

CPC**COOPERATIVE PATENT CLASSIFICATION****H01B**

CABLES; CONDUCTORS; INSULATORS; SELECTION OF MATERIALS FOR THEIR CONDUCTIVE, INSULATING OR DIELECTRIC PROPERTIES (selection for magnetic properties [H01F 1/00](#); waveguides [H01P](#); installations of cables or lines [H02G](#); { printed circuits [H05K](#)})

NOTE

Group [H01B 12/00](#) takes precedence over groups [H01B 5/00](#) to [H01B 11/00](#).

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

[H01B 7/17](#) to [H01B 7/295](#) covered by [H01B 7/18](#) to **[H01B7/28D](#)**,
[H01B7/34](#) to **[H01B7/34B3](#)**

H01B 1/00

Conductors or conductive bodies characterised by the conductive materials; Selection of materials as conductors (resistors [H01C](#); selection of materials for superconductivity [H01L 39/00](#))

NOTE

Groups [H01B 1/14](#) to [H01B 1/24](#) take precedence over groups [H01B 1/02](#) to [H01B 1/12](#)

- [H01B 1/02](#) . . . mainly consisting of metals or alloys
- [H01B 1/023](#) . . . {Alloys based on aluminium}
- [H01B 1/026](#) . . . {Alloys based on copper}
- [H01B 1/04](#) . . . mainly consisting of carbon-silicon compounds, carbon or silicon
- [H01B 1/06](#) . . . mainly consisting of other non-metallic substances
- [H01B 1/08](#) . . . oxides
- [H01B 1/10](#) . . . sulfides
- [H01B 1/12](#) . . . Organic substances {(organic macromolecular compounds or compositions [C08](#))}
- [H01B 1/121](#) . . . {Charge-transfer complexes}
- [H01B 1/122](#) . . . {Ionic conductors}
- [H01B 1/124](#) . . . {Intrinsically conductive polymers}
- [H01B 1/125](#) {comprising aliphatic main chains, e.g. polyacetylenes}
- [H01B 1/127](#) {comprising five-membered aromatic rings in the main chain, e.g. polypyrroles, polythiophenes}
- [H01B 1/128](#) {comprising six-membered aromatic rings in the main chain, e.g. polyanilines, polyphenylenes}
- [H01B 1/14](#) . . . Conductive material dispersed in non-conductive inorganic material
- [H01B 1/16](#) . . . the conductive material comprising metals or alloys

- H01B 1/18 .. the conductive material comprising carbon-silicon compounds, carbon or silicon
- H01B 1/20 . Conductive material dispersed in non-conductive organic material [{\(organic macromolecular compounds or compositions C08\)}](#)
- H01B 1/22 .. the conductive material comprising metals or alloys
- H01B 1/24 .. the conductive material comprising carbon-silicon compounds, carbon or silicon

- H01B 3/00** **Insulators or insulating bodies characterised by the insulating materials; Selection of materials for their insulating or dielectric properties** [\(selection of piezo-electric or electrostrictive materials H01L 41/00\)](#)
- H01B 3/002 . [{Inhomogeneous material in general}](#)
- H01B 3/004 .. [{with conductive additives or conductive layers}](#)
- H01B 3/006 .. [{Other inhomogeneous material}](#)
- H01B 3/008 . [{Other insulating material}](#)
- H01B 3/02 . mainly consisting of inorganic substances
- H01B 3/025 .. [{Other inorganic material}](#)
- H01B 3/04 .. mica
- H01B 3/06 .. asbestos
- H01B 3/065 ... [{Wires with asbestos}](#)
- H01B 3/08 .. quartz; glass; glass wool; slag wool; vitreous enamels
- H01B 3/081 ... [{Wires with vitreous enamels}](#)
- H01B 3/082 ... [{Wires with glass or glass wool}](#)
- H01B 3/084 ... [{Glass or glass wool in binder}](#)
- H01B 3/085 ... [{Particles bound with glass}](#)
- H01B 3/087 ... [{Chemical composition of glass}](#)
- H01B 3/088 ... [{Shaping of glass or deposition of glass}](#)
- H01B 3/10 .. Metallic oxides [\(ceramics H01B 3/12\)](#)
- H01B 3/105 ... [{Wires with oxides}](#)
- H01B 3/12 .. ceramics
- H01B 3/14 .. cements
- H01B 3/16 .. gases
- H01B 3/18 . mainly consisting of organic substances [{\(organic macromolecular compounds or compositions C08\)}](#)
- H01B 3/185 .. [{Substances or derivatives of cellulose}](#)
- H01B 3/20 .. Liquids, e.g. oils [\(silicone oils H01B 3/46\)](#)
- H01B 3/22 ... hydrocarbons
- H01B 3/24 ... containing halogen in the molecules, e.g. halogenated oils
- H01B 3/26 .. asphalts; bitumens; pitches
- H01B 3/28 .. natural or synthetic rubber
- H01B 3/30 .. plastics; resins; waxes

