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# **Chapter 3**

## **Composite Insulator Material**

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### **3.3.2 Forged Steel**

**By Orient Power**

# Forged Steel End Fitting



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## **Definition:**

Forging is the application of thermal and mechanical energy to steel billets or ingots to cause the material to change shape while in a solid state.

## **Working process:**

- Forging results in metallurgical recrystallisation and grain refinement as a result of the thermal cycle and deformation process.
- Forging offers uniformity of composition and structure.

## **Properties:**

### **Advantages:**

- This strengthens the resulting steel product particularly in terms of impact and shear strength.
- Forged steel is generally stronger and more reliable than castings and plate steel due to the fact that the grain flows of the steel are altered, conforming to the shape of the part.
- The nature of forging excludes the occurrence of porosity, shrinkage, cavities and cold pour issues.
- The tight grain structure of forgings makes it mechanically strong. There is less need for expensive alloys to attain high strength components

## **Application:**

Due to the advantages over the casting steel, the forged steel is more frequently used as composite insulator end fitting material.