

(Provisional)

MYANMAR
NATIONAL
BUILDING
CODE
2012

PART 6
MATERIAL

PROVISIONAL CODE OF MYANMAR-2012
BUILDING MATERIALS

TABLE OF CONTENTS

NO.	TITLE	PAGE
6.1	SCOPE	1
6.2	MATERIALS	1
6.3	NEW OR ALTERNATIVE MATERIALS	1
6.4	STORAGE OF MATERIALS	2
6.5	METHODS OF TEST	2
6.5.2.1	Aluminium and Other Light Metals and Their Alloy	2
6.5.2.2	Bitumen and Tar Products	3
6.5.2.3	Builder's Hardware	4
6.5.2.4	Building Chemicals	5
6.5.2.5	Blocks, Bricks, Tiles and Masonry	6
6.5.2.6	Cement and Concrete	7
6.5.2.7	Doors, Windows and Ventilators	10
6.5.2.8	Electrical Wiring, Fittings and Accessories	12
6.5.2.9	Floor Covering, Roofing and Other Finishes	15
6.5.2.10	Glass	18
6.5.2.11	Gypsum Board and Plaster	18
6.5.2.12	Paints and Allied Products	19
6.5.2.13	Polymers, Plastic and Geosynthetics/Geotextiles	22
6.5.2.14	Sanitary Appliances and Water Fittings	23
6.5.2.15	Stones	26
6.5.2.16	Structural Steel	27
6.5.2.17	Thermal Insulation Materials	28
6.5.2.18	Wood Based Materials	30
6.5.2.19	Welding Electrodes and Wires	32
6.5.2.20	Wire Ropes and Wire Products	33

NATIONAL BUILDING CODE OF MYANMAR

PART 6: BUILDING MATERIALS

6.1 SCOPE

This Part of the Code covers the requirements of building materials and components, and criteria for accepting new or alternative buildings materials and components.

6.2 MATERIALS

Every material used in fulfilment of the requirements of this Part, unless otherwise specified in the Code or approved, shall conform to the relevant ASTM Standards or Indian Standards. A list of standards as the 'accepted standards' is given at the end of this Part of Code.

6.3 NEW OR ALTERNATIVE MATERIALS

6.3.1 The provisions of this Part are not intended to prevent the use of any material not specifically prescribed under 2. Any such material may be approved by the Authority or a committee appointed by them for the purpose, provided it is established that the material is satisfactory for the purpose intended and the equivalent of that required in this Part or any other specification issued or approved by the Authority. The Authority or a committee appointed by them shall take into account the following parameters, as applicable to the concerned new or alternative building materials:

- a) Requirements of the material specified/expected in terms of the provisions given in the standards on its usage, including its applicability in geo-climatic condition;
- b) General appearance;
- c) Dimension and dimensional stability;
- d) Structural stability including strength properties;
- e) Fire safety;
- f) Durability;
- g) Thermal properties;
- h) Mechanical properties;
- i) Acoustical properties;
- j) Optical properties;
- k) Biological effect;
- l) Environmental aspects;
- m) Working characteristics;
- n) Ease of handling; and
- o) Consistency and workability.

For establishing the performance of the Material/component, laboratory/field tests, and field trials, as required, and study of historical data are recommended.

6.3.2 Approval in writing of the Authority or a committee appointed by them for the purpose of approval of material shall be obtained by the owner or his agent before any new, alternative or equivalent material is used. The Authority or a committee appointed by them shall base such approval on the principle set forth in 3.1 and shall require that tests be made (*see 7.1*) or sufficient evidence or proof be submitted, at the expense of the owner or his agent, to substantiate any claim for the proposed material.

6.4 STORAGE OF MATERIALS

All building materials shall be stored on the building site in such a way as to prevent deterioration or the loss or impairment of their structural or other essential properties. (*See Part -7 Construction Practices and Safety*)

6.5 METHODS OF TEST

6.5.1 Every test of material required in this Part or by the Authority shall be carried out in accordance with the ASTM Standard or Indian Standard method of test. In the case of methods of tests where ASTM Standards or Indian Standards are not available, the same shall conform to the methods of tests issued by the Authority. A list of Standard methods of test is given at the end of this Part of the Code as the 'Good Practices'. Laboratory tests shall be conducted by recognized laboratories acceptable to the Authority.

6.5.2 The manufacturer/supplier shall satisfy himself that materials conform to the requirements of the specifications and if requested shall supply a certificate to this effect to the purchaser or his representative. When such test certificate is not available, the specimen of the material shall be tested.

Following are the Myanmar Standards for various building materials and components, to be complied with in fulfilment of the requirements of the Code. The list has been arranged in alphabetical order of their principal category as given.

- 1) Aluminium and Other Light Metals and Their Alloys
- 2) Bitumen and Tar Products
- 3) Builder's Hardware
- 4) Building chemicals
- 5) Blocks, Bricks, Tiles and Masonry
- 6) Cement and Concrete
- 7) Doors Windows and Ventilators
- 8) Electrical Wiring, Fittings and Accessories
- 9) Floor Covering, Roofing and Other Finishes
- 10) Glass and Glazing
- 11) Gypsum Based Materials
- 12) Paints and Allied Products
- 13) Polymers, Plastic and Geosynthetics/Geotextiles
- 14) Sanitary Appliances and Water Fittings
- 15) Stones
- 16) Structural Steel
- 17) Thermal Insulation Materials
- 18) Wood Based Materials
- 19) Welding Electrodes and Wires
- 20) Wire Ropes and Wire Products

6.5.2.1 Aluminium and Other Light Metals and Their Alloy

Std: No.	Title
ASTM B 209	Standard Specification for aluminum and aluminum-alloy sheet and plate
ASTM B 211	Standard Specification for aluminum and aluminum-alloy bar, rod, and wire
ASTM B 221	Specification for wrought aluminium and aluminium alloys drawn tube for general engineering purposes

ASTM B 308	Specification for wrought aluminium and aluminium alloys, bars, rods and sections for general engineering purposes
ASTM B 313	Specification for aluminum and aluminum-alloy round welded tubes
ASTM B 361	Specification for factory-made wrought aluminum and aluminum-alloy welding fittings
ASTM B 429	Specification for aluminum-alloy extruded structural pipe and tube
ASTM B 491	Specification for aluminum and aluminum-alloy extruded round tubes for general-purpose applications
ASTM B 557	Standard test method for tension testing of wrought and cast aluminium and magnesium-alloy products
ASTM E 34	Test method for chemical analysis of aluminium and aluminium-base alloys
IS 1254	Specification for corrugated aluminium sheet
IS 1284	Specification for wrought aluminium and aluminium alloys bolt and screw stock for general engineering purposes

6.5.2.2 Bitumen and Tar Products

a) Specifications

Std: No.	Title
ASTM D 450	Specification for crude coal tar for general use
ASTM D 490	Specification for road tar
ASTM D 977	Specification for bitumen emulsion for roads (anionic type and cationic type)
ASTM D 2026	Specification for cutback bitumen
IS 73	Specification for paving bitumen
IS 218	Specification for creosote oil for use as wood preservatives
IS 454	Specification for cutback bitumen from waxy crude
IS 702	Specification for industrial bitumen
IS 15462	Specification for polymer and rubber modified bitumen

b) Methods for testing tar and bituminous materials

Std: No.	Title
ASTM D 4	Determination of standard test method for bitumen content
ASTM D 5	Determination of penetration
ASTM D 6	Determination of loss of heating
ASTM D 20	Distillation test
ASTM D 36	Determination of softening point
ASTM D 70	Determination of density of semi-solid bituminous materials (Pycnometer Method)
ASTM D 92	Determination of flash point and fire point
ASTM D 95	Determination of water content
ASTM D 113	Determination of ductility
ASTM D 139	Float test
ASTM D 140	Sampling

