

IS 6392:2020 - Steel Pipe Flanges Specification Summary

Steel pipe flanges are essential mechanical components in **pipng systems**, serving as **metal disks or rings** that facilitate the connection of pipes, valves, pumps, and other equipment. These flanges are widely used across various industries, including oil and gas, water treatment, steam generation, air systems, chemical processing, and more. The standard comprehensively covers multiple types of steel pipe flanges, including integral, welding neck, plate, screwed boss, slip-on boss, loose flanges for welded-on lapped pipe ends, and blank flanges.

Steel pipe flanges are engineered to withstand varying levels of pressure, ranging from 0.1 to 16.0 newtons per square millimeter. Their **pressure-handling capacity** is determined by factors such as the type of steel used and the operational temperature. The manufacturing process for flanges includes three primary methods: forging (shaping hot metal), casting (pouring molten metal into molds), and rolling (using flat metal sheets). The materials employed in flange construction include carbon steel, carbon-molybdenum steel, chrome-molybdenum steel, and alloy steels, all of which are selected for their strength, durability, and performance under pressure and temperature. The standard also specifies the appropriate nuts and bolts for securely fastening these flanges in place.

The standard outlines precise manufacturing and assembly guidelines for steel pipe flanges, specifying **critical dimensions** such as size, diameter, and spacing of flange components. It further details the requirements for drilling, shaping, and connecting flanges to piping systems. In addition, the standard includes procedures for testing flanges under **hydrostatic pressure**, applying protective coatings (such as zinc plating), and ensuring overall workmanship quality. It also defines requirements for marking, preservation, and packing to maintain the integrity of the flanges during storage and transportation.

The standard is closely aligned with international standards, including ISO 7005-1:2011 and BS 4504 Section 3.1:1989, with adaptations to meet specific industrial needs in India. This alignment ensures that steel pipe flanges conforming to the standard meet global best practices while addressing local operational conditions.

When placing an order or making an inquiry, the purchaser is required to provide detailed specifications, including nominal size, nominal pressure, flange type (including screwing type and materials), material test certificates, bolting requirements, and any specific machining details for flange attachment. This information ensures that the correct flange is selected for the intended application, optimizing both performance and installation.

By adhering to the guidelines set forth in IS 6392, purchasers gain the assurance of receiving high-quality steel pipe flanges that meet industry standards. The standard not only provides clear specifications but also streamlines tooling requirements, simplifies troubleshooting and enhances quality control throughout the manufacturing process.

In conclusion, this standard offers a comprehensive framework for the specification, manufacture, and quality assurance of steel pipe flanges, ensuring that they are fit for use in a wide range of industrial applications. Compliance with IS 6392 guarantees the reliability and durability of flanges, supporting the seamless operation of critical piping systems.