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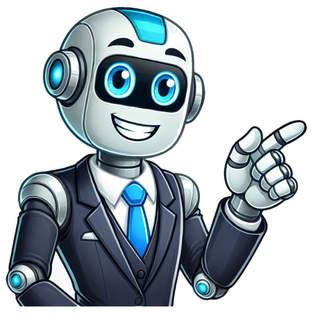

Release notes May 26, 2020 Structural steel plays a crucial role in the construction of buildings, bridges, towers, and various other infrastructures. To ensure safety, quality, and durability in steel construction, engineers and designers must adhere to specific standards and codes. These codes outline the best practices for the design, fabrication, and inspection of steel structures. In India, a set of Indian Standard (IS) codes has been developed for different aspects of structural steel design. This article provides an overview of these standards, their applications, and how they help in the safe and efficient construction of steel structures.The Indian Standard codes for structural steel design provide detailed guidelines that are widely followed during the construction of steel structures in India. These standards are set by the Bureau of Indian Standards (BIS), ensuring uniformity and safety across all steel structures. While some codes are specifically aimed at particular types of steel structures or design methodologies, others provide general practices for construction, welding, bolting, and safety.These codes are indispensable for engineers and designers, as they offer the framework for making informed decisions at every stage of a steel structure's design and construction. In addition to the listed codes, there are other specialized codes that may be referred to based on specific project requirements.Below are the key Indian Standard codes used for various aspects of steel structure design:IS: 800 : 2007 – Code of Practice for General Construction in Steel This is the most widely used code for general construction in steel. It outlines the requirements for designing and constructing steel structures, including the design of beams, columns, and connections. It provides guidance on the loads and stresses to consider during design, as well as recommendations for structural analysis and safety factors.IS: 802 Part 2 : 1978 – Code for Use of Structural Steel in Overhead Transmission Towers (Fabrication, Galvanizing, Inspection, and Packing) This standard applies to the design and construction of steel transmission towers, which are common in electrical power distribution. It covers the fabrication process, galvanization (for corrosion resistance), inspection, and packing requirements, ensuring the towers' integrity and longevity.IS: 806 : 1968 – Code of Practice for Use of Steel Tubes in General Building Construction This code deals with the use of steel tubes, which are commonly used for columns and other load-bearing applications. It provides guidance on the selection, fabrication, and installation of steel tubes to ensure structural stability and safety.IS: 808 : 1989 – Dimensions for Hot-Rolled Steel Beams, Columns, Channels, and Angle Sections This standard provides the dimensional specifications for commonly used hot-rolled steel sections such as I-beams, channels, and angles. It ensures that steel sections conform to standard dimensions, which helps maintain consistency and quality in construction projects.IS: 814 : 2004 – Covered Electrodes for Manual Metal Arc Welding of Carbon and Carbon Manganese Steel This standard specifies the types of electrodes to be used for manual metal arc welding of carbon and carbon manganese steels. Welding is a critical part of steel structure construction, and using the correct type of electrode is essential for achieving strong, durable welds.IS: 816 : 1969 – Code of Practice for Use of Metal Arc Welding for General Construction in Mild Steel This code provides best practices for using metal arc welding techniques, particularly for mild steel. It covers aspects such as the selection of welding rods, the preparation of materials, and the methods to ensure high-quality welds.IS: 1161 : 1998 – Specification for Steel Tubes for Structural Purposes This standard specifies the material requirements for steel tubes used in structural applications. It outlines the mechanical properties, dimensions, and tolerances for steel tubes, ensuring their strength and performance in construction.IS: 1182 : 1983 – Recommended Practice for Radiographic Examination of Fusion Welded Butt Joints in Steel PlatesIS: 3658 : 1999 – Code of Practice for Liquid Penetrant Flaw DetectionIS: 5334 : 2003 – Code of Practice for Magnetic Flaw Detection of WeldsIS: 4260 : 2004 – Recommended Practice for Ultrasonic Testing of Butt Welds in Ferritic Steel These codes provide various nondestructive testing (NDT) methods to inspect welds and joints in steel structures. Methods like radiographic examination, ultrasonic testing, and magnetic flaw detection help identify potential weaknesses in welds, ensuring that the structure remains safe and reliable.IS: 1363 