Symbol	Typ	Titel
F	**Sektion**	**SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING**
F16	**Klasse**	**ENGINEERING ELEMENTS OR UNITS; GENERAL MEASURES FOR PRODUCING AND MAINTAINING EFFECTIVE FUNCTIONING OF MACHINES OR INSTALLATIONS ; THERMAL INSULATION IN GENERAL**
F16L	**Unterklasse**	**PIPES; JOINTS OR FITTINGS FOR PIPES; SUPPORTS FOR PIPES, CABLES OR PROTECTIVE TUBING; MEANS FOR THERMAL INSULATION IN GENERAL**
F16L 1/00	**Hauptgruppe**	**Laying or reclaiming pipes; Repairing or joining pipes on or under water (soldering or welding B23K; lifting-gear and load-engaging elements B66; hydraulic installations, soil drainage E02B; excavations or underwater constructions E02D; machines for digging trenches in combination with pipe-assembly E02F; laying sewer pipes E03F 3/06; in earth boreholes or wells E21B; tunnelling E21D; laying electric, or combined optical and electric, cables H02G; making special pipe joints, see the relevant groups for the joints) [2, 5, 6]**
F16L 1/024	1-Punkt Untergruppe	. Laying or reclaiming pipes on land, e.g. above the ground (F16L 1/12 takes precedence) [5]
F16L 1/026	2-Punkt Untergruppe	. . in or on a frozen surface [6]
F16L 1/028	2-Punkt Untergruppe	. . in the ground (F16L 1/026 takes precedence) [5, 6]
F16L 1/032	3-Punkt Untergruppe	. . . the pipes being continuous (F16L 1/038 takes precedence) [5, 6]
F16L 1/036	3-Punkt Untergruppe	. . . the pipes being composed of sections of short length (F16L 1/038 takes precedence) [5, 6]
F16L 1/038	3-Punkt Untergruppe	. . . the pipes being made in situ [6]
F16L 1/06	2-Punkt Untergruppe	. . Accessories therefor, e.g. anchors [5]
F16L 1/09	3-Punkt Untergruppe	. . . for bringing two tubular members closer to each other [6]
F16L 1/10	3-Punkt Untergruppe	. . . for aligning [5]
F16L 1/11	3-Punkt Untergruppe	. . . for the detection or protection of pipes in the ground [6]
F16L 1/12	1-Punkt Untergruppe	. Laying or reclaiming pipes on or under water (buoyant hoses F16L 11/133) [5]
F16L 1/14	2-Punkt Untergruppe	. . between the surface and the bottom [5]
F16L 1/15	3-Punkt Untergruppe	. . . vertically [6]
F16L 1/16	2-Punkt Untergruppe	. . on the bottom [5]
F16L 1/18	3-Punkt Untergruppe	. . . the pipes being S- or J-shaped and under tension during laying [5]
F16L 1/19	4-Punkt Untergruppe	. . . . the pipes being J-shaped [6]
F16L 1/20	2-Punkt Untergruppe	. . Accessories therefor, e.g. floats, weights (buoys B63B 22/00) [5]
F16L 1/225	3-Punkt Untergruppe	. . . Stingers [6]
F16L 1/23	3-Punkt Untergruppe	. . . Pipe tensioning apparatus [6]
F16L 1/235	3-Punkt Untergruppe	. . . Apparatus for controlling the pipe during laying [6]
F16L 1/24	3-Punkt Untergruppe	. . . Floats; Weights [5]
F16L 1/26	1-Punkt Untergruppe	. Repairing or joining pipes on or under water (buoyant hoses F16L 11/133; joints per seF16L 13/00-F16L 49/00) [5]

Symbol	Typ	Titel
F16L 3/00	**Hauptgruppe**	**Supports for pipes, cables or protective tubing, e.g. hangers, holders, clamps, cleats, clips, brackets (anchors for holding pipes on or under the ground F16L 1/06; noise absorbers in the form of specially adapted hangers or supports F16L 55/035; arrangements specially adapted for supporting insulated bodies F16L 59/12) [5, 7]**
