IS 963:1958 Specification for chrome molybdenum steel bars and rods for aircraft purposes

The aviation sector in India has experienced rapid growth over the last few decades, becoming one of the world's fastest-growing aviation markets. This growth has been fuelled by increasing demand for domestic and international travel, government support, and improved infrastructure. Here's an overview of factors contributing to and characterizing the growth of aviation in India:

The structure of an aircraft is critical to its performance, **safety, and reliability**. An aircraft's structure must meet stringent requirements to handle the aerodynamic forces, payload, environmental factors, and stress encountered during flight.

The choice of aerospace materials is crucial for optimizing performance, safety, and efficiency in both aircraft and spacecraft. Materials used in aerospace must meet strict requirements, balancing **strength, weight, durability, and resistance to extreme environments**. These advanced materials not only ensure safety and longevity but also support innovation, fuel efficiency, and the aviation industry's move toward sustainability.

The Indian Standard, **IS 963:1958** specifies requirements for in process controls such as **Chemical composition, Rolling, Weight and Finishing** of the product chrome molybdenum steel bars and rods for aircraft also specifies the specialized heat treatment parameters such as Hardenability and Decarburization to ensure accurate and homogeneous physical and mechanical properties.

This standard not only specify the physical properties such as freedom from defects, size tolerances and mechanical parameters like **Hardness and Tensile strength** but also specify **macro examination** and **grain size** of the material to ensure homogeneity of the material to perform at the designed operative ranges.

Packing clause mentions the requirements of the material as forged or rolled condition as applicable. Further it stipulates that such material to be suitably **greased or oiled** for protection against **corrosion** also specified the methodology of the packing depends on size of the product for suitably protected against surface defects to the product during transportation. Inspection and Testing clause provide guidance to the purchaser regarding testing of the product against to specified requirements in this standard.