ASTM D 243	Determination of residue of specified penetration
ASTM D 1188	Determination of bulk specific gravity and density of compacted bituminous mixtures using coated samples
ASTM D 1754	Determination of effect of heat and air by thin film oven test
ASTM D 2042	Determination of solubility of asphalt materials in trichloroethylene
ASTM D 3205	Determination of viscosity - Industrial viscosity - Absolute viscosity - Kinematic viscosity
IS 1207	Determination of equiviscous temperature
IS 9381	Determination of FRAASS breaking point of bitumen
IS 10512	Determination of wax content in bitumen
IS 15172	Determination of curing index for cutback bitumen
IS 15173	Determination of breaking point for cationic bitumen emulsion

6.5.2.3 Builder's Hardware

Std: No.	Title
ASTM A 90	Tests for weight of coating on zinc-coated (Galvanized) iron or steel articles
ASTM A 153	Specification for zinc coated iron and steel hardware
ASTM A 394	Specification for steel transmission tower bolts, zinc-coated and bare
IS 205	Specification for non-ferrous metal butt hinges
IS 206	Specification for tee and strap hinges
IS 208	Specification for door handles
IS 281	Specification for mild steel sliding door bolts for use with padlock
IS 362	Specification for parliament hinges
IS 363	Specification for hasps and staples
IS 364	Specification for fanlight catch
IS 452	Specification for door springs, rattail type
IS 453	Specification for double acting spring hinges
IS 729	Specification for drawer locks, cupboard locks and box locks
IS 1341	Specification for steel butt hinges
IS 1823	Specification for floor door stoppers
IS 2209	Specification for mortice locks (vertical type)
IS 2681	Specification for non-ferrous metal sliding door bolts for use with padlock
IS 3564	Specification for door closers (hydraulically regulated)
IS 3818	Specification for continuous (piano) hinges
IS 3828	Specification for ventilator chains
IS 4621	Specification for indicating bolts for use in public baths and lavatories
IS 4992	Specification for door handles for mortice locks (vertical type)
IS 5187	Specification for flush bolts
IS 5899	Specification for bathroom latches
IS 6318	Specification for plastic window stays and fasteners
IS 7534	Specification for sliding locking bolts for use with padlock
IS 9106	Specification for rising butt hinges
IS 9131	Specification for rim locks
IS 9460	Specification for flush drop handles for drawers
IS 9899	Specification for hat, coat and wardrobe hooks

IS 10019	Specification for mild steel stays and fasteners
IS 10342	Specification for curtain rail system
IS 12817	Specification for stainless steel butt hinges
IS 12867	Specification for PVC handrail covers

6.5.2.4 Building Chemicals

a) Chemical and Mineral Admixtures

Std:No.	Title
ASTM C 183	Practice for sampling and the amount of testing of hydraulic cement
ASTM C 185	Test method for air content of hydraulic cement mortar
ASTM C 233	Test method for air-entraining admixtures for concrete
ASTM C 260	Specification for air-entraining admixtures for concrete
ASTM C 494	Specification for chemical admixtures for concrete
ASTM C 618	Specification for fly ash and raw or calcined natural pozzolan for use as a mineral admixture in Portland cement concrete
ASTM C 989	Specification for ground granulated blast-furnace slag for use in concrete and mortar
ASTM C 1017	Specification for chemical admixture for used in producing flowing concrete
ASTM C 1240	Specification for silica fume for use in hydraulic cement concrete and mortar

b) Special Concrete Production Materials

Std:No.	Title
ASTM C 330	Specification for Lightweight Aggregates for Structural Concrete
ASTM C 331	Specification for Lightweight Aggregates for Concrete Masonry Units
ASTM C 332	Specification for Lightweight Aggregates for Insulating Concrete
ASTM C494/C494M	Specification of chemical admixture for concrete
ASTM C 869	Specification for Foaming Agents Used in Making Preformed for Cellular Concrete
ASTM C 979	Specification for pigments for Integrally colored concrete
ASTM C 1017	Specification for chemical admixtures for use in producing flowing concrete
ASTM C 1107	Specification for packaged dry, hydraulic-cement grout (Non Shrink)

c) Concrete Curing Materials

Std:No.	Title
ASTM C 171	Specifications for sheet materials for curing concrete
ASTM C 309	Specification for liquid membrane Forming compounds for curing compound

ASTM C 1315 Specification for liquid membrane forming compounds having special properties for curing and sealing concrete

d) Waterproofing and Damp-proofing Materials

ASTM D 41 Specification for asphalt primer used in roofing, damp proofing and waterproofing

ASTM D 43 Specification for coal tar primer used in roofing, damp proofing and waterproofing

ASTM D 173 Specification for bitumen saturated cotton fabrics used in roofing and waterproofing

ASTM D 449 Specification for asphalt used in damp proofing and water proofing

ASTM D 450 Specification for coal tar pitch used in roofing, damp proofing and waterproofing

ASTM D1327 Specification for bitumen saturated woven burlap fabrics used in roofing and waterproofing

ASTM D 1668 Specification for glass fabrics for roofing and waterproofing

e) Epoxy Compound Materials

ASTM C 881 Specification for epoxy-resin base bonding system for concrete

ASTM C 884 Test method for thermal compatibility between concrete and epoxy resin overlay

6.5.2.5 Blocks, Bricks, Tiles and Masonry

Std: No.	Title
ASTM C 55	Specification of concrete building bricks
ASTM C 62	Specification for common burnt clay building bricks
ASTM C 67	Test methods for sampling of clay building bricks and structural clay tile
ASTM C 140	Standard test methods for sampling and testing concrete masonry units and related units
ASTM C 216	Specification for common burnt clay facing bricks
ASTM C 652	Specification for burnt clay hollow bricks for walls and partitions
ASTM C 902	Specification for burnt clay hollow bricks for Pedestrian paving
ASTM C 1209	Terminology of concrete masonry units and related units
AST M C 1232	Terminology of masonry
ASTM C 1272	Specification for burnt clay hollow bricks for heavy vehicular traffic paving
ASTM C 1634	Specification of concrete facing bricks
IS 2117	Guide for manufacture of handmade common burnt clay building bricks
IS 3583	Specification for common burnt clay paving bricks
IS 4885	Specification for sewer bricks
IS 11650	Guide for manufacture of common burnt clay building bricks by semi-mechanized process
IS 13757	Specification of burnt clay fly ash bricks

6.5.2.6 Cement and Concrete**a) Aggregates**

Std: No.	Title
ASTM C 29/ C 29 M	Methods of test for aggregates for concrete
ASTM C 35	Specification for inorganic aggregates for use in gypsum plaster
ASTM C 40	Estimation of deleterious materials and organic impurities
ASTM C 66	Specification for sand for plaster
ASTM C 88	Standard test method for soundness of aggregates
ASTM C 127	Test method for density, relative density (specific gravity), and absorption of coarse aggregate
ASTM C 128	Test method for density, relative density (specific gravity), and absorption of fine Aggregate
ASTM C 136	Standard test methods for sieve analysis of fine and coarse aggregates
ASTM C 144	Specification for sand for masonry
ASTM C 294	Specifications for coarse and fine aggregates from natural sources for concrete
ASTM C 331	Specification for artificial lightweight aggregates for concrete masonry units
ASTM C 1260	Test method for potential alkali reactivity of aggregates (mortar-bar method)
ASTM D 75	Practice for sampling aggregates

b) Cement

Std: No.	Title
ASTM C 91	Specification for masonry cement
ASTM C 150	Specification for ordinary portland cement
ASTM C 618	Specification for portland pozzolana cement (flyash based)
ASTM C 989	Specification for portland slag cement
IS 1489	Specification for portland pozzolana cement (calcined clay based)
IS 6452	Specification for high alumina cement for structural use
IS 8041	Specification for rapid hardening portland cement
IS 8042	Specification for white portland cement
IS 8043	Specification for hydrophobic portland cement
IS 12330	Specification for sulphate resisting portland cement
IS 12600	Specification for low heat portland cement

