



Indian Standard IS 14650:2023-Unalloyed and Alloyed Steel Ingot and Semi-finished Products for Re-Rolling Purposes -Specification

The product specified is an unalloyed or alloyed steel ingot and semi-finished product primarily designed for re-rolling into various steel products. Its primary use lies in manufacturing structural, automotive, and other industrial steel products through subsequent rolling or forging.

The desirable properties of this steel product include sufficient chemical homogeneity, minimal harmful inclusions, and dimensional accuracy that can accommodate specific tolerances. It should be free of defects such as cracks, rough edges, laminations, and surface flaws, ensuring its suitability for re-rolling processes. The semi-finished form can have shapes such as billets, blooms, slabs, or rounds, which allow for transformation into final products. Optional enhancements, such as improved chemical homogeneity, can be achieved using processes like Vacuum Arc Remelting (VAR) or Electro Slag Remelting (ESR), which enhance purity and quality.

Several tests are recommended to ensure quality and compliance with standards. Key tests include ladle analysis for verifying chemical composition, macro examination to assess internal features, sulphur print tests for sulphur distribution, and inclusion content checks to detect non-metallic inclusions. Dimensional tolerances are critical, so measurements like bend, camber, convexity, and chamfering are monitored closely. Additionally, chemical composition verification (check analysis), to be conducted to align the product's properties with the requirements of the intended end product.