IS 10238: 2001 Fasteners - Threaded steel fasteners - Step bolts for steel structures - Specification

Fasteners - Threaded Steel Fasteners - Step Bolts for Steel Structures are specialized bolts used in steel structures, such as transmission towers, to provide secure footing for workers. These bolts feature a threaded steel design and are typically supplied with two hexagon nuts, ensuring safety and stability while accessing elevated areas.

It is expected that the fasteners should bear high-quality parameters including durability, high load capacity, corrosion resistance, precise threading, and secure fit. These bolts should also meet safety standards, ensuring stability and reliability in steel structures, such as transmission towers and other elevated areas

IS 10238 outlines the specifications for step bolts used in steel structures, including transmission towers. This document ensures the safety and reliability of the critical components. It details the dimensions, material properties, and testing procedures for step bolts, emphasizing a maximum weight limit of 150 kg for individuals using step bolts for climbing.

The standard references other Indian Standards (ISs) to ensure compliance with various aspects of step bolt production and usage, highlighting quality and safety. For example, IS 1367 covers threaded steel fasteners, including material grades, tolerances, mechanical properties, coating requirements, and testing procedures. IS 14394 addresses specifications for hot-dip galvanized hexagon nuts used with step bolts.

The cantilever test described in the standard is crucial for verifying the load-bearing capacity of step bolts. This test involves subjecting the bolt to a 150 kg load, first as a pre-test and then as the main test for 10 seconds on each occasion, and observing for any permanent deformation. These testing requirements, coupled with detailed specifications for materials and dimensions, underscores the emphasis on safety and reliability in the design and use of step bolts for accessing steel structures.