

IS 1180 (Part 1) : 2014 outlines the specifications and requirements for outdoor type oil-immersed distribution transformers, specifically those with ratings up to and including 2,500 kVA and nominal system voltages up to 33 kV. It includes details on the types of transformers covered, which consist of three-phase ratings (both non-sealed and sealed types) and single-phase sealed types. The standard emphasizes the importance of energy conservation and aligns with minimum energy performance standards for distribution transformers.

It specifies that sealed type transformers are non-breathing and designed to prevent significant interchange with the external atmosphere. Two categories of sealed transformers are defined based on the volume of oil and gas within them, with specific construction requirements for their covers.

It has also references to various other Indian Standards related to materials and components used in transformers, such as cork composition sheets, paper-covered conductors, and insulating liquids. It highlights the evolution of the distribution transformer industry in India, noting the need for updated standards to reflect advancements and energy conservation efforts.

Standard fittings for transformers are mandated, including earthing terminals, and it provides guidelines for temperature rise limits during testing. The technical parameters for three-phase distribution transformers are detailed, including standard ratings and nominal system voltages, which include high voltage options ranging from 3.3 kV to 33 kV and a low voltage of 415 V.

Key information required for compliance includes specifications, application types (e.g., distribution, solar duty), phase configurations, frequency, cooling types, rated power, voltages, insulation levels, and earthing methods. It also outlines the efficiency declaration method, which is based on the output ratio and specifies tolerances on electrical performance.

Overall, IS 1180 (Part 1) : 2014 serves as a comprehensive guideline for the design, testing, and performance of outdoor oil-immersed distribution transformers, ensuring they meet modern energy efficiency and safety standards while accommodating a range of applications in power distribution systems to strengthen the country's electrical infrastructure.