c) Water

Std: No.	Title
ASTM C 1293	Standard test method for pH of water
ASTM C 1602	Specification for construction water

d) Pozzolanas

Std: No.	Title
ASTM C 311	Testing and sampling of fly ash or natural pozzolanic materials
ASTM C 618	Specification for calcined clay pozzolana
ASTM C 989	Specification for granulated slag for manufacture of Portland slag cement
ASTM C 1240	Specification for silica fume
ASTM C 1709	Specification for pulverized fly ash for use as pozzolana in cement, cement mortar and concrete
IS 12870	Methods of sampling calcined clay pozzolana

e) Concrete

Std: No.	Title
ASTM C 33	Code of practice for plain and reinforced concrete
ASTM C 94/C94M	Code of practice for ready mixed concrete
IS 1343	Code of practice for prestressed concrete

f) Cement and concrete sampling and methods of test

Std: No.	Title
ASTM C 31/C 31M	Method of making, curing of concrete test specimens in the field
ASTM C 39/C39M	Test method for compressive strength of cylindrical concrete specimens
ASTM C 78	Standard test method for flexural strength of concrete
ASTM C 109/C109M	Method for compressive strength of hydraulic cement mortars
ASTM C 114	Test methods for chemical analysis of hydraulic cement
ASTM C 115	Test method for fineness of portland cement by the turbid meter
ASTM C 136	Determination of fineness by dry sieving
ASTM C143/C143M	Test method for slump of hydraulic cement concrete
ASTM C151	Determination of soundness
ASTM C 172	Methods of sampling and analysis of concrete
ASTM C 183	Method of sampling hydraulic cement

ASTM C 185	Determination of air content of hydraulic cement mortar
ASTM C 186	Determination of heat of hydration
ASTM C187	Determination of consistency of standard cement paste
ASTM C 188	Determination of density of hydraulic cement
ASTM C191	Determination of initial and final setting times
ASTM C192/C192M	Method of making, curing of concrete test specimens in the laboratory
ASTM C 204	Test method for fineness of hydraulic cement by air permeability apparatus
ASTM C 232	Standard test methods for bleeding of concrete
ASTM C 403	Methods of test for determining setting time of concrete by penetration resistance
ASTM C 451	Standard test method for early stiffening of hydraulic cement (false set test method)
ASTM C 452	Standard test method for potential expansion of portland-cement mortars exposed to sulfate
ASTM C 496	Method of test for splitting tensile strength of concrete
ASTM C 512	Standard test method for creep of concrete in compression
ASTM C 900	Test method for pull out strength of hardened concrete
ASTMC 944	Method of test for abrasion resistance of concrete
ASTM C 1314	Determination of transverse and compressive strength of plastic mortar using prism
ASTM C 1583	Methods of testing bond in reinforced concrete (pull out test) Methods of non-destructive testing of concrete
ASTM C 1709	Standard guide for evaluation of alternative supplementary cementitious materials for use in concrete
IS 516	Methods of test for strength of concrete
IS 8425	Determination of fineness by specific surface by Blaine air permeability method
IS 13311(Part 1)	Ultrasonic pulse velocity
IS 13311(Part 2)	Rebound hammer

g) Cement matrix products

Std: No.	Title
ASTM C 62	Specification for soil-based blocks used in general building construction
ASTM C 90	Specification for hollow load bearing masonry units
ASTM C 90	Method of sampling of and testing concrete masonry units
ASTM C129	Specification for hollow non-load bearing masonry units

ASTM C 145	Specification of solid load bearing masonry units
ASTM C 157	Specification for precast concrete kerbs
ASTM C 220	Specification for asbestos cement flat sheets
ASTM C 270	Specifications for mortar for unit masonry
ASTM C 426	Test method for drying shrinkage of concrete block
ASTM C 458	Methods of test for asbestos cement products
ASTM C 476	Specification for mortar and grout for reinforced unit masonry
ASTM C 626	Specification for reinforced concrete fence posts
ASTM C 746	Specification for corrugated and semi-corrugated asbestos cement sheets
ASTM E 447	Test method for compressive strength of masonry prisms

h) Lime

Std No	Title
ASTM C 5	Specification for quicklime for structural purposes
ASTM C 25	Test methods for chemical analysis of limestone, quicklime, and hydrated lime
ASTM C 50	Standard practice for sampling, sample preparation, packaging, and marking of lime and limestone products
ASTM C 110	Test methods for physical testing of quicklime, hydrated lime, and limestone
ASTM C 141	Standard specification for hydrated hydraulic lime for structural purposes
ASTM C 206	Specification for finishing hydrated lime
ASTM C 207	Specification for hydrated lime for masonry purposes
ASTM C 270	Specification for hydrated lime for masonry purposes

6.5.2.7 Doors, Windows and Ventilators

a) Wooden doors, windows and ventilators

Std: No.	Title
ASTM E 152	Methods for fire test of door assemblies
ASTM E 283	Standard test method for determining the rate of air leakage through exterior windows, curtain walls, and doors under specified pressure and temperature differences across the specimen
ASTM E 330	Standard test method for structural performance of exterior windows, doors, skylights and curtain walls by uniform static air pressure difference
ASTM E 331	Test method for water penetration of exterior windows, curtain walls, and doors by uniform static air pressure difference
ASTM E 547	Standard test method for water penetration of exterior windows, skylight, doors and curtain walls by cyclic static pressure

ASTM E 783	Standard test method for field measurement of air leakage through installed exterior windows and doors
ASTM E 1886	Standard test method for performance of exterior windows, curtain walls, doors, and storm shutters impacted by missile(s) and exposed to cyclic pressure differentials
ASTM E 1996	Standard specification for performance of exterior windows, glazed curtain walls, doors, and storm shutters impacted by windborne debris in hurricanes
ASTM E 2068	Test method for determination of operating force of sliding windows and doors
ASTM F 842	Standard test methods for measuring the forced entry resistance of sliding door assemblies, excluding glazing impact
IS 1003	Specification for timber panelled and glazed shutters
Part 1	Door shutters
Part 2	Window and ventilator shutters
IS 1141	Code of practice for seasoning of timber
IS 1826	Specification for venetian blinds for windows
IS 2191	Specification for wooden flush door shutters (cellular and hollow core type)
Part 1	Plywood face panels
Part 2	Particleboard face panels and hard board face panels
IS 2202	Specification for wooden flush door shutters (solid core type)
Part 1	Plywood face panels
Part 2	Particle board face panels and hard board face panels
IS 4020	Method of test for door shutters
Part-1	General
Part-2	Measurement of dimensions and squareness
Part-3	Measurement of general flatness
Part-4	Local planeness test
Part-5	Impact indentation test
Part-6	Flexure test
Part-7	Edge loading test
Part-8	Shock resistance test
Part-9	Buckling resistance test
Part-10	Slamming test
Part-11	Misuse test
Part-12	Varying humidity test

Part-13	End immersion test
Part-14	Knife test
Part-15	Glue adhesion test
Part-16	Screw withdrawal resistance test
IS 4021	Specification for timber door, window and ventilator frames
IS 4913	Code of practice for selection, installation and maintenance of timber doors and windows
IS 4962	Specification for wooden side sliding doors
IS 6198	Specification for ledged, braced and battened timber shutters
IS 6523	Specification for precast reinforced concrete door, window frames

b) Metal doors, windows frames and ventilators

Std: No.	Title
IS 1038	Specification for steel doors, windows and ventilators
IS 1361	Specification for steel windows for industrial buildings
IS1948	Specification for aluminium doors, windows and ventilators
IS1949	Specification for aluminium windows for industrial buildings
IS 4351	Specification for steel door frames
IS 6248	Specification for metal rolling shutters and rolling grills
IS 7452	Specification for hot rolled steel sections for doors, windows and ventilators
IS 10451	Specification for steel sliding shutters
IS 10521	Specification for collapsible gates

c) Plastic doors and windows

Std: No.	Title
ASTM D 638	Standard test method for tensile properties of plastics
IS 14856	Specification for glass fibre reinforced (GRP) panel type door shutters for internal use
IS 15380	Specification for moulded raised high density fibre (HDF) panel doors

