

Summary of Indian Standard

IS 6003:2010 Indented wire for Prestressed Concrete – Specification *(second revision)*

In the manufacture of **prestressed concrete** members, **steel** in the form of wires, bars, strands, and cables is used depending on the size of the structural member. The **strength** carrying capacity of such a member is significantly higher than a similarly sized concrete member due to the crucial role played by the **prestressing steel**. One of the Indian Standards for such **steel wires used in prestressed concrete** is IS 6003.

The standard (IS 6033) which was first published in 1970 was revised in 1983 and 2010 to address newer sizes of steel wires. It guides in the **manufacture, chemical composition**, sizes and **geometrical characteristics**, tolerances, **physical requirements, tests** for evaluating the produced steel wire, **sampling & criteria** for conformity, delivery, inspection & testing, and for identification & marking on the steel wires.

The **manufacturing** method of indented wires involves the use of **steel** made by any of the open hearth, electric duplex, acid bessemer, basic oxygen process in which by simple **cold drawing technique** through a die (or a series of dies with or without **heat treatment**). Only such steel having the specified amount of **sulphur** and **phosphorous** determined using **ladle analysis** should be used to ensure wires of the right **quality** that can meet the other requirements of this standard.

The crucial requirement specified in the standard IS 6003 include **nominal size** (diameter) & the associated **tolerance**. The physical requirements to be evaluated using the respective cross-referred test method standard include minimum **tensile strength, proof stress, ductility** through reverse bend test, minimum **elongation** after fracture (conducted on a specimen of defined gauge length) and **relaxation stress** (as a proportion of initial stress).
