

SECTION H — ELECTRICITY

H01 BASIC ELECTRIC ELEMENTS

H01B CABLES; CONDUCTORS; INSULATORS; SELECTION OF MATERIALS FOR THEIR CONDUCTIVE, INSULATING, OR DIELECTRIC PROPERTIES (selection for magnetic properties H01F 1/00; waveguides H01P; installation of cables or lines, or of combined optical and electric, cables or lines H02G)

Subclass index

CONDUCTORS OR CABLES

Characterised by the material.....	1/00
Characterised by the construction.....	5/00, 7/00
Special types for: communication; power; superconductive cables.....	11/00, 9/00, 12/00
Manufacture; salvaging.....	13/00, 15/00

INSULATORS OR INSULATING BODIES

Characterised by the material.....	3/00
Characterised by the construction.....	17/00
Manufacture.....	19/00

1/00 Conductors or conductive bodies characterised by the conductive materials; Selection of materials as conductors (superconductive or hyperconductive conductors, cables, or transmission lines characterised by the materials H01B 12/00; resistors H01C; details of devices using superconductivity or hyperconductivity, characterised by the material H01L 39/12) [4]	3/08	• • quartz; glass; glass wool; slag wool; vitreous enamels
Note(s) Groups H01B 1/14-H01B 1/24 take precedence over groups H01B 1/02-H01B 1/06.	3/10	• • metallic oxides (ceramics H01B 3/12)
1/02 • mainly consisting of metals or alloys	3/12	• • ceramics
1/04 • mainly consisting of carbon-silicon compounds, carbon, or silicon	3/14	• • cements
1/06 • mainly consisting of other non-metallic substances	3/16	• • gases
1/08 • • oxides	3/18	• mainly consisting of organic substances
1/10 • • sulfides	3/20	• • liquids, e.g. oils (silicone oils H01B 3/46)
1/12 • • organic substances [3]	3/22	• • • hydrocarbons
1/14 • Conductive material dispersed in non-conductive inorganic material [3]	3/24	• • • containing halogen in the molecules, e.g. halogenated oils
1/16 • • the conductive material comprising metals or alloys [3]	3/26	• • asphalts; bitumens; pitches
1/18 • • the conductive material comprising carbon-silicon compounds, carbon, or silicon [3]	3/28	• • natural or synthetic rubbers
1/20 • Conductive material dispersed in non-conductive organic material [3]	3/30	• • plastics; resins; waxes
1/22 • • the conductive material comprising metals or alloys [3]		Note(s) [2006.01] Group H01B 3/47 takes precedence over groups H01B 3/32-H01B 3/46.
1/24 • • the conductive material comprising carbon-silicon compounds, carbon, or silicon [3]	3/32	• • • natural resins
3/00 Insulators or insulating bodies characterised by the insulating materials; Selection of materials for their insulating or dielectric properties (selection of piezo-electric or electrostrictive materials H01L 41/00)	3/34	• • • waxes (silicone waxes H01B 3/46)
3/02 • mainly consisting of inorganic substances	3/36	• • • condensation products of phenols with aldehydes or ketones
3/04 • • mica	3/38	• • • condensation products of aldehydes with amines or amides
3/06 • • asbestos	3/40	• • • epoxy resins
	3/42	• • • polyesters; polyethers; polyacetals
	3/44	• • • vinyl resins; acrylic resins (silicones H01B 3/46)
	3/46	• • • silicones
	3/47	• • • fibre-reinforced plastics, e.g. glass-reinforced plastics [2006.01]
	3/48	• • fibrous materials (fibre-reinforced plastics H01B 3/47) [1, 2006.01]
	3/50	• • • fabric
	3/52	• • • wood; paper; pressboard (insulating paper <u>per se</u> D21H 27/12)
	3/54	• • • hard paper; hard fabrics

H01B

- 3/56 • • gases

Note(s)

Group H01B 12/00 takes precedence over groups H01B 5/00-H01B 11/00.

5/00 Non-insulated conductors or conductive bodies characterised by their form

- 5/02 • Single bars, rods, wires or strips; Bus-bars (aspects of connection with their counterparts H01R 25/00; bus-bar layouts H02B 1/20; installations of bus-bars H02G 5/00) [1, 7]
- 5/04 • • wound or coiled
- 5/06 • Single tubes
- 5/08 • Several wires or the like stranded in the form of a rope
- 5/10 • • stranded around a space, insulating material, or dissimilar conducting material
- 5/12 • Braided wires or the like
- 5/14 • comprising conductive layers or films on insulating-supports (insulating-layers or insulating-films on metal bodies H01B 17/62)
- 5/16 • comprising conductive material in insulating or poorly conductive material, e.g. conductive rubber (H01B 1/14, H01B 1/20 take precedence; insulating bodies with conductive admixtures H01B 17/64; conductive paints C09D 5/24) [3]