Part 1 & 3 : 2002 – Black Hexagonal Headed Bolts, Screws, Nuts & LocknutsIS: 1367 Part 1 to 3 & 5 to 7 : 2002 – Technical Supply Conditions for Threaded Steel FastenersIS: 3757 : 1985 – High Strength Friction Grip Structural BoltsIS: 6639 : 2005 – Specification for Hexagon Bolts for Steel Structures These standards provide the specifications for various bolts and fasteners used in steel construction. The proper selection of bolts and fasteners is critical for ensuring that joints are secure and capable of withstanding the loads they will encounter in service.IS: 1852 : 1985 – Rolling and Cutting Tolerances for Hot Rolled Steel ProductsIS: 2062 : 1999 – Steel for General Structural PurposesIS: 3502 : 1994 – Specification for Steel Chequered Plates These codes provide guidelines on the tolerances for the manufacturing and cutting of steel products. The consistency in manufacturing helps ensure the correct fit and function of steel components in construction.IS: 5369 : 1975 – General Requirements for Plain Washers and Lock WashersIS: 5372 : 1975 – Specification for Taper Washers for ChannelsIS: 5374 : 1975 – Specification for Taper Washers for I-Beams These standards specify the design and material requirements for washers and related accessories used in steel structures. Washers are critical components in bolted joints, ensuring proper load distribution and preventing damage to surfaces.IS: 7205 : 1974 – Safety Code for Erection of Structural SteelworkIS: 7215 : 1974 – Tolerances for Fabrication of Steel StructuresIS: 12843 : 1989 – Tolerances for Erection of Steel Structures These codes focus on the safety measures to be followed during the erection and fabrication of steel structures. They help ensure that the construction process is carried out safely, minimizing risks for workers and ensuring the structure's integrity.IS: 7307 Part 1 : 1974 – Approval Tests for Welding ProceduresIS: 7310 Part 1 : 1974 – Approval Tests for Welders Working to Approved Welding ProceduresIS: 7318 Part 1 : 1974 – Approval Tests for Welders when Welding Procedure Approval is Not Required These codes provide guidance on the qualification of welding procedures and welders, ensuring that welding practices meet the necessary standards for safety and strength.IS: 8500 : 1991 – Weldable Structural Steel (Medium and High Strength Qualities)IS: 9595 : 1996 – Recommendations for Metal Arc Welding of Carbon Manganese Steel These standards specify the requirements for weldable structural steel, particularly focusing on medium- and high-strength steels that are commonly used in welding applications.The Indian Standard codes for structural steel design are essential resources for engineers and designers involved in steel construction. They provide detailed guidelines and specifications for every stage of the project, from design and material selection to fabrication, welding, bolting, and safety measures. By adhering to these codes, construction professionals ensure that steel structures are designed and built to be safe, durable, and efficient.These standards also help maintain consistency across projects, providing a benchmark for quality that ensures that all steel structures meet the required performance standards. Although these codes are comprehensive, specialized designs may require additional standards and guidelines, which can be referred to based on project-specific needs. Ultimately, the use of these codes is a vital part of maintaining the integrity of steel construction in India and ensuring the safety of structures for years to come. The choice of roof trusses in construction significantly impacts the structural integrity, aesthetics, and cost of a building. Factors such as architectural style, roofing material,... Shear keys play an essential role in modern structural engineering, providing critical resistance against lateral forces such as earthquakes, wind, and sliding loads. These features... A shear wall is a vertical structural element designed to resist horizontal forces that act parallel to the plane of the wall. These forces are... This article has multiple issues. Please help improve it or discuss these issues on the talk page. (Learn how and when to remove these messages) This article is an orphan, as no other articles link to it. Please introduce links to this page from related articles; try the Find link tool for suggestions. (December 2015) This article relies largely or entirely on a single source. Relevant discussion may be found on the talk page. Please help improve this article by introducing citations to additional sources.Find sources: "List of referred Indian Standard Codes for civil engineers" – news · newspapers · books · scholar · JSTOR (January 2025) (Learn how and when to remove this message) A large number of Indian Standard (IS) codes are available that