6.5.2.8 Electrical Wiring, Fittings and Accessories

Std: No.	Title
IS 371	Specification for ceiling roses
IS 374	Specification for electric ceiling type fans and regulators
IS 418	Specification for tungsten filament general service electric lamps

IS 1258	Specification for bayonet lamp holders
IS 1293	Specification for plugs and socket outlets rated voltage up to and including 250 V and rated current up to and including 16 amperes
IS 1534	Specification for ballasts for fluorescent lamps: Part 1 for switch start circuits
IS 1554	PVC insulated (heavy duty) electric cables:
Part 1	For working voltages upto and including 1 100 V
Part 2	For working voltages from 3.3 kV upto and including 11 kV
IS 1777	Specification for industrial luminaire with metal reflectors
IS 1985	General purpose luminaires
Part 5	Particular requirements, Section 2
IS 1985	Recessed luminaires
Part 5	Particular requirements, Section 3
IS 1987	Luminaires for road and street lighting
Part 5	Particular requirements, Section 4
IS 1987	Portable general purpose luminaires
Part 5	Particular requirements, Section 5
IS 1987	Flood light
IS 2086	Specification for carriers and bases used in re-wirable type electric fuses up to 650 V
IS 2148	Specification for flameproof enclosures “d” for electrical apparatus for explosive gas atmospheres
IS 2206	Specification for flameproof electric lighting fittings
Part 1	Well glass and bulkhead types
Part 2	Fittings using glass tubes
Part 3	Fittings using fluorescent lamps and plastic covers
Part 4	Portable flame-proof handlamps and approved flexible cables
IS 2215	Specification for starters for fluorescent lamps
IS 2412	Specification for link clips for electrical wiring
IS 2418	Specification for tubular fluorescent lamps for general lighting services:
Part 1	Requirements and tests
Part 2	Standard lamp data sheets
Part 3	Dimensions of G-5 and G-13 bi-pin caps
Part 4	Go and no-go gauges for G-5 and G-13 bi-pin caps
IS 2667	Specification for fittings for rigid steel conduits for electrical wiring

IS 2675	Specification for enclosed distribution fuseboards and cutouts for voltages not exceeding 1000 V
IS 3287	Specification for industrial lighting fittings with plastic reflectors
IS 3323	Specification for bi-pin lamp holders for tubular fluorescent lamps
IS 3324	Specification for holders for starters for tubular fluorescent lamps
IS 3419	Specification for fittings for rigid non-metallic conduits
IS 3480	Specification for flexible steel conduits for electrical wiring
IS 3528	Specification for waterproof electric lighting fittings
IS 3553	Specification for watertight electric lighting fittings
IS 3837	Specification for accessories for rigid steel conduits for electrical wiring
IS 3854	Specification for switches for domestic and similar purposes
IS 4012	Specification for dust-proof electric lighting fittings
IS 4013	Specification for dust-tight electric lighting fittings
IS 4160	Specification for interlocking switch socket outlet
IS 4615	Specification for switch socket outlets (non-interlocking type)
IS 4649	Specification for adaptors for flexible steel conduits
IS 5077	Specification for decorative lighting outfits
IS 6538	Specification for three-pin plugs made of resilient material
IS 8030	Specification for luminaires for hospitals
IS 8828	Specification for circuit-breakers for over current protection for household and similar installation
IS 9537	Specification for conduits for electrical installations:
Part 1	General requirements
Part 2	Rigid steel conduits
Part 3	Rigid plain conduits for insulating materials
Part 4	Pliable self-recovering conduits for insulating materials
Part 5	Pliable conduits of insulating materials
Part 6	Pliable conduits of metal or composite materials
Part 8	Rigid non-threadable conduits of aluminium alloy
IS 9926	Specification for fuse wires used in rewirable type electric fuses up to 650 V
IS 10322	Specification for luminaires:
Part 1	General requirements
Part 2	Constructional requirements
Part 3	Screw and screwless terminations
Part 4	Methods of tests

Part 5	Particular requirements, Section 1
IS 11037	Electronic type fan regulators
IS 13010	AC watt-hour meters, Class 0.5, 1 and 2
IS 13779	AC static watt-hour meters (Class 1 and 2)
IS 13947	Specification for low-voltage
Part 3	Switchgear and controlgear: Part 3 switches, disconnectors, switch disconnectors and fuse combination units
IS14763	Conduit for electrical purposes, outside diameters of conduits for electrical installations and threads for conduits and fittings
IS14768	Conduit fittings for electrical installations:
Part 1	General requirements
Part 2	Metal conduit fittings
IS 14772	Enclosures for accessories for household and similar fixed electrical installations
IS 14927	Cable trunking and ducting systems for electrical installations
Part 1	General requirements
Part 2	Cable trunking and ducting systems intended for mounting on walls or ceilings
IS 14930	Conduit systems for electrical installations:
Part 1	General requirements
Part 2	Particular requirements for conduit system buried underground
IS 15368	Cable reels for household and similar purposes

6.5.2.9 Floor Covering, Roofing and Other Finishes

a) Concrete flooring

Std: No.	Title
ASTM C 150	Specification for cement concrete flooring tiles
ASTM F 710	Standard test practice for preparing concrete floors to receive resilient flooring
ASTM F 970	Standard test method for static load limit
IS 3670	Code of practice for construction of timber floors
IS 5766	Code of practice for laying burnt clay brick flooring
IS 13801	Specification for chequered cement concrete tiles

b) Flooring compositions

Std: No.	Title
ASTM F 1066	Specification for vinyl composition floor tile
IS 9162	Methods of tests for epoxy resin, hardness and epoxy resin compositions for floor topping
IS 9197	Specification for epoxy resin, hardness and epoxy resin compositions for floor topping

c) Linoleum flooring

Std: No.	Title
ASTM F 2034	Specification for sheet linoleum floor covering
ASTM F 2195	Specification for linoleum floor tile
IS 9704	Methods of tests for linoleum sheets and tiles

d) Ceramic and other finishings

Std: No.	Title
ASTM C 57	Specification for structural clay floor tile
ASTM C 212	Standard methods of sampling and testing structural clay tile
ASTM C 373	Determination of water absorption
ASTM C 424	Determination of crazing resistance (Glazed tiles)
ASTM C 484	Determination of resistance to thermal shock
ASTM C 648	Determination of breaking resistance
ASTM C 1026	Determination of frost resistance
ASTM C 1027	Determination of resistance to deep abrasion(Unglazed tiles)
ASTM C 1028	Determination of dimensions and surface quality
IS 3951	Specification for hollow clay tiles for floors and roofs
IS 4457	Specification for ceramic unglazed vitreous acid resisting tile
IS13630	Method of test for ceramic tiles
IS 13630	Determination of moisture expansion using boiling water (unglazed tiles)
IS 13630	Determination of linear thermal expansion
IS 13630	Determination of modulus of rupture
IS 13630	Determination of chemical resistance (Glazed tiles)
IS 13630	Determination of chemical resistance (Unglazed tiles)
IS 13630	Determination of resistance to surface abrasion (Glazed tiles)
IS 13630	Determination of scratch hardness of surface according to Mohs'