F16L 3/01	1-Punkt Untergruppe	. for supporting or guiding the pipes, cables or protective tubing, between relatively movable points, e.g. movable channels (hauling- or hoisting-chains with arrangements for holding electric cables, hoses or the like F16G 13/16) [5]
F16L 3/015	2-Punkt Untergruppe	. . using articulated- or supple-guiding elements (arrangements for cranes of means for transmitting pneumatic, hydraulic or electric power to movable parts or devices B66C 13/12) [6]
F16L 3/02	1-Punkt Untergruppe	. partly surrounding the pipes, cables or protective tubing (bands or chains F16L 3/14)
F16L 3/04	2-Punkt Untergruppe	. . and pressing it against a wall or other support
F16L 3/06	2-Punkt Untergruppe	. . with supports for wires
F16L 3/08	1-Punkt Untergruppe	. substantially surrounding the pipe, cable or protective tubing
F16L 3/10	2-Punkt Untergruppe	. . divided, i.e. with two members engaging the pipe, cable or protective tubing
F16L 3/11	3-Punkt Untergruppe	. . . and hanging from a pendant (F16L 3/14 takes precedence) [5]
F16L 3/12	2-Punkt Untergruppe	. . comprising a member substantially surrounding the pipe, cable or protective tubing
F16L 3/123	3-Punkt Untergruppe	. . . and extending along the attachment surface [5]
F16L 3/127	3-Punkt Untergruppe	. . . and extending away from the attachment surface [5]
F16L 3/13	3-Punkt Untergruppe	. . . and engaging it by snap action [5]
F16L 3/133	3-Punkt Untergruppe	. . . and hanging from a pendant (F16L 3/14 takes precedence) [5]
F16L 3/137	3-Punkt Untergruppe	. . . and consisting of a flexible band [5]
F16L 3/14	1-Punkt Untergruppe	. Hangers in the form of bands or chains
F16L 3/16	1-Punkt Untergruppe	. with special provision allowing movement of the pipe (F16L 3/01 takes precedence; supporting pipes or cables inside other pipes or sleeves F16L 7/00) [5]
F16L 3/18	2-Punkt Untergruppe	. . allowing movement in axial direction
F16L 3/20	2-Punkt Untergruppe	. . allowing movement in transverse direction
F16L 3/202	3-Punkt Untergruppe	. . . the transverse movement being converted to a rotational movement (F16L 3/215 takes precedence) [6]
F16L 3/205	3-Punkt Untergruppe	. . . having supporting springs [5]
F16L 3/21	4-Punkt Untergruppe	. . . . providing constant supporting spring force [5]
F16L 3/215	3-Punkt Untergruppe	. . . the movement being hydraulically or electrically controlled [5]
F16L 3/217	4-Punkt Untergruppe	. . . . hydraulically [6]
F16L 3/22	1-Punkt Untergruppe	. specially adapted for supporting a number of parallel pipes at intervals [6]
F16L 3/223	2-Punkt Untergruppe	. . each support having one transverse base for supporting the pipes (F16L 3/23, F16L 3/237 take precedence) [6]
F16L 3/227	3-Punkt Untergruppe	. . . each pipe being supported by a separate element fastened to the base [6]
F16L 3/23	2-Punkt Untergruppe	. . for a bundle of pipes or a plurality of pipes placed side by side in contact with each other (F16L 3/237 takes precedence) [6]

Symbol	Typ	Titel
F16L 3/233	3-Punkt Untergruppe	. . . by means of a flexible band [6]
F16L 3/237	2-Punkt Untergruppe	. . for two pipes [6]
F16L 3/24	1-Punkt Untergruppe	. with special member for attachment to profiled girders
F16L 3/26	1-Punkt Untergruppe	. specially adapted for supporting the pipes all along their length, e.g. pipe channels or ducts [6]
F16L 5/00	**Hauptgruppe**	**Devices for use where pipes, cables or protective tubing pass through walls or partitions (installations of electric cables or lines through walls, floors or ceilings H02G 3/22)**
