IS 11037: 2019 Electronic Type Fan Regulators - Specification (First Revision)

IS 11037:2019 "Electronic Type Fan Regulators — Specification (First Revision)," outlines the safety and performance requirements for capacitor-based, step-type electronic fan regulators. These regulators are used with single-phase AC fans up to 250 V to regulate fan speeds.

Key Elements of the Standard:

1. Scope: It applies to electronic fan regulators used in single-phase AC fans, focusing on ensuring safety and performance.
2. Design and Construction: Specifies the general construction requirements for both ventilated and totally enclosed fan regulators, ensuring electrical safety and effective operation.
3. Performance: Defines performance requirements, including the ability to reduce fan speed by at least 50% and support starting the fan from rest at minimum speed.
4. Marking: Regulators must include essential markings such as manufacturer details, voltage, and frequency to ensure clear identification.

Importance and Significance of Tests:

1. Temperature Rise Test: Ensures that the regulator operates within safe temperature limits during use, preventing overheating and maintaining operational safety.
2. Leakage Current Test: Assesses the leakage current between live parts and accessible metal parts to ensure it is below 300 µA, preventing potential electric shocks.
3. High Voltage Test: Verifies the regulator's ability to withstand high voltage stress without breakdown or flashover, ensuring robustness under surge conditions.
4. Insulation Resistance Test: Ensures that the regulator has sufficient insulation resistance , preventing electrical faults.
5. Electrical Endurance Test: Simulates long-term use by testing the regulator's ability to perform after 5,000 operations, ensuring durability and reliability.
6. Creepage Distances and Clearances: Ensures safe distances between live parts and metal parts, reducing the risk of electrical arcing or short circuits.
7. Glow-Wire Test: Tests the resistance of insulating materials to fire under high thermal stress, ensuring that the materials do not ignite or spread fire, enhancing fire safety.
8. Environmental Tests (Cold, Heat, Vibration): Verifies that the regulator can function properly under different environmental conditions like extreme cold, heat, and vibrations, ensuring versatility and reliability in various settings.

By establishing these performance and safety tests, IS 11037 ensures that electronic fan regulators are reliable, safe, and efficient in real-world applications