

INDIAN STANDARDS FOR

Public Works Departments, Development Authorities,
Municipal Corporations, Housing Boards/Corporations,
etc

CEMENT

There are different types of Cement Standards. These standards cover manufacture and chemical and physical requirements of cements to ensure their quality. All cements are under mandatory BIS certification and bear the popular ISI mark of BIS. Important standards are :

IS No.	Title
IS 269:2015	Ordinary Portland cement
IS 455:2015	Portland slag cement
IS 1489 (Part 1):2015	Portland pozzolana cement: Part 1 Flyash based
IS 8042:2015	White Portland cement
IS 12330:1988	Sulphate resisting Portland cement

PLAIN AND REINFORCED CONCRETE

Concrete is the main material of construction today. Therefore quality and durability of structures largely depends on the production and quality control of concrete, for which the following standards provide required guidance.

- **IS 456:2000** Plain and reinforced concrete
- **IS 1343:2012** Prestressed concrete
- **IS 4926:2003** Ready mixed concrete
- **IS 10262:2019** Concrete mix proportioning

AGGREGATES

The Following standards cover coarse and fine aggregates used in concrete making which may be from natural sources or artificial aggregates such as slag, fly ash and construction/demolition waste aggregates.

- **IS 383:2016** Coarse and fine aggregates for concrete
- **IS 9142** Artificial lightweight aggregate for concrete: **Part 1** For concrete masonry blocks and for applications other than for structural concrete; **Part 2** Sintered fly ash coarse aggregate

STEEL REINFORCEMENT

The following Indian Standards cover reinforcing steel for use in RCC and prestressing steel for use in prestressed concrete.

- **IS 1786:2008** High strength deformed steel bars and wires for concrete reinforcement
- **IS 6003:2010** Indented wire for prestressed concrete
- **IS 6006:2014** Uncoated stress relieved strand for prestressed concrete
- **IS 14268:2017** Uncoated stress relieved low relaxation seven wire (ply) strand for prestressed concrete
- **IS 16172:2014** Reinforcement couplers for mechanical splices of bars for concrete reinforcement
- **IS 16644:2018** Stress-relieved low relaxation steel wire for prestressed concrete

STRUCTURAL STEEL

The following standards cover quality requirements for steel used in construction of steel structures for various applications.

- **IS 811:1987** Cold formed light gauge structural steel sections
- **IS 1161:2014** Steel tubes for structural purposes
- **IS 2062:2011** Hot rolled medium and high tensile structural steel
- **IS 2713:1980** tubular steel poles for overhead power lines
- **IS 4923:2017** Hollow steel sections for structural use

SEALANTS/FILLERS

This standards cover quality requirement for materials used for sealing and filling in concrete joints.

- **IS 1834:1984** Hot applied sealing compound for joints in concrete
- **IS 1838 (Part 1):1983** Preformed fillers for expansion joint in concrete pavement and structures (non extruding and resilient type): Part 1 Bitumen impregnated fibre
- **IS 1838 (Part 2):1984** Preformed fillers for expansion joint in concrete pavement and structures (non extruding and resilient type): Part 2 CNSL Aldehyde resin and coconut pith
- **IS 1838 (Part 3):2011** Preformed fillers for expansion joints in concrete pavements and structures (non-extruding and resilient type) : Part 3 Polymer based
- **IS 11433 (Part 1):1985** One-part gun-grade polysulphide-based joints sealants: Part 1 General requirements
- **IS 12118 (Part 1):1987** Two-parts polysulphide-based sealants: Part 1 General requirements

BRICKS AND BLOCKS

These standards prescribe quality requirements of bricks and concrete blocks popularly used as masonry building units.

- **IS 1077:1992** Common burnt clay building bricks
- **IS 1725:2013** Stabilized soil blocks used in general building construction
- **IS 16720:2018** Pulverized fuel ash-cement bricks
- **IS 2185 (Part 1 to 4)** Concrete masonry units: **Part 1** Hollow and solid concrete blocks; **Part 2** Hollow and solid light weight concrete blocks; **Part 3** Autoclaved cellular Aerated concrete blocks ; **Part 4** Cellular concrete blocks using preformed foam

WOOD PRODUCTS

These standards prescribe quality requirement for various wood and other agro-based panel products used for panelling and partitioning in building construction.

Plywood

- **IS 303:1989** Plywood for general purposes
- **IS 4990:2011** Plywood for concrete shuttering work

Blockboards, Particle Boards and Fibre Boards

- **IS 1659:2004** Block boards
- **IS 3087 & IS 12823** Particle boards (medium density)
- **IS 12406 & IS 14587** Medium density fibreboards
- **IS 14276 & IS 15786** Cement bonded particle boards

WOOD PRODUCTS (contd..)