IS 13711 Sampling and basis for acceptance of ceramic tiles

e) Roofing

Std: No.	Title
ASTM C 1167	Specification for clay roofing tiles (Mangalore pattern)
ASTM C 1492	Specification for concrete roof tiles
ASTM D 312	Specification for asphalt used in roofing
ASTM D 380	Specification for asphalt roll roofing
ASTM D 41	Specification for asphalt primer used in roofing, damp proofing waterproofing
ASTM D 2822	Specification for asphalt roof cement
ASTM D 2823	Specification for asphalt roof coating
ASTM D 3746	Test method for impact resistance of bituminous roofing system
ASTM D 4022	Specification for coal tar roof cement, asbestos containing
ASTM D 4434	Specification for poly (vinyl chloride) sheet roofing
ASTM E 108	Standard for fire test of roof coverings
IS 277	Specification for galvanized steel sheets (plain and corrugated)
IS 459	Specification for corrugated and semi-corrugated asbestos cement sheets
IS 6250	Specification for roofing slate tiles
IS 1464	Specification for clay ridge and ceiling tiles
IS 2690	Specification for burnt clay flat terracing tiles
Part -1	Machine made
Part-2	Hand made
IS 12583	Specification for corrugated bitumen roofing sheets
IS 12866	Specification for plastic translucent sheets made from thermosetting polyester resin (glass fibre reinforced)
IS 13317	Specification for clay roofing camty tiles, half round and flat tiles

f) Wall covering / finishing

Std: No.	Title
ASTM C 34	Specification for structural clay load-bearing wall tile
ASTM C 52	Specification for gypsum partition tile or block
ASTM C 56	Specification for structural clay non-load bearing tile
ASTM C 126	Specification for ceramic glazed structural clay facing tile
IS 15418	Specification for finished wall papers, wall vinyl and plastic wall coverings in roll form

6.5.2.10 Glass

Std: No.	Title
ASTM C 1036	Specification for flat transparent sheet glass
ASTMC 1172	Specification for safety glass
ASTM C 1369	Standard Specification for Secondary Edge Sealants for Structurally Glazed Insulating Glass Units
ASTM C 1503	Specification for silvered glass mirrors for general purposes
ASTM E 773	Test method for accelerated weathering of insulating glass units
ASTM E 774	Specification for classification of the durability of sealed insulating glass units
ASTM E 1300	Determining load resistance of glass in buildings
ASTM E 2188	Standard test method for insulating glass performance
ASTM E 2189	Standard test method for testing resistance to fogging in insulating glass units
ASTM F 1642	Standard test method for glazing and glazing systems subject to air blast loadings
IS 5437	Specification for figured rolled and wired glass
IS 14900	Specification for transparent float glass

6.5.2.11 Gypsum Board and Plaster

Std: No.	Title
ASTM C 22	Standard specification for gypsum
ASTM C28/C28M	Standard specification for gypsum plasters
ASTM C 36	Gypsum wallboard
ASTM C 37	Gypsum lath
ASTM C 59	Gypsum casting and moulding plaster
ASTM C 61	Gypsum Keene's cement
ASTM C 79	Gypsum sheathing
ASTM C 442	Gypsum backing board and gypsum shaft liner board
ASTM C 473	Method of tests for gypsum and gypsum products
ASTM C 557	Adhesives for fastening gypsum wall board
ASTM C 587	Gypsum veneer plaster
ASTM C 588	Gypsum base for veneer plasters
ASTM C 630	Water resistant gypsum backing board
ASTM C 631	Interior bonding compounds, gypsum
ASTM C 645	Non-load bearing steel studs
ASTM C 931	Exterior soffit boards

ASTM C 932	Exterior plaster bonding compounds
ASTM C 955	Load bearing steel studs
ASTM C 960	Predecorated gypsum board
ASTM C 1002	Steel screws
ASTM C 1047	Accessories for gypsum board
ASTM C 1177	Glass mat gypsum substrate
ASTM C 1178	Glass mat gypsum backing panel
ASTM C 1278	Fibre reinforced gypsum panels
ASTM C 1395	Gypsum ceiling board
ASTM C 1396	Standard specification for gypsum board
ASTM F 547	Joint reinforcing tape and compound
ASTM F 1667	Nails for gypsum board

6.5.2.12 Paints and Allied Products

a) Specifications for water based paints and pigments

Std: No.	Title
ASTM D 3726	Standard guide for painting inspectors
IS 427	Specification for distemper, dry, colour as required
IS 428	Specification for distemper, washable
IS 5410	Specification for cement paint, colour as required
IS 5411	Specification for plastic emulsion paint:
Part-1	For interior use
Part -2	For exterior use

b) Ready mixed paints, enamels and powder coatings

Std: No	Title
ASTM D 5382	Specification for powder coatings
IS 101	Methods of sampling and test for paints, varnishes and related products
Part -1/ Sec 1	Test on liquid paints (general and physical), Section 1 sampling
Part 1/Sec 2	Test on liquid paints (general and physical), Section 2 Preliminary examination and preparation of samples for testing
Part 1/Sec 3	Test on liquid paints (general and physical) section 3 preparation of panels
Part 1/Sec 4	Test on liquid paints (general and physical), Section 4 Brushing test
Part -1/Sec 5	Test on liquid paints (general and physical), Section 5 Consistency
Part 1/Sec 6	Test on liquid paints (general and physical), Section 6 Flash point

Part 1/Sec 7	Test on liquid paints (general and physical), Section 7 Mass per 10 litres
Part 2/ Sec 1	Test on liquid paints (chemical and examination), Section 1 Water content
Part 2/ Sec 2	Test on liquid paints (chemical examination), Section 2 Volatile matter
Part 3/Sec 1	Tests on paint film formation, Section 1 Drying time
Part 3/Sec 2	Tests on paint film formation, Section 2 Film thickness
Part 3/ Sec 4	Tests on paint film formation, Section 4 Finish
Part 3/Sec 5	Tests on paint film formation, Section 5 Fineness of grind
Part 4/ Sec 1	Optical test, section 1 opacity
Part 4/Sec 2	Optical test, section 2 colour
Part 4/Sec 3	Optical test, section 3 light fastness test
Part 4/Sec 4	Optical test, Section 4 Gloss
Part 5/Sec 1	Mechanical test on paint films, Section 1 Hardness tests
Part 5/Sec 2	Mechanical test on paint films, Section 2 Flexibility and adhesion
Part 5/Sec 3	Mechanical test on paint films, Section 3 Impact resistance
Part 5/Sec 4	Mechanical test on paint films, Section 4 Print free test
Part 6/Sec 1	Durability tests, section 1 resistance to humidity under conditions of condensation
Part 6/Sec 2	Durability tests, section 2 keeping properties
Part 6/Sec 3	Durability tests, section 3 moisture vapour permeability
Part 6/Sec 4	Durability tests, section 4 degradation of coatings (pictorial aids for evaluation)
Part 6/Sec 5	Durability tests, section 5 accelerated weathering test
Part 7/Sec 1	Environmental tests on paint films, section 1 resistance to water
Part 7/Sec 2	Environmental tests on paint films, section 2 resistance to liquid
Part 7/Sec 3	Environmental tests on paint films, section 3 resistance to heat
Part 7/Sec 4	Environmental tests on paint films, section 4 resistance to bleeding of pigments
Part 8/Sec 1	Tests for pigments and other solids, section 1 residue on sieve
Part 8/Sec 2	Environmental tests on paint films, section 2 pigments and non-volatile matter
Part 8/Sec 3	Environmental tests on paint films, section 3 ash content
Part 8/Sec 4	Environmental tests on paint films, section 4 phthalic anhydride
Part 8/Sec 5	Environmental tests on paint films, section 5 lead restriction test
Part 8/Sec 6	Environmental tests on paint films, section 8 volumes solids
Part 9/Sec 1	Tests for lacquers and varnish, Section 1 acid value
Part 9/Sec 2	Tests for lacquers and varnish, Section 2 rosin test