F16L 5/02	1-Punkt Untergruppe	. Sealing
F16L 5/04	2-Punkt Untergruppe	. . to form a firebreak device [6]
F16L 5/06	2-Punkt Untergruppe	. . by means of a swivel nut compressing a ring or sleeve [6]
F16L 5/08	2-Punkt Untergruppe	. . by means of axial screws compressing a ring or sleeve [6]
F16L 5/10	2-Punkt Untergruppe	. . by using sealing rings or sleeves only [6]
F16L 5/12	2-Punkt Untergruppe	. . the pipe being cut in two pieces [6]
F16L 5/14	2-Punkt Untergruppe	. . for double-walled or multi-channel pipes [6]
F16L 7/00	**Hauptgruppe**	**Supporting pipes or cables inside other pipes or sleeves, e.g. for enabling pipes or cables to be inserted or withdrawn from under roads or railways without interruption of traffic (sleeves for supporting pipes, cables or protective tubing, between relatively movable points F16L 3/01) [5]**
F16L 7/02	1-Punkt Untergruppe	. and sealing the pipes or cables inside the other pipes, cables or sleeves [6]
		Pipes
F16L 9/00	**Hauptgruppe**	**Rigid pipes**
F16L 9/01	1-Punkt Untergruppe	. of wood (F16L 9/16-F16L 9/22 take precedence) [6]
F16L 9/02	1-Punkt Untergruppe	. of metal (F16L 9/16-F16L 9/22 take precedence; finned pipes F28F)
F16L 9/04	2-Punkt Untergruppe	. . Reinforced pipes
F16L 9/06	2-Punkt Untergruppe	. . Corrugated pipes
F16L 9/08	1-Punkt Untergruppe	. of concrete, cement, or asbestos cement, with or without reinforcement (F16L 9/16-F16L 9/22 take precedence)
F16L 9/10	1-Punkt Untergruppe	. of glass or ceramics, e.g. clay, clay tile, porcelain (F16L 9/16-F16L 9/22 take precedence)
F16L 9/12	1-Punkt Untergruppe	. of plastics with or without reinforcement (F16L 9/16-F16L 9/22 take precedence)
F16L 9/127	2-Punkt Untergruppe	. . the walls consisting of a single layer [5]
F16L 9/128	3-Punkt Untergruppe	. . . Reinforced pipes [6]
F16L 9/133	2-Punkt Untergruppe	. . the walls consisting of two layers [5]
F16L 9/14	1-Punkt Untergruppe	. Compound tubes, i.e. made of materials not wholly covered by any one of the preceding groups (F16L 9/16-F16L 9/22 take precedence)
F16L 9/147	2-Punkt Untergruppe	. . comprising only layers of metal and plastics with or without reinforcement [6]
F16L 9/153	2-Punkt Untergruppe	. . comprising only layers of metal and concrete with or without reinforcement [6]
F16L 9/16	1-Punkt Untergruppe	. wound from sheets or strips, with or without reinforcement
F16L 9/17	1-Punkt Untergruppe	. obtained by bending a sheet longitudinally and connecting the edges [6]

Symbol	Typ	Titel
F16L 9/18	1-Punkt Untergruppe	. Double-walled pipes; Multi-channel pipes or pipe assemblies (joints therefor F16L 39/00)
F16L 9/19	2-Punkt Untergruppe	. . Multi-channel pipes or pipe assemblies [4]
F16L 9/21	1-Punkt Untergruppe	. made of sound-absorbing materials or with sound-absorbing structure [7]
F16L 9/22	1-Punkt Untergruppe	. Pipes composed of a plurality of segments
F16L 11/00	**Hauptgruppe**	**Hoses, i.e. flexible pipes (hose-like supports for pipes, cables or protective tubing, between relatively movable points F16L 3/01; suction-cleaner hoses A47L 9/24) [5]**
F16L 11/02	1-Punkt Untergruppe	. made of fibres or threads, e.g. of textile
F16L 11/04	1-Punkt Untergruppe	. made of rubber or flexible plastics