NOTE

Group [H01B 3/47](#) takes precedence over groups [H01B 3/32](#) to [H01B 3/46](#)

H01B 3/301	...	{Macromolecular compounds obtained by reactions forming a linkage containing sulfur with or without nitrogen, oxygen or carbon in the main chain of the macromolecule, not provided for in group H01B 3/302 }
H01B 3/302	...	{Polyurethanes or polythiourethanes; Polyurea or polythiourea}
H01B 3/303	...	{Macromolecular compounds obtained by reactions forming a linkage containing nitrogen with or without oxygen or carbon in the main chain of the macromolecule, not provided for in groups H01B 3/38 or H01B 3/302 }
H01B 3/305	....	{Polyamides or polyesteramides}
H01B 3/306	....	{Polyimides or polyesterimides}
H01B 3/307	...	{Other macromolecular compounds}
H01B 3/308	...	{Wires with resins}
H01B 3/32	...	natural resins
H01B 3/34	...	Waxes (silicone waxes H01B 3/46)
H01B 3/36	...	condensation products of phenols with aldehydes or ketones
H01B 3/38	...	condensation products of aldehydes with amines or amides
H01B 3/40	...	epoxy resins
H01B 3/42	...	polyesters; polyethers; polyacetals
H01B 3/421	....	{Polyesters}
H01B 3/422	.....	{Linear saturated polyesters derived from dicarboxylic acids and dihydroxy compounds}
H01B 3/423	.....	{Linear aromatic polyesters}
H01B 3/425	.....	{Non-saturated polyesters derived from polycarboxylic acids and polyhydroxy compounds, in which at least one of the two components contains aliphatic unsaturation}
H01B 3/426	.....	{Polycarbonates}
H01B 3/427	....	{Polyethers}
H01B 3/428	....	{Polyacetals}
H01B 3/44	...	Vinyl resins; Acrylic resins (silicones H01B 3/46)
H01B 3/441	....	{from alkenes}
H01B 3/442	....	{from aromatic vinyl compounds}
H01B 3/443	....	{from vinylhalogenides or other halogenoethylenic compounds}
H01B 3/445	.....	{from vinylfluorides or other fluoroethylenic compounds}
H01B 3/446	....	{from vinylacetals}
H01B 3/447	....	{from acrylic compounds}
H01B 3/448	....	{from other vinyl compounds}
H01B 3/46	...	silicones
H01B 3/465	....	{Silicone oils}
H01B 3/47	...	fibre-reinforced plastics, e.g. glass-reinforced plastics
H01B 3/48	..	fibrous materials (fibre-reinforced plastics H01B 3/47)
H01B 3/485	...	{Other fibrous materials fabric}

H01B 3/50	... fabric
H01B 3/52	... wood; paper; press board
H01B 3/54	... hard paper; hard fabrics
H01B 3/545	.... {Hard fabrics}
H01B 3/56	.. gases

H01B 5/00**Non-insulated conductors or conductive bodies characterised by their form**

H01B 5/002	. {Auxiliary arrangements}
H01B 5/004	.. {for protection against corona}
H01B 5/006	.. {for protection against vibrations}
H01B 5/008	. {Fence-wire not otherwise provided for (wire fencing E04H 17/02)}
H01B 5/02	. Single bars, rods, wires, or strips
H01B 5/04	.. wound or coiled
H01B 5/06	. Single tubes
H01B 5/08	. Several wires or the like stranded in the form of a rope
H01B 5/10	.. stranded around a space, insulating material, or dissimilar conducting material
H01B 5/101	... {stranded around a space}
H01B 5/102	... {stranded around a high tensile strength core}
H01B 5/104	.... {composed of metallic wires, e.g. steel wires}
H01B 5/105	.... {composed of synthetic filaments, e.g. glass-fibres}
H01B 5/107	... {stranded around a core supporting radial stresses, e.g. a tube, a wire helix}
H01B 5/108	... {stranded around communication or control conductors}
H01B 5/12	. Braided wires or the like
H01B 5/14	. comprising conductive layers or films on insulating-supports (insulating-layers or insulating-films on metal bodies H01B 17/62)
H01B 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)

H01B 7/00**Insulated conductors or cables characterised by their form**

H01B 7/0009	. {Details relating to the conductive cores}
H01B 7/0018	.. {Strip or foil conductors (H01B 7/08 takes precedence)}
H01B 7/0027	.. {Liquid conductors}
H01B 7/0036	.. {Alkali metal conductors}
H01B 7/0045	. {Cable-harnesses}
H01B 7/0054	. {Cables with incorporated electric resistances}
H01B 7/0063	. {Ignition cables}
H01B 7/0072	. {Electrical cables comprising fluid supply conductors}
H01B 7/0081	. {Cables of rigid construction (rigid-tube cables H01B 7/16)}
H01B 7/009	. {Cables with built-in connecting points or with predetermined areas for making deviations}
H01B 7/02	. Disposition of insulation (materials H01B 3/00 ; insulators H01B 17/00)

