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# **Chapter 3**

## **Post Insulator Technic**

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### **3.3 Deflection on cantilever strength**

**By Orient Power**

# Deflection on cantilever strength



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## **Cantilever strength:**

- The maximum design cantilever load of the post insulator is defined as the maximum load that can be permanently applied to the post insulator without mechanical degradation.
- Mechanical rating of polymer LP is generally defined by the MDCL. A long insulator has a lower MDCL than a short one, due to the increased moment arm for the same core size.
- The mechanical strength of a polymer LP takes various different ratings according to the insulator length, even though it has the same core diameter.

## **The deflection on cantilever strength:**

- The deflection on cantilever strength is correspond to the deflections measured at the relevant ANSI TR porcelain MWL, to value deflections for other loads, the ratio of deflection/load is constant up to the MDCL.
- The deflection is the second derivative of the bending moment (for simple beam theory). This means that the bending moment need not be maximum for maximum deflection.
- Deflection occurs to a polymer post insulator when exposed to a cantilever load, This deflection is proportional to the insulator length cubed. In some cases, the selection of polymer LP should be based not only on the MDCL, but also on the deflection while loaded.