

## Indian Standard IS 13450 (Part 2/Sec 44) : 2016 - Safety and Performance for Medical CT Scanners

When operating CT scanners, **radiation safety, mechanical safety, and essential performance** are top priorities. These standards ensure equipment reliability and protection for both patients and operators during imaging procedures.

CT scanners are critical diagnostic tools, and the **Indian Standard IS 13450**, adopted from **IEC 60601-2-44:2009**, specifies the **basic safety and essential performance requirements** for X-ray CT equipment. This includes guidance on managing radiation doses, securing high-voltage components, and ensuring accurate image data for both head and body imaging applications.

### Key Requirements

1. **Radiation Safety:** The standard incorporates essential radiation protection principles (justification, optimization, and dose limitation) to prevent unnecessary exposure.
2. **Mechanical Safety:** CT equipment must be equipped with emergency stops, warning lights, and motion controls to prevent patient injury from unintended movement.
3. **Electrical Safety:** Strict guidelines on leakage currents, insulation, and high-voltage handling protect against electrical hazards.
4. **Temperature Limits:** Specifies safe operating temperature limits, especially for components in contact with patients.

### Testing and Compliance

- **Radiation Dose Testing:** Uses specific dose index measures (CTDI) to ensure radiation is within safe levels across scan types.
- **Mechanical Load Testing:** Verifies the strength of patient support structures to withstand operational stresses.
- **Electrical Integrity:** Requires insulation and dielectric strength testing for high-voltage components.

### Summary

IS 13450 (Part 2/Sec 44) : 2016 ensures that CT scanners in India meet stringent safety standards, helping to reduce the risks associated with radiation, electrical components, and equipment operation. BIS-certified CT scanners adhering to this standard provide reliable performance and prioritize user and patient safety in medical settings.