H01B 7/0208	..	{Cables with several layers of insulating material}
H01B 7/0216	...	{Two layers}
H01B 7/0225	...	{Three or more layers}
H01B 7/0233	..	{Cables with a predominant gas dielectric}
H01B 7/0241	..	{comprising one or more helical wrapped layers of insulation}
H01B 7/025	...	{comprising in addition one or more other layers of non-helical wrapped insulation}
H01B 7/0258	..	{comprising one or more longitudinal lapped layers of insulation}
H01B 7/0266	..	{comprising one or more braided layers of insulation}
H01B 7/0275	..	{comprising one or more extruded layers of insulation}
H01B 7/0283	...	{comprising in addition one or more other layers of non-extruded insulation}
H01B 7/0291	..	{comprising two or more layers of insulation having different electrical properties}
H01B 7/04	.	Flexible cables, conductors, or cords, e.g. trailing cables
H01B 7/041	..	{attached to mobile objects, e.g. portable tools, elevators, mining equipment, hoisting cables}
H01B 7/043	..	{attached to flying objects, e.g. aircraft towline, cables connecting an aerodyne to the ground}
H01B 7/045	..	{attached to marine objects, e.g. buoys, diving equipment, aquatic probes, marine towline}
H01B 7/046	..	{attached to objects sunk in bore holes, e.g. well drilling means, well pumps}
H01B 7/048	..	{for implantation into a human or animal body, e.g. pacemaker leads}
H01B 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)
H01B 7/065	..	{having the shape of an helix}
H01B 7/08	.	Flat or ribbon cables
H01B 7/0807	..	{Twin conductor or cable}
H01B 7/0815	..	{covered with gluten for wall-fixing}
H01B 7/0823	..	{Parallel wires, incorporated in a flat insulating profile}
H01B 7/083	..	{Parallel wires, incorporated in a fabric}
H01B 7/0838	..	{Parallel wires, sandwiched between two insulating layers}
H01B 7/0846	..	{Parallel wires, fixed upon a support layer}
H01B 7/0853	..	{Juxtaposed parallel wires, fixed to each other without a support layer}
H01B 7/0861	..	{comprising one or more screens}
H01B 7/0869	..	{comprising one or more armouring, tensile- or compression-resistant elements}
H01B 7/0876	..	{comprising twisted pairs}
H01B 7/0884	..	{comprising connection wire loops}
H01B 7/0892	..	{incorporated in a cable of non-flat configuration}
H01B 7/10	.	Contact cables, i.e. having conductors which may be brought into contact by distortion of the cable
H01B 7/102	..	{responsive to heat}
H01B 7/104	..	{responsive to pressure}
H01B 7/106	...	{comprising concentric conductors}

H01B 7/108	...	{comprising parallel conductors}
H01B 7/12	.	Floating cables (installations of cables supported on or from floats H02G 9/12)
H01B 7/14	.	Submarine cables
H01B 7/145	..	{associated with hydrodynamic bodies}
H01B 7/16	.	Rigid-tube cables (heating elements of similar construction H05B)
H01B 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 ; { continuously-loaded cables H01B 11/14 ;} installation of conduits H02G)
H01B 7/18	..	{ Protection against damage caused } by wear, mechanical force or pressure; { Sheaths ; Armouring }
H01B 7/1805	...	{ Protections not provided for in groups H01B 7/182 to H01B 7/26 }
H01B 7/181	....	{composed of beads or rings}
H01B 7/1815	....	{composed of longitudinal inserts}
H01B 7/182	...	{comprising synthetic filaments}
H01B 7/1825	....	{forming part of a high tensile strength core}
H01B 7/183	....	{forming part of an outer sheath}
H01B 7/1835	...	{ Sheaths comprising abrasive charges }
H01B 7/184	...	{ Sheaths comprising grooves, ribs or other projections }
H01B 7/1845	...	{ Sheaths comprising perforations }
H01B 7/185	...	{ Sheaths comprising internal cavities or channels }
H01B 7/1855	...	{ Sheaths comprising helical wrapped non-metallic layers }
H01B 7/186	...	{ Sheaths comprising longitudinal lapped non-metallic layers }
H01B 7/1865	...	{ Sheaths comprising braided non-metallic layers }
H01B 7/187	...	{ Sheaths comprising extruded non-metallic layers }
H01B 7/1875	...	{ Multi-layer sheaths }
H01B 7/188	....	{Inter-layer adherence promoting means }
H01B 7/1885	....	{Inter-layer adherence preventing means }
H01B 7/189	...	{ Radial force absorbing layers providing a cushioning effect (H01B 7/185 takes precedence) }
H01B 7/1895	...	{ Internal space filling-up means }
H01B 7/20	...	Metal tubes, e.g. lead sheaths
H01B 7/201	....	{Extruded metal tubes }
H01B 7/202	....	{Longitudinal lapped metal tubes }
H01B 7/204	....	{composed of lead }
H01B 7/205	....	{composed of aluminium }
H01B 7/207	....	{composed of iron or steel }
H01B 7/208	....	{composed of composite laminated metals }
H01B 7/22	...	Metal wires or tapes, e.g. made of steel
H01B 7/221	....	{Longitudinally placed metal wires or tapes }
H01B 7/223	.....	{forming part of a high tensile strength core }
H01B 7/225	.....	{forming part of an outer sheath }