are meant for virtually every aspect of civil engineering one can think of. During one's professional life one normally uses only a handful of them depending on the nature of work they are involved in. Civil engineers engaged in construction activities of large projects usually have to refer to a good number of IS codes as such projects entail use a variety of construction materials in many varieties of structures such as buildings, roads, steel structures, all sorts of foundations and what not. A list of these codes can come in handy not only for them but also for construction-newbies, students, etc. The list provided below may not be a comprehensive one, yet it definitely includes some IS codes quite frequently used (while a few of them occasionally) by construction engineers. The description of the codes in the list may not be exactly the same as that written on the covers of the codes. Readers may add more such codes to this list and also point out slips if found in the given list. Indian standard codes are list of codes used for civil engineers in India for the purpose of design and analysis of civil engineering structures such as buildings, dams, roads, railways, and airports. IS: 456 – code of practice for plain and reinforced concrete. IS: 383 – specifications for fine and coarse aggregate from natural sources for concrete. IS: 2386 – methods of tests for aggregate for concrete. (nine parts) IS: 2430 – methods of sampling. IS: 4082 – specifications for storage of materials. IS: 2116 – permissible clay, silt and fine dust contents in sand. IS: 2250 – compressive strength test for cement mortar cubes. IS: 269-2015 – specifications for 33, 43 and 53 grade OPC. IS: 455 – specifications for PSC (Portland slag cement). IS: 1489 – specifications for PPC (Portland pozzolana cement). IS: 6909 – specifications for SSC (super-sulphated cement). IS: 8041 – specifications for RHPC (Rapid Hardening Portland cement) IS: 12330 – specifications for SRPC (sulphate resistant Portland cement). IS: 6452 – specifications for HAC for structural use (high alumina cement). S: 3466 – specifications for masonry cement. IS: 4031 – chemical analysis and tests on cement. IS: 456; 10262; SP 23 – codes for designing concrete mixes. IS: 1199 – methods of sampling and analysis of concrete. IS: 516BXB JWJJS– methods of test for strength of concrete. IS: 13311 – ultrasonic testing of concrete structures. IS: 4925 – specifications for concrete batching plant. IS: 3025 – tests on water samples IS: 4990 – specifications for plywood formwork for concrete. IS: 9103 – specifications for concrete admixtures. IS: 12200 – specifications for PVC (Polyvinyl Chloride) water bars. IS: 1077 – specifications for bricks for masonry work. IS: 5454 – methods of sampling of bricks for tests. IS: 3495 – methods of testing of bricks. IS: 1786 – cold-worked HYSD steel rebars (grades Fe415 and Fe500). IS: 432; 226; 2062 – mild steel of grade I. IS: 432; 1877 – mild steel of grade II. IS: 1566 – specifications for hard drawn steel wire fabric for reinforcing concrete. IS: 1785 – specifications for plain hard drawn steel wire fabric for prestressed concrete. IS: 2090 – specifications for high tensile strength steel bar for prestressed concrete. IS: 2062 – specifications for steel for general purposes. IS: 226 – specifications for rolled steel made from structural steel. IS: 2074 – specifications for prime coat for structural steel. IS: 2932 – specifications for synthetic enamel paint for structural steel. IS: 12118 – specifications for Polysulphide sealants (A) Cement 1. Specification for 33,43,53 Grade ordinary Portland cement IS 269 - 2015 2. Specification for Rapid hardening Portland cement IS 8041 - 1990 3. Specification for Portland Pozzolona cement IS 1489 (part 1&2) 1991 4. Methods of physical test for hydraulic cement IS 4031 - 1988 5. Method of chemical analysis of hydraulic cement IS 4032 - 1985 6. Method of sampling for hydraulic cement IS 3535 - 1986 7. Standard sand testing of cement IS 650 - 1991 8. Specification for 43 Grade OPC... IS 8112 - 2013 9. Specification for 53 Grade OPC... IS 12269-1987 (B) Coarse / Fine Aggregate 1 Specification for coarse and fine aggregate IS 383-2016 2 Methods of test for aggregate for concrete particle size and shape IS 2386 (Part I) 1963 3 Methods of test for aggregate for concrete estimation of deleterious materials and organic impurities. IS 2386 (Part II) 1963 4 Methods of test for aggregate for specific gravity, density, voids, absorption and bulking IS 2386 (Part III) 1963 5 Methods of test for aggregate for Mechanical properties. IS 2386 (Part IV) 1963 6 Methods of test for aggregate Soundness IS 2386 (Part V) 1963 7 Methods of test for aggregate measuring mortar making properties of fine aggregates.IS 2386 (Part VI) 1963 8 Methods of test for aggregate for