Bamboo and Coir Board Products

- **IS 13958 & IS 14588** Bamboo mat board
- **IS 14842:2000** Coir veneer board for general purposes
- **IS 15476:2004** Bamboo mat corrugated sheets
- **IS 15491:2004** Medium density coir boards for general purposes
- **IS 15877:2010** Coir faced block boards
- **IS 15878:2010** Coir hardboard for general purposes
- **IS 15972:2012** Bamboo-jute corrugated and semi-corrugated sheets

DOORS AND WINDOWS

This standards cover quality requirements for various types of doors and windows of different materials used for external and internal applications in buildings.

Wooden

- **IS 1003 (Part 1):2003** Timber panelled and glazed shutters: Part 1 Door shutters
- **IS 1003 (Part 2):1994** Timber panelled and glazed shutters: Part 2 Window and ventilator shutters
- **IS 2202 (Part 1):1999** Wooden flush door shutters (solid core type): Part 1 Plywood face panels
- **IS 2202 (Part 2):1983** Wooden flush door shutters (solid core type): Part 2 Particle board face panels and hardboard face panels
- **IS 4021:1995** Timber door, window and ventilator frames

Metal

- **IS 1038:1983** Steel doors, windows and ventilators
- **IS 4351:2003** Steel door frames
- **IS 6248:1979** Metal rolling shutters and rolling grills

DOORS AND WINDOWS (contd..)

Plastic

- **IS 14856:2000** Glass fibre reinforced (GRP) panel type door shutters for internal use
- **IS 15380:2003** Moulded raised high density fibre (HDF) panel doors
- **IS 15931:2012** Solid panel foam UPVC door shutters

Composite Materials

- **IS 16073:2013** Bamboo-jute composite panel door shutter
- **IS 16074:2014** Steel flush door shutters
- **IS 16096:2013** Phenol bonded bamboo-jute composite hollow door shutter

FLOORING AND ROOFING

These standards give quality requirements for paving/flooring and roofing sheets and tiles made of different materials.

Flooring

- **1237:2012** Cement concrete flooring tiles
- **15658:2006** Precast concrete blocks for paving
- **1130:1969** Marble (blocks, slabs and tiles)
- **14223(Part 1):1994** Polished building stones: Part 1 Granite
- **15622:2017** Pressed ceramic tiles

Roofing

- **277:2003** Galvanized steel sheets (plain and corrugated)
- **459:1992** Corrugated and semi-corrugated asbestos cement sheets
- **12866:1989** Plastic translucent sheets made from thermosetting polyester resin (glass fibre reinforced)
- **14862:2000** Fibre cement flat sheets
- **14871:2000** Products in fibre reinforced cement — Long corrugated or asymmetrical section sheets and fittings for roofing and cladding

WATER FITTING AND SANITARY APPLIANCES

Following are the specifications for water meters, valves for water works purposes and products like taps, urinals, cisterns, water closets for use in public toilets.

- **IS 779:1994** Water meters (domestic type)
- **IS 2556 (Parts 1 to 17)** Vitreous sanitary appliances (Vitreous China) - specification
- **IS 2692:1989** Ferrules for water services
- **IS 7231:1994** Plastic flushing cisterns for water closets and urinals
- **IS 8931:1993** Copper alloy fancy single taps, combination tap assembly and stop valves for water services
- **IS 12701:1996** Rotational moulded polyethylene water storage tanks
- **IS 778:1984** Specification for 2010 copper alloy gate, globe and check valves for waterworks purposes
- **IS 9739:1981** Pressure reducing valves for domestic water supply systems
- **IS 13095:1991** Butterfly valves for general purposes
- **IS 14845:2000** Resilient seated cast iron air relief valves for water works purposes – specification
- **IS 14846:2000** Sluice valves for water works purposes (50 to 1200 mm)

PIPES AND FITTINGS

These standards give quality requirements for pipes and their fittings made of different materials used in water supply, drainage and sewerage.

