



IS 6623 : 2004 High Strength Structural Nuts – Specification **(Second Revision)**

A nut is a type of fastener that is typically used in conjunction with a bolt or screw to create a secure, threaded connection. Nuts are typically hexagonal (six-sided), but they can come in various shapes, including square, round, or other specialized designs. The inner surface of a nut contains internal threads that match the external threads of a bolt or screw, allowing the nut to be screwed onto the bolt or screw, creating a strong mechanical joint.

Consumers while selecting the High Strength Structural Nuts for structural steel applications, like nuts should be made from high-grade steel alloys, typically heat-treated for enhanced **strength** and **hardness**. They must have precise **size** and **threading** to match bolts and resist deformation under heavy loads. Corrosion resistance, often through coatings like **galvanizing** or passivation, is crucial for outdoor or harsh environments. The nuts should also **exhibit anti seizing**, fatigue, impact, and vibration resistance, ensuring long-term durability and safety in critical steel structures like bridges, buildings, and industrial frameworks.

IS 6623 covers the requirements of large series hexagon, high strength structural steel nuts of property classes **8S (plain finish)** and **10S (Plain Finish, Hot-Dip Galvanized and Plain & Hot-Dip Galvanized)** for the size range of M 12, M 16, M 20, M 22, M 24, M 27, M 30 and M 36 suitable for use in both friction-type and bearing-type of structural steel connections. Nuts to this standard when matched with the appropriate bolts have been designed to provide an assembly with a high level of assurance against failure by thread stripping on over tightening.

IS 6623 prescribes the **standardized dimensional** requirements like **pitch, size, nominal diameter** etc for ensuring compatibility with the mating bolts. This standard also prescribes the applicable requirements for **Proof Load, Rockwell Hardness and Vickers Hardness** for the above mentioned size for property classes 8S and 10S. This standard also prescribes the requirement for **anti-seizing test** in case of the hot-dip galvanized nuts.

In summary, IS 6623 is your assurance that the High Strength Structural Nuts are safe, durable, and of high quality for your structural project.