertwined in different directions. The molecular chains are straightened in tension.

Answer:

Rubber is more elastic than steel.

Explanation: rubber and steel have a different structure.

Steel has a crystal structure. Rubber has long and elastic molecular chains.