F16L 11/06	2-Punkt Untergruppe	. . with homogeneous wall (F16L 11/11 takes precedence) [2]
F16L 11/08	2-Punkt Untergruppe	. . with reinforcements embedded in the wall (F16L 11/11 takes precedence) [2]
F16L 11/10	2-Punkt Untergruppe	. . with reinforcements not embedded in the wall (F16L 11/11 takes precedence) [2]
F16L 11/11	2-Punkt Untergruppe	. . with corrugated wall [2]
F16L 11/112	3-Punkt Untergruppe	. . . having reinforcements embedded in the wall [5]
F16L 11/115	3-Punkt Untergruppe	. . . having reinforcements not embedded in the wall [5]
F16L 11/118	3-Punkt Untergruppe	. . . having arrangements for particular purposes, e.g. electrically conducting [5]
F16L 11/12	2-Punkt Untergruppe	. . with arrangements for particular purposes, e.g. specially profiled, with protecting layer, heated, electrically conducting (F16L 11/11 takes precedence) [2]
F16L 11/127	3-Punkt Untergruppe	. . . electrically conducting [5]
F16L 11/133	3-Punkt Untergruppe	. . . buoyant [5]
F16L 11/14	1-Punkt Untergruppe	. made of rigid material, e.g. metal or hard plastics
F16L 11/15	2-Punkt Untergruppe	. . corrugated (F16L 11/16 takes precedence) [5]
F16L 11/16	2-Punkt Untergruppe	. . wound from profiled strips or bands
F16L 11/18	2-Punkt Untergruppe	. . Articulated hoses, e.g. composed of a series of rings
F16L 11/20	1-Punkt Untergruppe	. Double-walled hoses [5]
F16L 11/22	1-Punkt Untergruppe	. Multi-channel hoses [5]
F16L 11/24	1-Punkt Untergruppe	. wound from strips or bands (F16L 11/16 takes precedence) [5]
F16L 11/26	1-Punkt Untergruppe	. made of sound-absorbing materials or with sound-absorbing structure [7]
		Pipe joints; Hose nipples (special adaptations of pipe joints for use with water-closet bowls E03D 11/13) [2]
F16L 13/00	**Hauptgruppe**	**Non-disconnectable pipe joints, e.g. soldered, adhesive, or caulked joints (joints for rigid pipes of plastics F16L 47/00)**
F16L 13/007	1-Punkt Untergruppe	. specially adapted for joining pipes of dissimilar materials [5]
F16L 13/013	2-Punkt Untergruppe	. . Accessories therefor [5]
F16L 13/02	1-Punkt Untergruppe	. Welded joints
F16L 13/04	2-Punkt Untergruppe	. . with arrangements preventing overstressing

Symbol	Typ	Titel
F16L 13/06	3-Punkt Untergruppe	. . . with tension-relief of the weld by means of detachable members, e.g. divided tensioning rings, bolts in flanges
F16L 13/08	1-Punkt Untergruppe	. Soldered joints
F16L 13/10	1-Punkt Untergruppe	. Adhesive or cemented joints
F16L 13/11	2-Punkt Untergruppe	. . using materials which fill the space between parts of a joint before hardening [2]
F16L 13/12	1-Punkt Untergruppe	. with a seal made of lead, caulked packing, or the like
F16L 13/14	1-Punkt Untergruppe	. made by plastically deforming the material of the pipe, e.g. by flanging, rolling
F16L 13/16	2-Punkt Untergruppe	. . the pipe joint consisting of overlapping extremities having mutually co-operating collars [5]
F16L 15/00	**Hauptgruppe**	**Screw-threaded joints (casing joints used in deep-drilling E21B 17/08; joints sealed primarily by means other than engagement of screw-threads, see the relevant groups characterised by the sealing arrangements); Forms of screw-threads for such joints**
F16L 15/02	1-Punkt Untergruppe	. allowing substantial longitudinal adjustment by the use of a long screw-threaded part
F16L 15/04	1-Punkt Untergruppe	. with additional sealings [2]