- H01B 7/226 {Helicoidally wound metal wires or tapes}
- H01B 7/228 {Metal braid}
- H01B 7/24 . . . Devices affording localised protection against mechanical force or pressure
- H01B 7/26 . . . Reduction of losses in sheaths or armouring
- H01B 7/28 . . {Protection against damage caused} by moisture, corrosion, chemical attack or weather {(sheaths, armouring [H01B 7/18](#))}
- H01B 7/2806 . . . {Protection against damage caused by corrosion}
- H01B 7/2813 . . . {Protection against damage caused by electrical, chemical or water tree deterioration}
- H01B 7/282 . . . Preventing penetration of fluid {, e.g. water or humidity,} 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](#))
- H01B 7/2825 {using a water impermeable sheath}
- H01B 7/285 by completely or partially filling interstices in the cable
- H01B 7/2855 {using foamed plastic}
- H01B 7/288 using hygroscopic material or material swelling in the presence of liquid
- H01B 7/29 . . Protection against damage caused by extremes of temperature or by flame {(heat dissipation or conduction [H01B 7/42](#))}
- H01B 7/292 . . . {using material resistant to heat}
- H01B 7/295 . . . using material resistant to flame
- H01B 7/30 . . with arrangements for reducing conductor losses when carrying alternating current, e.g. due to skin effect
- H01B 7/303 . . {Conductors comprising interwire insulation}
- H01B 7/306 . . {Transposed conductors}
- H01B 7/32 . . with arrangements for indicating defects, e.g. breaks, leaks, (locating defects by measuring [G01](#))
- H01B 7/322 . . {comprising humidity sensing means}
- H01B 7/324 . . {comprising temperature sensing means}
- H01B 7/326 . . {comprising pressure sensing means}
- H01B 7/328 . . {comprising violation sensing means}
- H01B 7/36 . . with distinguishing or length marks
- H01B 7/361 . . {being the colour of the insulation or conductor}
- H01B 7/363 . . {being the form of the insulation or conductor}
- H01B 7/365 . . {being indicia imposed on the insulation or conductor}
- H01B 7/366 . . {being a tape, thread or wire extending the full length of the conductor or cable}
- H01B 7/368 . . {being a sleeve, ferrule, tag, clip, label or short length strip}
- H01B 7/38 . . with arrangements for facilitating removal of insulation
- H01B 7/385 . . {comprising a rip cord or wire}
- H01B 7/40 . . with arrangements for facilitating mounting or securing
- H01B 7/42 . . with arrangements for heat dissipation or conduction (insulators or insulating bodies having heating or cooling devices [H01B 17/54](#))

- H01B 7/421 .. {for heat dissipation}
- H01B 7/423 ... {using a cooling fluid}
- H01B 7/425 {the construction being bendable}
- H01B 7/426 ... {using cooling fins, ribs}
- H01B 7/428 .. {Heat conduction}

H01B 9/00**Power cables**

- H01B 9/001 . {Power supply cables for the electrodes of electric-welding apparatus or electric-arc furnaces}
- H01B 9/003 . {including electrical control or communication wires}
- H01B 9/005 . {including optical transmission elements}
- H01B 9/006 . {Constructional features relating to the conductors}
- H01B 9/008 . {for overhead application}
- H01B 9/02 . with screens or conductive layers, e.g. for avoiding large potential gradients
- H01B 9/021 .. {Features relating to screening tape per se}
- H01B 9/022 .. {composed of longitudinal lapped tape-conductors}
- H01B 9/023 .. {composed of helicoidally wound tape-conductors}
- H01B 9/024 .. {composed of braided metal wire}
- H01B 9/025 .. {composed of helicoidally wound wire-conductors}
- H01B 9/026 .. {composed of longitudinally posed wire-conductors}
- H01B 9/027 .. {composed of semi-conducting layers}
- H01B 9/028 .. {with screen grounding means, e.g. drain wires}
- H01B 9/029 .. {Screen interconnecting circuits}
- H01B 9/04 . Concentric cables
- H01B 9/06 . Gas-pressure cables; Oil-pressure cables; Cables for use in conduits under fluid pressure
- H01B 9/0605 .. {Gas-pressure cables with enclosed conduits}
- H01B 9/0611 .. {Oil-pressure cables}
- H01B 9/0616 .. {Oil-pressure cables with enclosed conduits}
- H01B 9/0622 .. {Cables for use in conduits under gas-pressure}
- H01B 9/0627 .. {Cables for use in conduits under oil-pressure}
- H01B 9/0633 .. {Expansion-absorbing apparatus, enclosed within the cable}
- H01B 9/0638 .. {Features relating to the conductors of gas-pressure cables}
- H01B 9/0644 .. {Features relating to the dielectric of gas-pressure cables}
- H01B 9/065 ... {Tubular insulation}
- H01B 9/0655 ... {Helically wrapped insulation}
- H01B 9/0661 ... {Longitudinally wrapped insulation}
- H01B 9/0666 ... {Discontinuous insulation}
- H01B 9/0672 {having the shape of a disc}
- H01B 9/0677 .. {Features relating to the enclosing sheath of gas-pressure cables}
- H01B 9/0683 .. {Features relating to the conductors of oil-pressure cables}