IS 104	Specification for ready mixed paint, brushing, zinc chrome, priming
IS 109	Specification for ready mixed paint, brushing, priming, plaster to Indian Standard colours No 361
IS 123	Specification for ready mixed paint, brushing, finishing semigloss, for general purposes, to Indian Standard colour No 445, 446, 448, 449, 451 and 473 and red oxide (colour unspecified)
IS 133	Specification for enamel, interior (a) undercoating, (b) finishing
IS 137	Specification for ready mixed paint, brushing, matt or egg-shell flat, finishing, interior, to Indian Standard colour, as required
IS 158	Specification for ready mixed paint, brushing, bituminous, black, lead-free, acid, alkali, and heat resisting
IS 168	Specification for ready mixed paint, air-drying semi-glossy/matt, for general purposes
IS 341	Specification for black Japan, Types A, B and C
IS 2074	Specification for ready mixed paint and air drying red oxide-zinc chrome, priming
IS 2075	Specification for ready mixed paint, stoving, red oxide-zinc chrome, priming
IS 2339	Specification for aluminium paint for general purposes, in dual container
IS 2932	Specification for enamel, synthetic exterior, (a) undercoating, (b) finishing
IS 2933	Specification for enamel, exterior, (a) undercoating (b) finishing
IS 3536	Specification for ready mixed paint, brushing, wood primer
IS 3539	Specification for ready mixed paint, undercoating, for use under oil finishes, to Indian Standards colours, as required
IS 3585	Specification for ready mixed paint, aluminium, brushing, priming, water resistant, for wood work
IS 3678	Specification for ready mixed paint, thick white, for lettering
IS 8662	Specification for enamel, synthetic, exterior (a) undercoating, (b) finishing, for railway coaches
IS 11883	Specification for ready mixed paint, brushing, red oxide, priming for metals
IS 13183	Specification for aluminum paints, heat resistant
IS 13213	Specification for polyurethane full gloss enamel (two pack)

c) Thinners and solvents

Std: No	Title
ASTM D 13	Specification for gum spirit of turpentine (oil of turpentine)
IS 324	Specification for ordinary denatured spirit
IS 14314	Specification for thinner general purposes for synthetic paints and varnishes
IS 82	Methods of sampling and test for thinners and solvents for paints

d) Varnishes and lacquers

Std: No	Title
IS 337	Specification for varnish, finishing, interior
IS 347	Specification for varnish, shellac, for general purposes
IS 348	Specification for French polish
IS 524	Specification for varnish, finishing, exterior, synthetic
IS 525	Specification for varnish, finishing, exterior and general purposes
IS 642	Specification for varnish medium for aluminium paint

6.5.2.13 Polymers, Plastic and Geosynthetics/Geotextiles

Std: No.	Title
IS 1998	Methods of test for thermosetting synthetic resin bonded laminated sheets
IS 2036	Specification for phenolic laminated sheets
IS 2046	Specification for decorative thermosetting synthetics resin bonded laminated sheets
IS 2076	Specification for unsupported flexible vinyl film and sheeting
IS 2508	Specification for low density polyethylene films
IS 6307	Specification for rigid PVC sheets
IS 9766	Specification for flexible PVC compound
IS 10889	Specification for high density polyethylene films
IS 12830	Specification for rubber based adhesives for fixing PVC tiles to cement
IS 13162	Methods of test for geotextiles
ASTM D 4354	Sampling and preparation of test specimen of geotextiles
ASTM D 4355	Determination of resistance to exposure of ultra-violet light and water (Xenon arc type apparatus)
ASTM D 4491	Method of test for determination of water permeability-permittivity – geotextiles
ASTM D 4533	Method of test for trapezoid tearing – geotextiles
ASTM D 4595	Determination of tensile properties using a wide width strip
ASTM D 4751	Method of determination of apparent opening size by dry sieving technique – geotextiles
ASTM D 4833	Determination of puncture resistance by falling cone method
ASTM D 4886	Determination of abrasion resistance of geotextiles
ASTM D 5199	Determination of thickness at specified pressure
ASTM D 5261	Determination of mass per unit area of geotextiles
ASTM D 5262	Methods for determination of creep of geotextiles

ASTM D 5321	Method of test for the evaluation of interface friction between geosynthetics and soil (Part -1) modified direct shear test
IS 13262	Specification for pressure sensitive adhesive tapes with plastic base
IS 13325	Method of test for the determination to tensile properties of extruded polymer geogrids using the wide strip
IS 14182	Specification for solvent cement for use with unplasticized polyvinylchloride plastic pipe and fittings
IS 14443	Specification for polycarbonate sheets
IS 14643	Specification for unsintered polyterafluorethy (PTFE) tape for thread sealing applications
IS 14715	Specification for woven jute geotextiles
IS 14753	Specification for poly (methyl) methacrylate (PMMA) (Acrylic) sheets
IS 14986	Jute geo-grid for rain water erosion control in road and railway embankments and hill slopes
IS 15060	Tensile test for joint/seams by wide width method of geotextiles

6.5.2.14 Sanitary Appliances and Water Fittings

Std: No.	Title
IS 404	Specification for lead pipes: part 1 for other than chemical purposes
IS 458	Specification for precast concrete pipes (with and without reinforcement)
IS 651	Specification for salt glazed stoneware pipes and fittings
IS 748	Specification for prestressed concrete pipes (including specials
IS 771	Specification for glazed fire-clay sanitary appliances:
Part 1	General requirements
Part 2	Specification requirements of kitchen and laboratory sinks
Part 3	Specification requirements of urinals, Section 1 slab urinals
Part 3/sec 2	Specification requirements of urinals, Section 2 stall urinals Part 4 Specification requirements of postmortom slabs
Part 5	Specific requirements of shower trays
Part 6	Specific requirements of bed-pan sinks
Part 7	Specific requirements of slop sinks
IS 772	Specification for general requirements for enamelled cast iron sanitary appliances
IS 773	Specification for enamelled cast iron water-closets railway coaching stock type
IS 774	Specification for flushing cistern for water-closets and urinals (other than plastic cistern)

IS 775	Specification for cast iron brackets and supports for washbasins and sinks
IS 782	Specification for caulking lead
IS 783	Code of practice for laying of concrete pipes
IS 804	Specification for rectangular pressed steel tanks
IS 1276	Specification for cast iron manholes covers and frames
IS 1536	Specification for centrifugally cast (spun) iron pressure pipes for water, gas and sewage
IS 1537	Specification for vertically cast iron pressure pipes for water, gas and sewage
IS 1538	Specification for cast iron fittings for pressure pipes for water, gas and sewage
IS 1592	Specification for asbestos cement pressure pipes and joints
IS 1626	Specification for asbestos cement building pipes and pipe fittings, gutter fittings, and roofing fittings
Part 1	Pipes and pipe fittings
Part 2	Gutters and gutter fittings
Part 3	Roofing accessories
IS 1700	Specification for drinking fountains
IS 1729	Specification for cast iron ductile iron drainage pipes and pipe fittings for grand non-pressure pipe line socket and spigot series
IS 1916	Specification for steel cylinder with concrete lining and coating
IS 2041	Specification for steel plates for pressure vessels used at moderate and low temperature
IS 2065	Code of practice for water supply in buildings
IS 2082	Stationary storage type electric water heaters
IS 2326	Specification for automatic flushing cisterns for urinals
IS 2470	Code of practice for installation of septic tanks
IS 2548	Specification for plastic seats and covers for water-closets:
Part 1	Thermoset seats and covers
Part 2	Thermo plastic seats and covers
IS 2556	Specification for vitreous sanitary appliances
Part 1	General requirements
Part 2	Specific requirements of wash-down water-closets
Part 3	Specific requirements of squatting pans
Part 4	Specific requirements of wash basins
Part 5	Specific requirements of laboratory sinks
Part 6	Specific requirements of urinals and partition plates

