



Indian Standard IS 3748: 2022 - Tool Steels

Tools are devices or instruments designed to perform specific tasks or operations, commonly used in manufacturing, construction, and repair. They are typically crafted from steel with high strength, high hardness, and wear resistance to ensure durability and effectiveness in their intended applications.

The Indian Standard, IS 3748: 2022, specifies requirements for the tool steels, including their classification, chemical composition, and mechanical properties. This standard categorizes tool steels into various groups based on their alloying elements and intended applications, such as cold work, hot work, high-speed, and plastic molding steels. The classification system in IS 3748: 2022 helps manufacturers and engineers choose the most suitable tool steel for their needs, ensuring that the material's characteristics align with the requirements of the application.

In addition to classification, IS 3748: 2022 outlines the chemical composition and mechanical properties necessary for different types of tool steels. The standard specifies the levels of elements like carbon, chromium, molybdenum, and vanadium, which influence the steel's hardness, strength, and resistance to heat and wear. It also provides guidelines for heat treatment processes to achieve the desired mechanical properties, ensuring consistency and reliability in performance. Quality control procedures and testing methods, such as hardness and tensile testing, are also defined to ensure that tool steels meet the specified standards. This comprehensive approach ensures that tool steels deliver optimal performance, durability, and safety in various industrial applications.

IS 3748: 2022 provides a detailed framework for the classification, chemical composition, and mechanical properties of tool steels. By categorizing tool steels into various groups based on alloying elements and applications, the standard helps manufacturers select the appropriate material for specific tasks.

In summary, IS 3748: 2022 provides a detailed framework for the classification, chemical composition, and mechanical properties of tool steels. By categorizing tool steels into various groups based on alloying elements and applications, the standard helps manufacturers select the appropriate material for specific tasks. Customers purchasing ISI-marked tool steel can expect products that meet stringent quality parameters, ensuring high strength, hardness, wear resistance, and reliable performance in demanding industrial environments.

