Aluminium Alloy Stranded Conductors are widely used for transmission of power across long distances and as well as connecting conductors in power system equipment like transformers etc. Due to low cost and easy installation, these are much preferred compared to copper based conductors. Aluminium Alloy Stranded Conductors offer excellent conductivity and easy replaceable in any circuit.

The Indian Standard IS 398-4 (1994), titled Aluminium Conductors for Overhead Transmission Purposes, Part 4: Aluminium Alloy Stranded Conductors (Aluminium Magnesium Silicon Type), provides specifications for aluminum alloy conductors designed for overhead transmission. These conductors, made from an aluminum-magnesium-silicon (Al-Mg-Si) alloy, offer improved strength and corrosion resistance over pure aluminum, making them suitable for longer spans and areas with harsh weather conditions.

Key aspects of IS 398-4 (1994) include:

1. **Material Composition**: Specifies the composition of the aluminum-magnesium-silicon alloy, ensuring a balance between conductivity, strength, and durability. This alloy increases tensile strength without significantly compromising conductivity.
2. **Construction Details**: Outlines the structure of stranded conductors, including the number of strands, strand diameter, and lay length (the twist length per strand layer). This configuration ensures flexibility and uniform strength distribution across the conductor.
3. **Mechanical and Electrical Testing**: Establishes tests to verify properties like tensile strength, elongation, and electrical resistance. These tests confirm the conductor's ability to withstand mechanical loads, temperature changes, and other environmental stresses.
4. **Corrosion Resistance**: Since these conductors are exposed to outdoor elements, IS 398-4 (1994) includes requirements for enhanced corrosion resistance, making them suitable for challenging environments.
5. **Quality Control**: Defines quality control protocols to ensure consistent manufacturing standards, providing reliability and performance across different conductor batches.

The guidelines in IS 398-4 (1994) help ensure that aluminum alloy stranded conductors meet safety, strength, and durability requirements, supporting their effective use in India's power transmission networks, especially in areas requiring high strength and corrosion resistance.