Part 7	Specific requirements of accessories for sanitary appliances
Part 8	Specific requirements of siphonic wash-down water-closets
Part 9	Specific requirements of bidets
Part 14	Specific requirements of integrated squatting pans
Part 15	Specific requirements of universal water-closets
Part 16	Specific requirements for wash-down wall mounted water-closets
Part 17	Specific requirements for wall mounted bedits
IS 2692	Specification for ferrules for water services
IS 3006	Specification for chemically resistant salt glazed stone wear pipes and fittings
IS 3076	Specification for low density polyethylene pipes for potable water supplies
IS 3114	Code of practice for laying of cast iron pipes
IS 3489	Specification for enameled steel bath tubs
IS 3989	Specification for centrifugally cast (spun) spigot and socket-soil, waste and ventilating pipes and fittings and accessories
IS 4111	Code of practice for ancillary structures in sewerage system: Part 1 Manholes
IS 4350	Specification for concrete porous pipes for under drainage
IS 4984	Specification for high density polyethylene pipes for potable water supplies
IS 4985	Specification for unplasticized PVC pipes for potable water supplies
IS 5455	Specification for cast iron steps for manholes
IS 6295	Code of practice for water supply and drainage in high altitudes and/or sub-zero temperature regions
IS 6411	Specification for gel-coated glass fiber reinforced polyester resin bath tubs
IS 6530	Code of practice for laying of asbestos cement pressure pipes
IS 6784	Method for performance testing of water meters (domestic type)
IS 6908	Specification for asbestos cement pipes and fittings for sewerage and drainage
IS 7181	Specification for horizontally cast iron double flanged pipes for water, gas and sewage
IS 7231	Specification for plastic flushing cisterns for water-closets and urinals
IS 7319	Specification for perforated concrete pipes
IS 8718	Specification for vitreous enameled steel kitchen sinks
IS 8727	Specification for vitreous enameled steel washbasins
IS 8931	Specification for copper alloy fancy single taps, combination tap assembly and stop valves for water services
IS 9076	Specification for vitreous integrated squatting pans for marine use

IS 9140	Method of sampling of vitreous and fire clay sanitary appliances
IS 9338	Specification for cast iron screw-down stop valves and stop and check valves for water works purposes
IS 9739	Specification for pressure reducing valves for domestic water supply systems
IS 9758	Specification for flush valves and fittings for water closets and urinals
IS 11246	Specification for glass fibre reinforced polyester resins (GRP) squatting pans
IS 12592	Specification for precast concrete manhole covers and frame
IS 13114	Specification for forged brass gate, globe and check valves for water works purposes
IS 13592	Specification for UPVC pipes for soil and waste discharge systems inside buildings including ventilation and rainwater system
IS 13983	Specification for stainless steel sinks for domestic purposes
IS 14333	Specification for high density polyethylene pipe for sewerage
IS 14735	Specification for unplasticized polyvinyl chloride (UPVC) injection moulded fittings for soil and waste discharge system for inside and outside buildings including ventilation and rain water system
IS 14961	Guidelines for rain water harvesting in hilly areas by roof water collection system

6.5.2.15 Stones

a) Specifications

Std: No.	Title
ASTM C110	Specification for limestone (slabs and tiles)
ASTMC 530	Specification for marble (blocks, slabs and tiles)
ASTMC 615	Specification for structural granite
ASTM C 1364	Standard specification for architectural cast stone
IS 3620	Specification for latrite stone block for masonry
IS 3622	Specification for sand stones (slabs and tiles)
IS 9394	Specification for stone lintels

b) Methods of testing

Std: No.	Title
ASTM C 97	Test Method for absorption of dimension stone
ASTM C99/C99M	Test method for modulus of rupture of dimension stone
ASTM C110	Test methods for physical testing of quicklime, hydrated lime, and limestone
ASTM C170/C170M	Test method for compressive strength of dimension stone

ASTM C 241	Test for determination of resistance to wear by abrasion of natural building stones
ASTM C 880	Standard test method for flexural strength of dimension stone
ASTM C 1195	Test for determination of water absorption, apparent specific gravity and porosity of natural building stones
IS 1121	Tests for determination of strength properties of natural building stones <ul style="list-style-type: none"> - Transverse strength - Tensile strength - Shear strength
IS 1122	Test for determination of true specific gravity of natural building stones
IS 1123	Methods of identification of natural building stones
IS 1125	Test for determination of weathering of natural building stones
IS 1126	Test for determination of durability of natural building stones
IS 1200	Methods of measurements of building and civil engineering works stone masonry
IS 4121	Test for determination of water transmission rate by capillary action through natural building stones
IS 4122	Test for surface softening of natural building stones by exposure to acidic atmosphere
IS 5218	Test for toughness of natural building stones
IS 43478	Test for determination of permeability of natural building stones

6.5.2.16 Structural Steel

Std: No.	Title
ASTM A 36	Specification for structural steel plates
ASTM A 82	Specification for plain wire concrete reinforcement
ASTM A 123	Specification for hot-dipped galvanized coatings on round steel wire
ASTM A 194,	Specification for carbon and alloy steel nuts for bolts for high pressure and high temperature service
ASTM A 242	Specification for high strength low alloy structural steel
ASTM A 276	Specification for stainless steel bars and shapes
ASTM A 283	Specification for low and intermediate tensile strength carbon steel plates
ASTM A 320	Specification for alloy steel bolting materials for low-temperature service
ASTM A 325/A325M	Specification for low tensile structural steels
ASTM A 370	Mechanical testing of steels
ASTM A 423/A423M	Specification for steel tubes for structural purposes

ASTM A 492	Specification for round steel wire for ropes
ASTM A 496 M	Specification for high strength deformed steel bars and wires for concrete reinforcement
ASTM A 510	Specification for general requirements for wire rods, coarse round wire and carbon steel wire
ASTM A 526	Specification for continuously pre-painted galvanized steel sheets and coils
ASTM A 555/A555M	Stainless steel wire rods
ASTM A 563	Specification for carbon and alloy steel nuts
ASTM A 568/A568M	Standard Specification for steel, sheet, carbon, structural, and high-strength, low-Alloy, hot-rolled and cold-rolled, general requirement
ASTM A 572	Specification for high strength, low-alloy steel
ASTM A 580/A580M	Specification for stainless steel wire
ASTM A 653	Specification for galvanized steel sheets
ASTM A 666	Specification for stainless steel plate, sheet, strip and flat bar
ASTM A 722	Specification for high tensile steel bars used in prestressed concrete
ASTM A 759/A759M	Specification for fire resistant steel
ASTM A 775 / A775M	Standard Specification for epoxy-coated steel reinforcing bars
ASTM A 852/A852M	Specification for structural weather resistant steels
ASTM A 992/A992M	Specification for structural steel shapes
ASTM A 1267	Specification for expanded metal steel sheets for general purposes
ASTM F 436	Specification for hardened steel washers
IS 432	Specification for hollow mild steel sections for structural use
IS 1148	Specification for hot- rolled steel rivet bars (up to 40 mm diameter)for structural purposes
IS 1363	Specification for hexagonal wire netting for general purposes
IS 2502	Code of practice for bending and fixing of bars for concrete reinforcement
IS 8081	Specification for slotted sections

6.5.2.17 Thermal Insulation Materials

Std: No.	Title
ASTM C 163	Practice for mixing thermal insulating cement samples
ASTM C 165	Test method for measuring compressive properties of thermal insulations
ASTM C 166	Test method for covering capacity and volume change upon drying of thermal insulating cement
ASTM C 195	Specification for mineral fiber thermal insulating cement