F16L 15/06	1-Punkt Untergruppe	. characterised by the shape of the screw-thread [5]
F16L 15/08	1-Punkt Untergruppe	. with supplementary elements (F16L 15/04 takes precedence) [5]
F16L 17/00	**Hauptgruppe**	**Joints with packing adapted to sealing by fluid pressure (compensating devices F16L 51/00)**
F16L 17/02	1-Punkt Untergruppe	. with sealing rings arranged between outer surface of pipe and inner surface of sleeve or socket
F16L 17/025	2-Punkt Untergruppe	. . the sealing rings having radially directed ribs [5]
F16L 17/03	2-Punkt Untergruppe	. . having annular axial lips [2]
F16L 17/035	3-Punkt Untergruppe	. . . the sealing rings having two lips parallel to each other [5]
F16L 17/04	2-Punkt Untergruppe	. . with longitudinally split or divided sleeve
F16L 17/06	1-Punkt Untergruppe	. with sealing rings arranged between the end surfaces of the pipes or flanges or arranged in recesses in the pipe ends or flanges
F16L 17/067	2-Punkt Untergruppe	. . Plastics sealing rings [6]
F16L 17/073	3-Punkt Untergruppe	. . . the sealing rings having two lips parallel to each other [6]
F16L 17/08	2-Punkt Untergruppe	. . Metal sealing rings [5]
F16L 17/10	1-Punkt Untergruppe	. the packing being sealed by the pressure of a fluid other than the fluid in or surrounding the pipe (expansion-compensation arrangements for pipe-lines F16L 51/00) [5]
F16L 19/00	**Hauptgruppe**	**Joints in which sealing surfaces are pressed together by means of a member, e.g. a swivel nut, screwed on, or into, one of the joint parts (F16L 17/00 takes precedence; if using bolts or equivalent connecting means F16L 23/00; connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/00)**
F16L 19/02	1-Punkt Untergruppe	. Pipe ends provided with collars or flanges, integral with the pipe or not, pressed together by a screwed member
F16L 19/025	2-Punkt Untergruppe	. . the pipe ends having integral collars or flanges [5]
F16L 19/028	3-Punkt Untergruppe	. . . the collars or flanges being obtained by deformation of the pipe wall [6]
F16L 19/03	2-Punkt Untergruppe	. . with flexible sealing rings between the sealing surfaces [2]

Symbol	Typ	Titel
F16L 19/04	1-Punkt Untergruppe	. using additional rigid rings, sealing directly on at least one pipe end, which is flared either before or during the making of the connection
F16L 19/05	2-Punkt Untergruppe	. . with a rigid pressure ring between the screwed member and the exterior of the flared pipe end [5]
F16L 19/06	1-Punkt Untergruppe	. in which radial clamping is obtained by wedging action on non-deformed pipe ends
F16L 19/065	2-Punkt Untergruppe	. . the wedging action being effected by means of a ring [5]
F16L 19/07	2-Punkt Untergruppe	. . adapted for use in socket or sleeve connections [2]
F16L 19/075	2-Punkt Untergruppe	. . specially adapted for spigot-and-socket joints [5]
F16L 19/08	1-Punkt Untergruppe	. with metal rings which bite into the wall of the pipe
F16L 19/10	2-Punkt Untergruppe	. . the profile of the ring being altered [5]
F16L 19/12	3-Punkt Untergruppe	. . . with additional sealing means [5]
F16L 19/14	3-Punkt Untergruppe	. . . the rings being integral with one of the connecting parts [6]
F16L 21/00	**Hauptgruppe**	**Joints with sleeve or socket (F16L 13/00, F16L 17/00, F16L 19/00 take precedence; connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/00; specially adapted for pipes of brittle material F16L 49/00)**