- H01B 9/0688 .. {Features relating to the dielectric of oil-pressure cables}
- H01B 9/0694 .. {Features relating to the enclosing sheath of oil-pressure cables}

- H01B 11/00** **Communication cables or conductors** ([waveguides H01P](#))
- H01B 11/002 . {Pair constructions}
- H01B 11/005 . {Quad constructions}
- H01B 11/007 . {for overhead application}
- H01B 11/02 . Cables with twisted pairs or quads ([transposing, crossing or twisting at joints H04B](#); [balancing of earth capacitance H04B](#))
- H01B 11/04 .. with pairs or quads mutually positioned to reduce cross-talk ([balancing by making use of additional capacitors or coils H04B](#))
- H01B 11/06 .. with means for reducing effects of electromagnetic or electrostatic disturbances, e.g. screen ([screening in general H05K 9/00](#))
- H01B 11/08 ... Screens specially adapted for reducing cross-talk
- H01B 11/085 {composed of longitudinal tape conductors}
- H01B 11/10 ... Screens specially adapted for reducing interference from external sources
- H01B 11/1008 {Features relating to screening tape per se}
- H01B 11/1016 {composed of a longitudinal lapped tape-conductor}
- H01B 11/1025 {composed of a helicoidally wound tape-conductor}
- H01B 11/1033 {composed of a wire-braided conductor}
- H01B 11/1041 {composed of a helicoidally wound wire-conductor}
- H01B 11/105 {composed of a longitudinally posed wire-conductor}
- H01B 11/1058 {using a coating, e.g. a loaded polymer, ink or print}
- H01B 11/1066 {the coating containing conductive or semiconductive material}
- H01B 11/1075 {the coating being applied by printing}
- H01B 11/1083 {the coating containing magnetic material}
- H01B 11/1091 {with screen grounding means, e.g. drain wires}
- H01B 11/12 .. Arrangements for exhibiting specific transmission characteristics ([loading coils per se H01F 17/08](#); [coil-loaded circuits H04B](#))
- H01B 11/125 ... {Specially adapted cable interconnections}
- H01B 11/14 ... Continuously inductively loaded cables, e.g. Krarup cables
- H01B 11/143 {using helically wound magnetic tape}
- H01B 11/146 {using magnetically loaded coatings}
- H01B 11/16 ... Cables, e.g. submarine cables, with coils or other devices incorporated during cable manufacture ([junction boxes for cables H02G 15/10](#))
- H01B 11/18 . Co-axial cables; Analogous cables having more than one inner conductor within a common outer conductor

NOTE

If suitable for handling frequencies considerably beyond the audio range and if typical HF-features of coaxial cables are disclosed, e.g. propagation of non-TEM

modes, multimoding, oversized coaxial cables, particular cross-section adapted for HF-propagation, classification is made in [H01P 3/06](#)

- H01B 11/1804 .. {Construction of the space inside the hollow inner conductor}
- H01B 11/1808 .. {Construction of the conductors}
- H01B 11/1813 ... {Co-axial cables with at least one braided conductor}
- H01B 11/1817 ... {Co-axial cables with at least one metal deposit conductor}
- H01B 11/1821 ... {Co-axial cables with at least one wire-wound conductor}
- H01B 11/1826 ... {Co-axial cables with at least one longitudinal lapped tape-conductor}
- H01B 11/183 ... {Co-axial cables with at least one helicoidally wound tape-conductor}
- H01B 11/1834 .. {Construction of the insulation between the conductors}
- H01B 11/1839 ... {of cellular structure}
- H01B 11/1843 ... {of tubular structure}
- H01B 11/1847 ... {of helical wrapped structure}
- H01B 11/1852 ... {of longitudinal lapped structure}
- H01B 11/1856 ... {Discontinuous insulation}
- H01B 11/186 {having the shape of a disc}
- H01B 11/1865 {having the shape of a bead}
- H01B 11/1869 .. {Construction of the layers on the outer side of the outer conductor}
- H01B 11/1873 .. {Measures for the conductors, in order to fix the spacers}
- H01B 11/1878 .. {Special measures in order to improve the flexibility}
- H01B 11/1882 .. {Special measures in order to improve the refrigeration}
- H01B 11/1886 .. {Special measures in order to improve the centration of the inner conductor}
- H01B 11/1891 .. {comprising auxiliary conductors}
- H01B 11/1895 .. {Particular features or applications}
- H01B 11/20 .. Cables having a multiplicity of co-axial lines
- H01B 11/203 ... {forming a flat arrangement}
- H01B 11/206 ... {Tri-conductor coaxial cables}
- H01B 11/22 . Cables including at least one electrical conductor together with optical fibres

H01B 12/00 **Superconductive or hyperconductive conductors, cables, or transmission lines**
(details or devices using superconductivity or hyperconductivity characterised by the material [H01L 39/12](#))

- H01B 12/02 . characterised by their form

NOTE

Group [H01B 12/12](#) takes precedence over groups [H01B 12/04](#) to [H01B 12/10](#).

