



IS 16172: 2023 Reinforcement Couplers for Mechanical Splices of Steel Bars in Concrete - Specification (*first revision*)

Reinforcement couplers are specialized connectors used to join steel bars in reinforced concrete structures to ensure continuity of the reinforcement across joints. These mechanical splices replace traditional methods like **welding** and **lapping** by creating secure and direct connections between steel bars. These are most commonly used for large-scale construction projects, such as bridges, high-rise buildings, and other infrastructures, particularly at the places where maintaining strength and durability of joints under stress is essential.

The Bureau of Indian Standards (BIS) had formulated **IS 16172** which provides prescriptive requirements to ensure quality, durability, and reliability of reinforcement couplers.

This standard covers the requirements and tests applicable to reinforcement couplers to be used in reinforced concrete constructions for **mechanical splicing** of reinforcement bars conforming to IS 1786. It outlines guidelines for manufacturing, testing, and quality control of couplers to ensure safety and structural stability. **Annex A** of IS 16172 describes some of the most commonly used mechanical splicing systems based on the type of reinforcement coupler used in them.

The standard addresses the following classes of couplers:

- a) **Class H:** Couplers which meet both low cycle fatigue test and high cycle fatigue test requirements
- b) **Class L:** All other couplers which meet only low cycle fatigue test requirement

The standard specifies various performance requirements of the couplers such as **static tensile test, slip test, cyclic tensile test and fatigue test** (low cycle and high cycle). The nominal sizes of reinforcement couplers based on their internal diameter shall correspond to the nominal sizes of bars covered under **IS 1786**.

The standard also provides requirements of sampling and conformity criteria, packing and rust prevention, and marking. **Annex G** of the standard provides various quality control checks to be practiced at project site during mechanical splicing of reinforcing bars using couplers.