

IS 2830 : 2012 Carbon steel cast billet ingots, billets, blooms and slabs for re-rolling into steel for general structural purposes - Specification

Semi-finished steel products such as ingots, billets, blooms, and slabs manufactured through forging, rolling, or continuous casting processes are fundamental to the downstream steel industry, serving as the raw material for producing finished products like sheets, strips, sections, channels, re-bars, and other structural steel items. To achieve consistent quality in these finished products, it is essential that the raw materials—defined in this specification—are of exceptional quality, with precise control over their chemical composition and dimensional accuracy, ensuring optimal manufacturing yield and a smooth, uninterrupted production process.

IS 2830:2012 specifies the requirements for carbon steel cast billet ingots, billets, blooms, and slabs intended for re-rolling into medium and high tensile structural steel, including steel for concrete reinforcement. These materials are also extensively used in manufacturing hot-rolled steel sections for doors, windows, and ventilators, demonstrating their versatility in construction and industrial applications. With **approximately 260 BIS-licensed manufacturers in India**, these products are a cornerstone of the nation's steel industry.

This Indian Standard outlines rigorous parameters for quality and performance, including chemical composition, manufacturing methods, defect control, and dimensional tolerances. It defines ten grades based on carbon and manganese content, with stringent limits on sulfur, phosphorus, and nitrogen to ensure superior mechanical properties. This Indian Standard also accommodates copper-bearing steel with copper between 0.20 and 0.35 percent as an optional quality to impart the steel with additional atmospheric corrosion resistance. The products must be defect-free, meeting tight dimensional tolerances for width, thickness, and length to ensure compatibility with further processing and downstream applications. Manufacturers and purchasers can mutually agree on specific requirements, offering flexibility within the standard's framework.

To maintain consistent quality, the standard prescribes **chemical analysis** and **macrographic examination** as testing methods. These methods verify adherence to composition specifications and identify internal defects like cracks and inclusions, ensuring material reliability and suitability for critical structural applications. Standardized testing protocols enhance confidence in product performance.

IS 2830:2012 effectively addresses the needs of manufacturers, engineers, and regulators. Manufacturers benefit from flexibility while maintaining stringent quality standards, and structural engineers and builders rely on the materials' durability. Regulators are provided with clear, confusion-free specifications and standardized testing methods, ensuring safety compliance and consistency.

By combining stringent quality control with adaptability, IS 2830:2012 ensures the production of high-quality steel products suitable for a wide range of structural and industrial applications.