- H01B 12/04 .. Single wire
- H01B 12/06 .. Films or wires on bases or cores
- H01B 12/08 .. Stranded or braided wires
- H01B 12/10 .. Multi-filaments embedded in normal conductors

H01B 12/12	.. Hollow conductors
H01B 12/14	. characterised by the disposition of thermal insulation
H01B 12/16	. characterised by cooling
H01B 13/00	Apparatus or processes specially adapted for manufacturing conductors or cables
H01B 13/0003	. {for feeding conductors or cables}
H01B 13/0006	. {for reducing the size of conductors or cables}
H01B 13/0009	. {for forming corrugations on conductors or cables}
H01B 13/0013	. {for embedding wires in plastic layers}
H01B 13/0016	. {for heat treatment}
H01B 13/002	.. {for heat extraction}
H01B 13/0023	. {for welding together plastic insulated wires side-by-side}
H01B 13/0026	. {Apparatus for manufacturing conducting or semi-conducting layers, e.g. deposition of metal}
H01B 13/003	. {using irradiation}
H01B 13/0033	. {by electrostatic coating}
H01B 13/0036	. {Details}
H01B 13/004	. for manufacturing rigid-tube cables
H01B 13/008	. for manufacturing extensible conductors or cables
H01B 13/012	. for manufacturing wire harnesses
H01B 13/01209	.. {Details}
H01B 13/01218	.. {the wires being disposed by hand}
H01B 13/01227	... {using a layout board}
H01B 13/01236	.. {the wires being disposed by machine}
H01B 13/01245	... {using a layout board}
H01B 13/01254	.. {Flat-harness manufacturing}
H01B 13/01263	.. {Tying, wrapping, binding, lacing, strapping or sheathing harnesses}
H01B 13/01272	... {Harness tying apparatus}
H01B 13/01281	... {Harness wrapping apparatus}
H01B 13/0129	... {Sheathing harnesses with foil material}
H01B 13/016	. for manufacturing co-axial cables (applying discontinuous insulation H01B 13/20)
H01B 13/0162	.. {of the central conductor}
H01B 13/0165	.. {of the layers outside the outer conductor}
H01B 13/0167	.. {After-treatment}
H01B 13/02	. Stranding-up (stranding-up ropes D07B)
H01B 13/0207	.. {Details; Auxiliary devices}
H01B 13/0214	.. {by a twisting pay-off device}
H01B 13/0221	.. {by a twisting take-up device}
H01B 13/0228	.. {by a twisting pay-off and take-up device}
H01B 13/0235	.. {by a twisting device situated between a pay-off device and a take-up device}
H01B 13/0242	... {being an accumulator}

H01B 13/025	....	{of tubular construction}
H01B 13/0257	...	{being a perforated disc}
H01B 13/0264	...	{being rollers, pulleys, drums or belts (H01B 13/0242 takes precedence)}
H01B 13/0271	..	{Alternate stranding processes}
H01B 13/0278	..	{Stranding machines comprising a transposing mechanism}
H01B 13/0285	..	{Pretreatment}
H01B 13/0292	..	{After-treatment}
H01B 13/04	..	Mutually positioning pairs or quads to reduce cross-talk
H01B 13/06	.	Insulating conductors or cables (H01B 13/32 takes precedence)
H01B 13/062	..	{by pulling on an insulating sleeve}
H01B 13/065	..	{Insulating conductors with lacquers or enamels}
H01B 13/067	..	{Insulating coaxial cables (H01B 13/20 takes precedence)}
H01B 13/08	..	by winding
H01B 13/0808	...	{Hand-held devices}
H01B 13/0816	...	{Apparatus having a coaxial rotation of the supply reels about the conductor or cable}
H01B 13/0825	...	{Apparatus having a planetary rotation of the supply reels around the conductor or cable}
H01B 13/0833	....	{the supply reel axis being arranged parallel to the conductor or cable axis}
H01B 13/0841	....	{the supply reel axis being arranged perpendicular to the conductor or cable axis}
H01B 13/085	...	{Apparatus having the supply reels in a fixed position, the conductor or cable rotating about its own axis}
H01B 13/0858	...	{Details of winding apparatus; Auxiliary devices}
H01B 13/0866	....	{Brakes or tension regulating means}
H01B 13/0875	....	{Detecting breakage or run-out of winding material}
H01B 13/0883	...	{Pretreatment}
H01B 13/0891	...	{After-treatment}
H01B 13/10	..	by longitudinal lapping
H01B 13/103	...	{combined with pressing of plastic material around the conductors}
H01B 13/106	...	{the conductor having a rectangular cross-section}
H01B 13/12	..	by applying loose fibres
H01B 13/14	..	by extrusion {(extrusion in general B29C 47/00)}
H01B 13/141	...	{of two or more insulating layers}
H01B 13/142	...	{of cellular material}
H01B 13/143	...	{with a special opening of the extrusion head}
H01B 13/144	....	{Heads for simultaneous extrusion on two or more conductors}
H01B 13/145	...	{Pretreatment or after-treatment}
H01B 13/146	...	{Controlling the extrusion apparatus dependent on the capacitance or the thickness of the insulating material (measuring thickness G01B ; testing during manufacturing G01R 31/022)}
H01B 13/147	...	{Feeding of the insulating material}