7/00 Insulated conductors or cables characterised by their form

- 7/02 • Disposition of insulation (materials H01B 3/00; insulators H01B 17/00)
- 7/04 • Flexible cables, conductors, or cords, e.g. trailing cables
- 7/06 • Extensible conductors or cables, e.g. self-coiling cords (arrangements for storing and repeatedly paying-out and re-storing lengths of conductors or cables B65H 75/34)
- 7/08 • Flat or ribbon cables
- 7/10 • Contact cables, i.e. having conductors which may be brought into contact by distortion of the cable
- 7/12 • Floating cables (installations of cables supported on or from floats H02G 9/12)
- 7/14 • Submarine cables
- 7/16 • Rigid-tube cables (heating elements of similar construction H05B)
- 7/17 • Protection against damage caused by external factors, e.g. sheaths or armouring (power cables with screens H01B 9/02; communication cables with screens H01B 11/06; installation of conduits H02G) [7]
- 7/18 • • by wear, mechanical force or pressure [1, 7]
- 7/20 • • • Metal tubes, e.g. lead sheaths [1, 7]
- 7/22 • • • Metal wires or tapes, e.g. made of steel [1, 7]
- 7/24 • • • Devices affording localised protection against mechanical force or pressure [1, 7]
- 7/26 • • • Reduction of losses in sheaths or armouring [1, 7]
- 7/28 • • by moisture, corrosion, chemical attack or weather [1, 7]
- 7/282 • • • Preventing penetration of fluid into conductor or cable (insulators or insulating bodies with surfaces specially treated for preserving insulating properties, e.g. for protection against moisture, dirt, or the like, H01B 17/50) [7]
- 7/285 • • • • by completely or partially filling interstices in the cable [7]
- 7/288 • • • • using hygroscopic material or material swelling in the presence of liquid [7]

- 7/29 • • by extremes of temperature or by flame (H01B 7/42 takes precedence) [7]
- 7/295 • • • using material resistant to flame [7]
- 7/30 • with arrangements for reducing conductor losses when carrying ac, e.g. due to skin effect
- 7/32 • with arrangements for indicating defects, e.g. breaks, leaks (locating defects by measuring G01)
- 7/36 • with distinguishing or length marks
- 7/38 • with arrangements for facilitating removal of insulation [7]
- 7/40 • with arrangements for facilitating mounting or securing [7]
- 7/42 • with arrangements for heat dissipation or conduction (insulators or insulating bodies having heating or cooling devices H01B 17/54) [7]

9/00 Power cables

- 9/02 • with screens or conductive layers, e.g. for avoiding large potential gradients
- 9/04 • Concentric cables
- 9/06 • Gas-pressure cables; Oil-pressure cables; Cables for use in conduits under fluid pressure

11/00 Communication cables or conductors (waveguides H01P)

- 11/02 • Cables with twisted pairs or quads (transposing, crossing, or twisting at joints H04B; balancing of earth capacitance H04B)
- 11/04 • • with pairs or quads mutually positioned to reduce cross-talk (balancing by making use of additional capacitors or coils H04B)
- 11/06 • • with means for reducing effects of electromagnetic or electrostatic disturbances, e.g. screen (screening in general H05K 9/00)
- 11/08 • • • Screens specially adapted for reducing cross-talk
- 11/10 • • • Screens specially adapted for reducing interference from external sources
- 11/12 • • Arrangements for exhibiting specific transmission characteristics (loading coils per se H01F 17/08; coil-loaded circuits H04B)
- 11/14 • • • Continuously inductively loaded cables, e.g. Krarup cables
- 11/16 • • • Cables, e.g. submarine cable, with coils or other devices incorporated during cable manufacture (junction boxes for cables H02G 15/10)
- 11/18 • Coaxial cables; Analogous cables having more than one inner conductor within a common outer conductor (suitable for handling frequencies considerably beyond the audio range H01P 3/06)
- 11/20 • • Cables having a multiplicity of coaxial lines [3]
- 11/22 • Cables including at least one electrical conductor together with optical fibres [4]

12/00 Superconductive or hyperconductive conductors, cables, or transmission lines (superconductors characterised by the ceramic-forming technique or the ceramic composition C04B 35/00; details or devices using superconductivity or hyperconductivity characterised by the material H01L 39/12) [2, 4]

- 12/02 • characterised by their form [4]

Note(s)

Group H01B 12/12 takes precedence over groups H01B 12/04-H01B 12/10.

