



DEVELOPMENT OF OUTDOOR-SEALING-END OF PREFABRICATED-COMPOSITE-INSULATOR FOR 66/77KV XLPE CABLE

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ABSTRACT

In power transmission field, the products which have merits of light weight, saving assembly time and low cost are demanded increasingly in these years. Especially in case of installation on transmission tower, considering accident of grounding fault, non-dispersion is required for bushing and inner insulation oil. We developed a new prefabricated composite insulator (named as PCI-66 hereinafter) type (fully solid composite) outdoor sealing end and have applied to the practice successfully for more than 2, 5 years. In this paper, we introduce the design concept and field experiences.

KEYWORDS

Prefabricated Composite Insulator, Solid insulator, Dry type outdoor sealing end

1. FEATURES OF THE OUTDOOR SEALING END OF PCI-66

Traditional type outdoor sealing end for 66/77kV XLPE cable is formed by heavy weight porcelain bushing and oil for internal insulation. All of its parts are assembled at the site. Thus, reducing the assemble time and labor-saving at the site was desired.

To meet the above requirements, we developed and applied a new type outdoor sealing end of prefabricated composite insulator for 66/77kV XLPE cable [1]. PCI-66 has the following features.

1. Fully solid insulated construction. Formed by directly molded silicone rubber on the surface of epoxy resin. (Fig.1)
2. Completely dry type sealing end using neither oil nor gas for internal insulation. It can be installed also either horizontally or upside-down without using special fitting.(Fig.2)
3. High reliability. Body is pre-assembled and inspected at the factory before shipment. (Fig.3)
4. Fewer parts, less assembling time at site are possible by applying Plug-in construction. (Fig.4)
5. The weight is very light. Compared with the porcelain type sealing end, it is easier to handle. (Table 1)
6. High dielectric characteristic for pollution. It is usable in very heavy pollution environment with the same length as the porcelain type sealing end for light pollution environment. (Fig. 5)

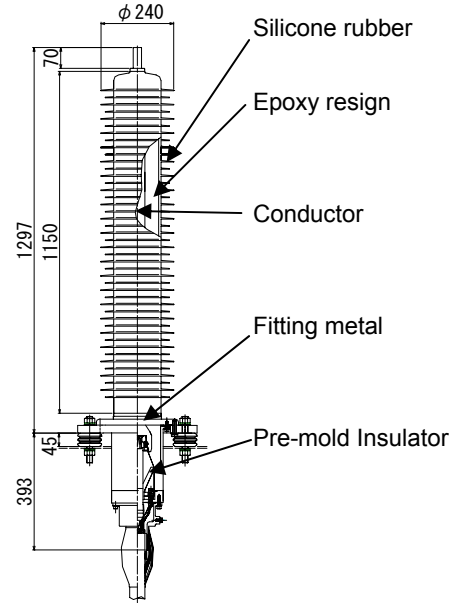


Figure 1: Structure of PCI-66

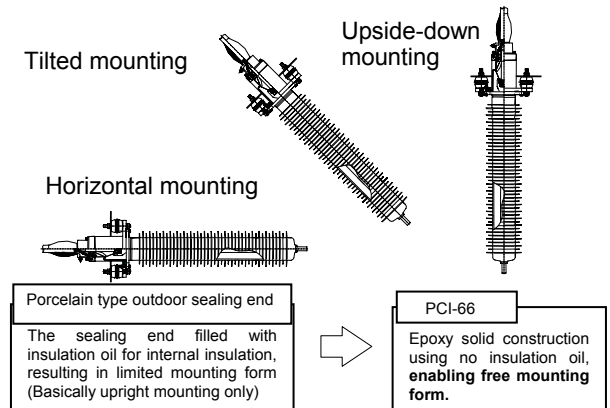


Figure 2: Free mounting form

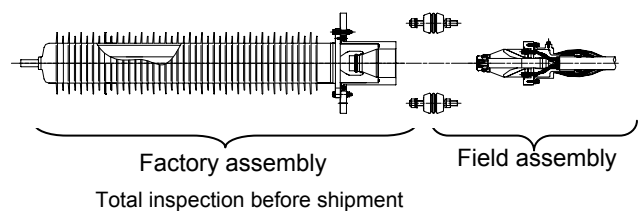


Figure 3: Plug-in construction of PCI-66