- H01B 13/148 ... {Selection of the insulating material therefor}
- H01B 13/16 .. by passing through or dipping in a liquid bath; by spraying
- H01B 13/165 ... {by spraying}
- H01B 13/18 .. Applying discontinuous insulation, e.g. discs, beads
- H01B 13/185 ... {by periodically constricting an insulating sleeve}
- H01B 13/20 ... for concentric or coaxial cables
- H01B 13/202 {by molding spacers}
- H01B 13/204 {by punching spacers}
- H01B 13/206 {by forming a helical web}
- H01B 13/208 {by mechanically removing parts of a continuous insulation}
- H01B 13/22 . Sheathing; Armouring; Screening; Applying other protective layers ([H01B 13/32](#) takes precedence)
- H01B 13/221 .. {filling-up interstices}
- H01B 13/222 .. {by electro-plating}
- H01B 13/224 .. {by drawing a cable core into an oversized tube by means of a tow line}
- H01B 13/225 .. {Screening coaxial cables}
- H01B 13/227 .. {Pretreatment}
- H01B 13/228 .. {After-treatment}
- H01B 13/24 .. by extrusion {(extrusion of cables with plastic material in general [B29C 47/02](#))}
- H01B 13/245 ... {of metal layers}
- H01B 13/26 .. by winding, braiding, or longitudinal lapping ([winding in general B65H](#))
- H01B 13/2606 ... {by braiding}
- H01B 13/2613 ... {by longitudinal lapping}
- H01B 13/262 {of an outer metallic screen}
- H01B 13/2626 {of a coaxial cable outer conductor}
- H01B 13/2633 {Bending and welding of a metallic screen}
- H01B 13/264 {Details of the welding stage}
- H01B 13/2646 {Bending and soldering of a metallic screen}
- H01B 13/2653 {Details of the soldering stage}
- H01B 13/266 {Bending and adhesively bonding of a metallic screen}
- H01B 13/2666 {Details of the bonding stage}
- H01B 13/2673 {of a compartment separating metallic screen}
- H01B 13/268 {of a non-metallic sheet}
- H01B 13/2686 {Pretreatment}
- H01B 13/2693 {After-treatment}
- H01B 13/28 . Applying continuous inductive loading, e.g. Krarup loading
- H01B 13/282 .. {by winding}
- H01B 13/285 .. {by extrusion}
- H01B 13/287 .. {by passing through a coating bath}

