

Effect of Rubber Material Clamp on Core Loss of 3-phase 100 kVA Transformer Core

Abstract

This study describes the result of an investigation on the effect of rubber material clamp of core lamination with stagger yoke on three 100 kVA three-phase distribution transformer. The investigation involves the variation of power loss, building factor and the total harmonic distortion of flux. The method that used in the measurement is a no load test. Loss at the core of the clamps of wood is lower than the core without clamps and using rubber materials clamp. The Total Harmonic Distortion (THD) of flux is larger in the core using wood clamp material and smaller in the core assembled without clamp, over the whole flux density range. Using wood material clamp of core lamination in transformer core is more efficient than using the other two types of transformer core lamination. In which the use of rubber in addition as clamp material will increase the losses in transformer core due to the surface area of core clamp is inhibit and not easily released to air in a short period.

Keywords: Transformer core, Power loss, Clamp material, Rubber, Building factor