ASTM C 196	Specification for expanded or exfoliated vermiculite thermal insulating cement
ASTM C 578	Specification for rigid, cellular polystyrene thermal insulation
IS 3677	Specification for unbonded rock and slag wool for thermal insulation
IS 4671	Specification for expanded polystyrene for thermal insulation purposes
IS 6598	Specification for cellular concrete for thermal insulation
IS 7509	Specification for thermal insulating cement
IS 8154	Specification for performed calcium silicate insulation for temperature up to 650°C
IS 8183	Specification for bonded mineral wool
IS 9403	Method of test for thermal conductance and transmittance of built up sections by means of guarded hot box
IS 9489	Method of test for thermal conductivity of materials by means of heat flow meter
IS 9490	Method of determination for thermal conductivity of insulation materials (water calorimeter method)
IS 9742	Specification for sprayed mineral wool thermal insulation
IS 9743	Specification for thermal insulation finishing cements
IS 9842	Specification for preformed fibrous pipe insulation
IS 3144	Method of test for material wool thermal insulation material
IS 11128	Specification for spray applied hydrated calcium silicate thermal insulation
IS 11129	Method of test for tumbling friability of preformed block-type thermal insulation
IS 11239	Method of test for rigid cellular thermal insulation materials
Part-1	Dimensions
Part -2	Apparent density
Part -3	Dimensional stability
Part -4	Water vapour transmission rate
Part -5	Volume percent of open and closed cells
Part -6	Heat distortion temperature
Part -7	Coefficient of linear thermal expansion at low temperatures
Part -8	Flame height, time of burning and loss of mass
Part – 9	Water absorption
Part – 10	Flexural strength
Part -11	Compressive strength
Part -12	Horizontal burning characteristics

Part -13	Determination of flammability by oxygen index
IS 11307	Specification for cellular glass block and pipe thermal insulating
IS 11308	Specification for thermal insulating castables (hydraulic setting) for temperature up to 250°C
IS 12436	Specification for preformed rigid polyurethane (PUR) and polyisocyanurate (Pir) foams for thermal insulation
IS 13204	Specification for rigid phenolic foams for thermal insulation
IS 13286	Method of test for surface spread of flame for thermal insulation materials

6.5.2.18 Wood Based Materials

Std: No.	Title
ASTM D 9	Terminology relating to wood
ASTM D 25	Specification for round timber piles
ASTM D 38	Test methods for sampling wood preservatives prior to testing
ASTM D 143	Test methods for small clear specimens of timber
ASTM D 198	Test methods of static tests of lumber in structural sizes
ASTM D 245	Practice for establishing structural grades and related allowable properties for visually graded lumber
ASTM D 246	Test method for distillation of creosote and creosote-coal tar solutions
ASTM D 370	Practice for dehydration of oil-type preservatives
ASTM D 390	Specification for coal-tar creosote for the preservative treatment of piles, poles, and timbers for marine, land, and freshwater use
ASTM D1036	Test methods of static tests of wood poles
ASTM D 1037	Test methods for evaluating properties of wood-base fiber and particle panel materials
ASTM D 1038	Terminology relating to veneer and plywood
ASTM D 1110	Test methods for water solubility of wood
ASTM D 1165	Nomenclature of domestic hardwoods and softwoods
ASTM D 1166	Test method for methoxyl groups in wood and related materials
ASTM D 1554	Terminology relating to wood-base fiber and particle panel materials
ASTM D 1666	Test methods for conducting machining tests of wood and wood-base materials
ASTM D 1760	Specification for pressure treatment of timber products
ASTM D 1761	Test methods for mechanical fasteners in wood
ASTM D 1990	Practice for establishing allowable properties for visually-graded dimension lumber from in-grade tests of full-size specimens
ASTM D 2017	Method of accelerated laboratory test of natural decay resistance of woods

ASTM D 2164	Methods of testing structural insulating roof deck
ASTM D 2394	Methods for simulated service testing of wood and wood-base finish flooring
ASTM D 2395	Test methods for specific gravity of wood and wood-based materials
ASTM D 2481	Test method for accelerated evaluation of wood preservatives for marine services by means of small size specimens
ASTM D 2719	Test methods for structural panels in shear through-the-thickness
ASTM D 2898	Test methods for accelerated weathering of fire-retardant-treated wood for fire testing
ASTM D 2899	Practice for establishing allowable stresses for round timber piles
ASTM D 2915	Practice for evaluating allowable properties for grades of structural lumber
ASTM D 3043	Test methods for structural panels in flexure
ASTM D 3044	Test method for shear modulus of wood-based structural panels
ASTM D 3200	Specification and test method for establishing recommended design stresses for round timber construction poles
ASTM D 3499	Test method for toughness of wood-based structural panels
ASTM D 3500	Test methods for structural panels in tension
ASTM D 3501	Test methods for wood-based structural panels in compression
ASTM D 3737	Practice for establishing allowable properties for structural glued laminated timber (glulam)
ASTM D 4442	Test methods for direct moisture content measurement of wood and wood-base materials
ASTM D 4444	Test methods for use and calibration of hand-held moisture meters
ASTM D 4761	Test methods for mechanical properties of lumber and wood-base structural material
ASTM D 4933	Guide for moisture conditioning of wood and wood-based materials
ASTM D 5456	Specification for evaluation of structural composite lumber products
ASTM D 5516	Test method for evaluating the flexural properties of fire-retardant treated softwood plywood exposed to elevated temperatures
ASTM D 5536	Practice for sampling forest trees for determination of clear wood properties
ASTM D 5651	Test method for surface bond strength of wood-base fiber and particle panel materials
ASTM D 6815	Specification for evaluation of duration of load and creep effects of wood and wood-based products
IS 1708	
Part 3	Determination of volumetric shrinkage
Part 4	Determination of radial and tangential shrinkage and fibre situation point
Part 5	Determination of static bending strength

Part 6	Determination of static bending strength under two point loading
Part 7	Determination of impact bending strength
Part 8	Determination of compressive strength parallel to grain
Part 9	Determination of compressive strength perpendicular to grain
Part 10	Determination of hardness under static indentation
Part 11	Determination of shear strength parallel to grain
Part 12	Determination of tensile strength parallel to grain
Part 13	Determination of tensile strength perpendicular to grain
Part 15	Determination of nail and screw holding power
Part 18	Determination of torsional strength

6.5.2.19 Welding Electrodes and Wires

Std: No.	Title
IS 814	Specification for covered electrodes for manual metal arc welding of carbon and carbon manganese steel
IS 1278	Specification for filler rods and wires for gas welding
IS 1395	Specification for low and medium alloy steel covered electrodes for manual metal arc welding
IS 2879	Mild steel for metal arc welding electrodes
IS 3613	Acceptance tests for wire flux combinations for submerged arc welding of structural steel
IS 4972	Specification for resistance spot welding electrodes
IS 5206	Covered electrodes for manual arc welding of stainless steel and other similar high alloy steel
IS 5511	Specification for covered electrodes for manual arc welding cast iron
IS 5897	Specification for aluminium and aluminium alloy welding rods and wires and magnesium alloy welding rods
IS 5898	Specification for copper and copper alloy bare solid welding rods and electrodes
IS 6419	Specification for welding rods and bare electrodes for gas shielded arc welding of structural steel
IS 7280	Specification for bare wire electrodes for submerged arc welding of structural steel
IS 8363	Specification for bare wire electrodes for electroslog welding of steels
IS 10631	Stainless for welding electrode core wire

6.5.2.20 Wire Ropes and Wire Products

Std: No.	Title
IS 278	Specification for galvanized steel barbed wire for fencing
IS 2140	Specification for stranded galvanized steel wire for fencing
IS 2266	Specification for steel wire ropes for general engineering purposes
IS 2365	Specification for steel wire suspension ropes for lifts, elevators and hoists
IS 2721	Specification for galvanized steel wire chain link fences fabric
IS 6594	Specification for technical supply condition for wire ropes and strands
IS 12776	Specification for galvanized strand for earthing