- 12/04 • • Single wire [4]
- 12/06 • • Films or wires on bases or cores [4]
- 12/08 • • Stranded or braided wires [4]

- 12/10 • • Multi-filaments embedded in normal conductors [4]
- 12/12 • • Hollow conductors [4]
- 12/14 • characterised by the disposition of thermal insulation [4]
- 12/16 • characterised by cooling [4]
- 13/00 Apparatus or processes specially adapted for manufacturing conductors or cables**
- 13/004 • for manufacturing rigid-tube cables [7]
- 13/008 • for manufacturing extensible conductors or cables [7]
- 13/012 • for manufacturing wire harnesses [7]
- 13/016 • for manufacturing co-axial cables (applying discontinuous insulation H01B 13/20) [7]
- 13/02 • Stranding-up (stranding-up ropes D07B)
- 13/04 • • Mutually-positioning pairs or quads to reduce cross-talk
- 13/06 • Insulating conductors or cables (H01B 13/32 takes precedence) [4]
- 13/08 • • by winding
- 13/10 • • by longitudinal lapping
- 13/12 • • by applying loose fibres
- 13/14 • • by extrusion
- 13/16 • • by passing through, or dipping in, a liquid bath; by spraying
- 13/18 • • Applying discontinuous insulation, e.g. discs, beads
- 13/20 • • • for concentric or coaxial cables
- 13/22 • Sheathing; Armouring; Screening; Applying other protective layers (H01B 13/32 takes precedence) [4]
- 13/24 • • by extrusion
- 13/26 • • by winding, braiding, or longitudinal lapping (winding in general B65H)
- 13/28 • Applying continuous inductive loading, e.g. Krarup loading
- 13/30 • Drying (in general F26B); Impregnating (H01B 13/32 takes precedence) [4]
- 13/32 • Filling or coating with impervious material (for cable installations H02G 15/00) [4]
- 13/34 • for marking conductors or cables [7]
- 15/00 Apparatus or processes for salvaging material from cables** (insulated conductors or cables with arrangements for facilitating removal of insulation H01B 7/38; methods or apparatus specially adapted for removing insulation from conductors H02G 1/12)
- 17/00 Insulators or insulating bodies characterised by their form** (section insulators for electric traction B60M 1/18; insulating rail-joints E01B 11/54)
- 17/02 • Suspension insulators; Strain insulators
- 17/04 • • Chains; Multiple chains
- 17/06 • • Fastening of insulator to support, to conductor, or to adjoining insulator
- 17/08 • • • by cap-and-bolt
- 17/10 • • • by intermediate link
- 17/12 • • Special features of strain insulators (devices for relieving mechanical tension of electric lines or cables H02G 7/04)
- 17/14 • Supporting insulators (pin insulators H01B 17/20; apertured insulators H01B 17/24)
- 17/16 • • Fastening of insulators to support, to conductor, or to adjoining insulator
- 17/18 • • for very heavy conductors, e.g. bus-bars, rails
- 17/20 • Pin insulators
- 17/22 • • Fastening of conductors to insulator
- 17/24 • Insulators apertured for fixing by nail, screw, wire, or bar, e.g. diabolos, bobbin
- 17/26 • Lead-in insulators; Lead-through insulators
- 17/28 • • Capacitor type (capacitors H01G)
- 17/30 • • Sealing (packings in general F16J)
- 17/32 • Single insulators consisting of two or more dissimilar insulating bodies
- 17/34 • Insulators containing liquid, e.g. oil
- 17/36 • Insulators having evacuated or gas-filled spaces
- 17/38 • Fittings, e.g. caps; Fastenings therefor
- 17/40 • • Cementless fittings
- 17/42 • Means for obtaining improved distribution of voltage (capacitor-type lead-through insulators H01B 17/28); Protection against arc discharges
- 17/44 • • Structural association of insulators with corona rings (corona rings H01T 19/02)
- 17/46 • • Means for providing an external arc-discharge path (spark-gap arresters H01T)
- 17/48 • • over chains or other serially-arranged insulators
- 17/50 • with surfaces specially treated for preserving insulating properties, e.g. for protection against moisture, dirt, or the like
- 17/52 • having cleaning devices (H01B 17/54 takes precedence)
- 17/54 • having heating or cooling devices
- 17/56 • Insulating bodies
- 17/58 • • Tubes, sleeves, beads, or bobbins through which the conductor passes (protective tubings for the installation of lines or cables in buildings H02G 3/04)
- 17/60 • • Composite insulating bodies (cables or conductors H01B 7/00, H01B 9/00; resistors H01C; capacitors H01G)
- 17/62 • • Insulating-layers or insulating-films on metal bodies (conductive layers or films on insulating bodies H01B 5/14)
- 17/64 • • with conductive admixtures, inserts, or layers (conductive bodies comprising conductive material dispersed in insulating material H01B 5/16)
- 17/66 • • Joining insulating bodies together, e.g. by bonding
- 19/00 Apparatus or processes specially adapted for manufacturing insulators or insulating bodies**
- 19/02 • Drying (in general F26B); Impregnating
- 19/04 • Treating the surfaces, e.g. applying coatings