Plastics

- **IS 4984:2016** High density polyethylene pipes for water supply
- **IS 4985:2000** Unplasticized PVC pipes for potable water supplies
- **IS 7834 (Part 1 to 8)** Injection moulded PVC socket fittings with solvent cement joints for water supplies
- **IS 8008 (Part 1 to 9)** Injection moulded/machined high density polyethylene (HDPE) fittings for potable water supplies — Specification: Part 1 General requirements for fittings
- **IS 13592:2013** Unplasticized polyvinyl chloride (PVC-U) pipes for soil and waste discharge system for inside and outside buildings including ventilation and rain water system
- **IS 14333:1996** High density polyethylene pipes for sewerage
- **IS 15778:2007** Chlorinated polyvinyl chloride (CPVC) pipes for potable hot and cold water distribution supplies
- **IS 16098 (Part 1 & 2):2013** Structured-wall plastics piping systems for non-pressure drainage and sewerage
- **IS 16647:2017** Oriented unplasticized polyvinyl chloride (PVC-O) pipes for water supply

Steel and iron

- **IS 1239 (Part 1) : 2004** Steel tubes tubulars and other wrought steel fittings: Part 1 steel tubes
- **IS 1239 (Part 2) : 2011** Steel tubes tubulars and other steel fittings: Part 2 steel pipe fittings

FIREFIGHTING

These standards give quality requirements of portable and fixed firefighting installations..

- **IS 884:1985** First-aid hose reel for fire fighting
- **IS 903:1993** Fire hose delivery couplings, branch pipe, nozzles and nozzle spanner
- **IS 5290:1993** Landing valves
- **IS 8442:2008** Stand post type water and foam monitor for fire fighting
- **IS 9972:2002** Automatic sprinkler heads for fire protection service
- **IS 15683:2018** Portable fire extinguishers – Performance and construction
- **IS 16018:2012** Wheeled fire extinguisher – Performance and construction

Water Proofing

These standards give guidelines for waterproofing and damp-proofing of building and give quality requirements of water-proofing compounds and membranes.

- **IS 2645: 2003** Integral cement waterproofing compound
- **IS 13182:2020** Waterproofing and damp-proofing of wet areas in building
- **IS 16471:2017** Protection of below ground structures against water from the ground
- **IS 16525:2017** Styrene butadiene styrene (SBS) modified bituminous waterproofing and damp-proofing membrane with polyester reinforcement
- **IS 16526:2017** Atactic polypropylene (APP) modified bituminous waterproofing and damp-proofing membrane with glass fibre reinforcement
- **IS 16532:2017** APP modified bituminous water-proofing and damp-proofing membrane with polyester reinforcement
- **IS 16540:2017** Atactic polypropylene (APP) modified high molecular high density polyethylene (HMHDPE) bituminous waterproofing and damp-proofing membrane

PAINTS

These standards cover quality parameters of various paints used for internal and external applications including enamel, distemper, ready mixed paint, cement paint and plastic emulsion paints.

- **IS 133 (Part 1):2013** Enamel, interior: (a) undercoating (b) finishing: Part 1 For household and decorative purposes
- **IS 428:2013** Washable distemper
- **IS 2074 (Part 1):2013** Ready mixed paint, air drying red oxide-zinc chrome, priming: Part 1 For domestic and decorative applications
- **IS 2932 (Part 1):2013** Enamel, synthetic, exterior (a) undercoating, (b) finishing: Part 1 For household and decorative applications
- **IS 2933 (Part 1):2013** Enamel, exterior, (a) undercoating, (b) finishing: Part 1 For domestic and decorative applications
- **IS 3536:2016** Ready mixed paint, brushing, wood primer
- **IS 5410:2013** Cement paint
- **IS 15489:2013** Paint, plastic emulsion

GLASS

These standards cover requirements for different glass and mirrors used during building construction.

- **IS 2553(Part 1):2018** Safety glass: Part 1 General purpose
- **IS 3438:1994** Silvered glass mirrors for general purposes
- **IS 14900:2018** Transparent float glass
- **IS 16982 : 2018** Heat strengthened glass
- **IS 17346 : 2020** Insulating glazing unit

PV Modules

Important standards on terrestrial photovoltaic (PV) modules

- **IS 14286 (Part 1) : 2019/IEC 61215-1 : 2016** PV Panel Terrestrial Photovoltaic (PV) Modules – Design Qualification and Type Approval
- **IS 14286 (Part 2) : 2019/IEC 61215-2 : 2016** Test Procedures
- **IS 14286 (Part 1/ Sec 1) : 2019/IEC 61215-1-1 : 2016** Testing requirements of crystalline silicon photovoltaic PV modules
- **IS 14286 (Part 1/ Sec 2) : 2019/IEC 61215-1-1 : 2016** Testing requirements of thin - Film cadmium telluride CdTe based photovoltaic PV modules
- **IS 14286 (Part 1/ Sec 3) : 2019/IEC 61215-1-1 : 2016** Testing requirements of thin - Film amorphous silicon based photovoltaic PV modules
- **IS 14286 (Part 1/ Sec 4) : 2019/IEC 61215-1-1 : 2016** Testing requirements of thin - Film Cu(In,Ga)(S,Se)₂ based photovoltaic PV modules