alkali-aggregate reactivity IS 2386 (Part VII) 1963 9 Methods of test for aggregate for petrographic examination IS 2386 (Part VIII) 1963 (C) Bricks 1 Method of sampling of clay building bricks IS 5454 - 1978 2 Method of test for burnt-clay building bricks. IS 3495 (Parts I TO iv) 1976 3 Common burnt clay building bricks. IS 1077 - 1992 (D) Masonry Mortar 1 Specification for sand for masonry mortars. IS 2116 - 1980 2 Code of practice for preparation and use of masonry mortar IS 2250 - 1981 (E) Cement Concrete 1 Specification for coarse and fine aggregate. IS 383 - 1970 2 Specification for compressive strength, flexural strength IS 516 - 1959 3 Code of Practices for plain and reinforced concrete etc. IS 456 – 2000 4 Methods of sampling and analysis of concrete IS 1199 – 1959 5 Recommended Guide Lines for Concrete Mix Design IS 10262 – 1982 (F) Curing Compound 1 Standard test method for water retention & daylight reflection test on concrete. ASTM-C-156809 2 The standard method of test for the effect of organic materials in fine aggregate on strength of mortar. ASTM-C. 87-69 3 Standard specification for liquid membranes forming compounds. ASTM C. 309-89 (G) PVC Water Stops 1 Code of practice for the provision of water stops. IS 12200 – 1987 2 Procedure for Testing Parts of IS 8543-19 3 Standard Test Methods for Tensile Properties of Plastics. ASTM : D 638-1991 4 Standard Test Methods for Thermoplastic Elastomers-Tension. ASTM : D 412-1992 (H) HYSD BARS 1 Specifications for HYSD bars. IS 1786 – 1985 2 Specification for Mild Steel and Medium Tensile steel bars. IS 432 (P II) 1966 3 Method for Tensile testing of steel wires. IS 5121 – 1972 4 Hard drawn steel wire for concrete reinforcement. IS 1566 – 1982 5 Method for Tensile testing of Steel products IS 1608 – 1972 6 Code of practice for bending & fixing of bars for concrete reinforcement IS 2502 - 1963 (I) Pre cast R.C.C. Pipes 1 Specifications for pre cast concrete pipes. IS 458 – 1988 2 Methods of Tests for concrete pipes. IS 3597 – 1985 (G) soil 1 Preparation of dry sample (soil) IS:2720 (Part .I) 1983 2 Determination of water content (moisture content) IS:2720 (Part .II) 1973 3 Determination of specific gravity of fine-grained soil IS: 2720 (Part. III) 1980 Sect/1 4 Determination of specific gravity of fine, medium & coarse-grained soil. IS: 2720 (Part. III) 1980 Sect/2 5 Grain size analysis IS:2720 (Part.4) 1985 6 Determination of Liquid and plastic limit IS:2720 (Part.5) 1985 7 Determination of shrinkage factors IS: 2720 (Part. VI) 1987 8 Determination of water content - dry density relation using light compaction. IS: 2720 (Part. VII) 1980 9 Determination of water content - dry density relation using heavy compaction.IS:2720 (Part.8) 1983 10 Determination of water content - dry density relation using constant wt. soil method. IS:2720 (Part IX) 1971 11 Determination of Unconfined compressive strength IS: 2720 (Part. X) 1991 12 Determination of shear strength parameters(tri-axial) with out measurement of pore pressure parameters(Tri-axial compaction) IS:2720(Part. XI) 1971 13 Determination of shear strength parameters (Tri-axial compaction)IS: 2720 (Part. XII) 1981 14 Direct shear test IS: 2720 (Part. XIII) 1986 15 Determination of Density Index (R.D) of cohesionless soil.IS:2720 (Part.14) 1983 16 Determination of consolidation properties IS:2720 (Part.15) 1986 17 Determination of permeability IS:2720 (Part.17) 1986 18 Determination of dry density of soils, in place by the sand replacement method. IS:2720 (Part.28) 1974 19 Determination of dry density of soils, in place by the core-cutter method.IS:2720 (Part.29) 1975 20 Laboratory vane shear test. IS:2720 (Part.30) 1980 21 Determination of the density in place by the ring and water replacement method.IS:2720 (Part.33) 1971 22 Determination of free swell index of soils IS: 2720 (Part. XI) 1977 23 Measurement of swelling pressure of soils. IS: 2720 (Part. XII) 1978 24 Classification and identification of soils for General Engineering purposes.IS:1498 1970 25 IS 13270:2013 covers fibers intended for use in fiber-reinforced concrete, in all types of concrete and mortar, including sprayed concrete, flooring, precast, in situ and repair concretes. IS 2720 (All Parts)[1] IS 2720(Cant say's) all Properties and Testing ^ "Home". bis.org.in. Retrieved from " 2 Page notice You are not logged in. Your IP address will be publicly visible if you make any edits. If you log in or create an account, your edits will be attributed to a username, among other benefits. Content that violates any copyrights will be deleted. Encyclopedic content must be verifiable through citations to reliable sources. Retrieved from " Join TheConstructor to ask questions, answer questions, write articles, and connect with other people. When you join you get additional benefits. Have an account? Sign In