- H01B 13/30
 - . Drying; (in general [F26B](#)); Impregnating ([H01B 13/32](#) takes precedence; {impregnating of fibres [D06B 3/00](#), [D06B 5/00](#); [H01G 4/00](#), [H01G 4/06](#); drying and impregnating of wood or the like [B27K](#); impregnation of stones, basic materials therefor [C04B 20/10](#) to [C04B 20/12](#), [C04B 41/45](#) to [C04B 41/52](#)})
- H01B 13/32
 - . Filling or coating with impervious material (for cable installations [H02G 15/00](#))
- H01B 13/321
 - .. {the material being a powder}
- H01B 13/322
 - .. {the material being a liquid, jelly-like or viscous substance}
- H01B 13/323
 - ... {using a filling or coating head}
- H01B 13/324
 - {in combination with a vacuum chamber}
- H01B 13/325
 - {in combination with vibration generating means}
- H01B 13/326
 - {Material preparing or feeding devices}
- H01B 13/327
 - ... {using a filling or coating cone or die}
- H01B 13/328
 - ... {using a filling or coating bath}
- H01B 13/329
 - .. {the material being a foam}
- H01B 13/34
 - . for marking conductors or cables
- H01B 13/341
 - .. {using marking wheels, discs, rollers, drums, balls or belts}
- H01B 13/342
 - .. {by applying marked tape, thread or wire on the full length of the conductor or cable}
- H01B 13/344
 - .. {by applying sleeves, ferrules, tags, clips, labels or short length strips}
- H01B 13/345
 - .. {by spraying, ejecting or dispensing marking fluid}
- H01B 13/347
 - ... {Electrostatic deflection of the fluid jets}
- H01B 13/348
 - .. {using radiant energy, e.g. a laser beam}
- H01B 15/00**
 - Apparatus or processes for salvaging material from cables** (for removing insulation from conductors [H02G 1/12](#))
- H01B 15/001
 - . {by cooling down}
- H01B 15/003
 - . {by heating up}
- H01B 15/005
 - . {by cutting}
- H01B 15/006
 - .. {Making a longitudinal cut}
- H01B 15/008
 - . {by crushing}
- H01B 17/00**
 - Insulators or insulating bodies characterised by their form** (section insulators for electric traction [B60M 1/18](#); insulating rail-joints [E01B 11/54](#))
- H01B 17/005
 - . {Insulators structurally associated with built-in electrical equipment}
- H01B 17/02
 - . Suspension insulators; Strain insulators
- H01B 17/04
 - .. Chains; Multiple chains
- H01B 17/06
 - .. Fastening of insulator to support, to conductor, or to adjoining insulator
- H01B 17/08
 - ... by cap-and-bolt
- H01B 17/10
 - ... by intermediate link
- H01B 17/12
 - .. Special features of strain insulators (devices for relieving mechanical tension of electric lines or cables [H02G 7/04](#))
- H01B 17/14
 - . Supporting insulators (pin insulators [H01B 17/20](#); apertured insulators [H01B 17/24](#))
- H01B 17/145
 - .. {Insulators, poles, handles, or the like in electric fences}

- H01B 17/16 .. Fastening of insulators to support, to conductor, or to adjoining insulator
- H01B 17/18 .. for very heavy conductors, e.g. bus-bars, rails
- H01B 17/20 . Pin insulators
- H01B 17/22 .. Fastening of conductors to insulator
- H01B 17/24 . Insulators apertured for fixing by nail, screw, wire, or bar, e.g. diabolos, bobbins
- H01B 17/26 . Lead-in insulators; Lead-through insulators
- H01B 17/265 .. {Fastening of insulators to support ([H01B 17/301](#) takes precedence)}
- H01B 17/28 .. Capacitor type ([capacitors H01G](#))
- H01B 17/30 .. Sealing ([packings in general F16J](#))
- H01B 17/301 ... {Sealing of insulators to support}
- H01B 17/303 ... {Sealing of leads to lead-through insulators}
- H01B 17/305 {by embedding in glass or ceramic material}
- H01B 17/306 {by embedding in material other than glass or ceramics}
- H01B 17/308 {by compressing packing material}
- H01B 17/32 . Single insulators consisting of two or more dissimilar insulating bodies
- H01B 17/325 .. {comprising a fibre-reinforced insulating core member}
- H01B 17/34 . Insulators containing liquid, e.g. oil
- H01B 17/36 . Insulators having evacuated or gas-filled spaces
- H01B 17/38 . Fittings, e.g. caps; Fastenings therefor
- H01B 17/40 .. Cementless fittings
- H01B 17/42 . Means for obtaining improved distribution of voltage ([capacitor-type lead-through insulators H01B 17/28](#)); Protection against arc discharges
- H01B 17/44 .. Structural association of insulators with corona rings ([corona rings H01T 19/02](#))
- H01B 17/46 .. Means for providing an external arc-discharge path ([spark-gap arresters H01T](#))
- H01B 17/48 .. over chains or other serially-arranged insulators
- H01B 17/50 . with surfaces specially treated for preserving insulating properties, e.g. for protection against moisture, dirt, or the like
- H01B 17/52 . having cleaning devices ([H01B 17/54](#) takes precedence)
- H01B 17/525 .. {Self-cleaning, e.g. by shape or disposition of screens}
- H01B 17/54 . having heating or cooling devices
- H01B 17/56 . Insulating bodies ([insulators H01B 17/02 to H01B 17/54](#))
- H01B 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](#))
- H01B 17/583 ... {Grommets; Bushings}
- H01B 17/586 {with strain relief arrangements}
- H01B 17/60 .. Composite insulating bodies ([cables or conductors H01B 7/00, H01B 9/00; resistors H01C; capacitors H01G](#))
- H01B 17/62 .. Insulating-layers or insulating films on metal bodies ([conductive layers or films on insulating-bodies H01B 5/14](#))
- H01B 17/64 .. with conductive admixtures, inserts, or layers ([conductive bodies comprising conductive material dispersed in insulating material H01B 5/16](#))
- H01B 17/66 .. Joining insulating bodies together, e.g. by bonding

- H01B 19/00** **Apparatus or processes specially adapted for manufacturing insulators or insulating bodies** {([manufacture of porcelain for electric insulation C04B 33/26](#))}
- [H01B 19/02](#) . Drying ([in general F26B](#)); Impregnating
- [H01B 19/04](#) . Treating the surfaces, e.g. applying coatings