LED STREET LIGHTING

The following Indian Standards have been published on LED Street lighting:

- **IS 10322 (Part 5/ Section 3) : 2012** -- Luminaires Part 5
Particular requirements Section 3 Luminaires for Road and Street Lighting
- **IS 16107 (Part 2/Section 2) : 2017** -- Luminaires
Performance Part 2 Particular Requirements Section 2 LED Street Lighting
Luminaire

Street Food Vendors

- **IS 16066 : 2016** Street Food Vendors – Food Safety

This standard lays down control check points with minimum requirements and checklist with grading criteria which if exercised would ensure safe food to the consumer. It covers all mobile/fixed food vendors serving prepared/raw food for human consumption

Rainwater Harvesting & Groundwater Recharge

Considering the scarcity of and need for conservation of water, the following standards have been formulated for water harvesting through artificial recharge to ground water and roof top collection mechanisms.

- **IS 14961:2001** Guidelines for rain water harvesting in hilly areas by roof water collection system
- **IS 15797:2008** Roof top rainwater harvesting – Guidelines
- **IS 15792:2008** Artificial recharge to ground water - Guidelines

Standards on Solid Waste Management

IS 16557 Solid Waste Management -Segregation, Collection and Utilization at Household/Community Level -Guidelines

This standard describes methodologies for handling of different types of waste generated at house hold/community level.

IS 16556 : 2016 Municipal Solid Waste Compost manure grade – Specification

IS 16702:2018 Vermicompost specification

Standards on Plastic Waste Management

- **IS 14534 : 2016** Plastics – Guidelines for the Recovery and Recycling of plastic Waste (*First Revision*) This standard prescribes guidelines for the selection, segregation and processing of plastics waste/scrap. It establishes the different options for the recovery of plastics waste arising from pre-consumer and post-consumer sources
- **IS/ISO 17088 : 2012** ‘Specifications for Compostable Plastics (First Revision)’

This Standard specifies procedures and requirements for the identification and labelling of plastics, and products made from plastics, that are suitable for recovery through aerobic composting. The four following aspects are addressed:

- a) biodegradation;
- b) disintegration during composting;
- c) negative effects on the composting process and facility;
- d) negative effects on the quality of the resulting compost, including the presence of high levels of regulated metals and other harmful components

NATIONAL BUILDING CODE OF INDIA 2016 (NBC 2016)



For more details, visit: <https://bis.gov.in/index.php/standards/technical-department/national-building-code/>

NBC 2016 in Groups

Group	Aspect	Coverage
Group 1	For Planning, Building/ Land Development work	(Parts 0, 1, 2, 3, 4, 5, 10 – Sections 1 & 2 and Part 11)
Group 2	For Structural Design	(Part 0, 6 – Sections 1 to 8 and Part 11)
Group 3	For aspects relating to Construction Management, Practices and Safety and Asset and Facility Management	(Part 0, 7, 11 and Part 12)
Group 4	For Building Services	(Part 0, 8 – Sections 1 to 6 and Part 11)
Group 5	For Plumbing Services	(Part 0, 9 – Sections 1 to 4 and Part 11)

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Important Links

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NEWS AND EVENTS

- Temporary measures for relaxation of provision of BIS Conformity Assessment Regulations 2018 for renewal of licence with late fee and renewal of deferred licence
- Extension of date of implementation of amendments to Indian Standards and revised Indian Standards
- Relaxation in fee for MSME units for licence under Bureau of Indian Standards (Conformity Assessment) Regulations 2018 and its amendments- req

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Training Programmes Conducted (Domestic)

Proposals for New Programmes

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Reference Materials

NEWS [VIEW ALL](#)

- on "Laboratory Quality Management System & Internal Audit as per IS/ISO/IEC 17025 : 2017 " to be held during 20-23 July 2020.
- 2-day Online Training programme on " Transition to IS/ISO/IEC 17025 : 2017 " to be held during 27-28 July 2020.
- 4-day Online Training programme on " Medical Laboratories Quality Systems and Internal Audit as per IS/ISO 15189 : 2012 " to be held during 4-7 August 2020.
- 2-day Online Training programme on "Measurement Uncertainty" to be held during 06-07 August 2020.
- 4-day Online Training programme on "Laboratory Quality Management

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