F16L 21/02	1-Punkt Untergruppe	. with elastic sealing rings between pipe and sleeve or between pipe and socket, e.g. with rolling or other prefabricated profiled rings (F16L 21/06, F16L 21/08 take precedence; if adjustability is essential F16L 27/00)
F16L 21/025	2-Punkt Untergruppe	. . Rolling sealing rings [5]
F16L 21/03	2-Punkt Untergruppe	. . placed in the socket before connection (F16L 21/025 takes precedence) [5]
F16L 21/035	2-Punkt Untergruppe	. . placed around the spigot end before connection (F16L 21/025 takes precedence) [5]
F16L 21/04	2-Punkt Untergruppe	. . in which sealing rings are compressed by axially-movable members
F16L 21/05	2-Punkt Untergruppe	. . comprising a first ring being placed on a male part and a second ring in the sleeve or socket [6]
F16L 21/06	1-Punkt Untergruppe	. with a divided sleeve or ring clamping around the pipe ends (flanged joints F16L 23/00; couplings of the quick-acting type F16L 37/00)
F16L 21/08	1-Punkt Untergruppe	. with additional locking means (F16L 21/06 takes precedence; couplings of the quick-acting type F16L 37/00)
F16L 23/00	**Hauptgruppe**	**Flanged joints (F16L 13/00, F16L 17/00, F16L 19/00 take precedence; adjustable joints F16L 27/00; for hoses F16L 33/00; couplings of the quick-acting type F16L 37/00; for double-walled or multi-channel pipes, or pipe assemblies F16L 39/00; connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/00; specially adapted for pipes of brittle material F16L 49/00)**
F16L 23/02	1-Punkt Untergruppe	. the flanges being connected by members tensioned axially (F16L 23/12 takes precedence) [2, 5]
F16L 23/024	2-Punkt Untergruppe	. . characterised by how the flanges are joined to, or form an extension of, the pipes [5]
F16L 23/026	3-Punkt Untergruppe	. . . by welding [6]
F16L 23/028	3-Punkt Untergruppe	. . . the flanges being held against a shoulder [5]
F16L 23/032	2-Punkt Untergruppe	. . characterised by the shape or composition of the flanges [5]
F16L 23/036	2-Punkt Untergruppe	. . characterised by the tensioning members, e.g. specially adapted bolts or C-clamps [5]
F16L 23/04	1-Punkt Untergruppe	. the flanges being connected by members tensioned in the radial plane (F16L 23/12 takes precedence) [2, 5]
F16L 23/06	2-Punkt Untergruppe	. . connected by toggle-action levers (quick acting couplings tightened by toggle-action levers F16L 37/20) [5]

Symbol	Typ	Titel
F16L 23/08	2-Punkt Untergruppe	. . connection by tangentially arranged pin and nut [5]
F16L 23/10	3-Punkt Untergruppe	. . . with a pivoting or swinging pin [5]
F16L 23/12	1-Punkt Untergruppe	. specially adapted for particular pipes [5]
F16L 23/14	2-Punkt Untergruppe	. . for rectangular pipes [5]
F16L 23/16	1-Punkt Untergruppe	. characterised by the sealing means [5]
F16L 23/18	2-Punkt Untergruppe	. . the sealing means being rings [6]
F16L 23/20	3-Punkt Untergruppe	. . . made exclusively of metal [6]
F16L 23/22	3-Punkt Untergruppe	. . . made exclusively of a material other than metal [6]
F16L 23/24	2-Punkt Untergruppe	. . specially adapted for unequal expansion of the parts of the joint [6]
F16L 25/00	**Hauptgruppe**	**Construction or details of pipe joints not provided for in, or of interest apart from, groups F16L 13/00-F16L 23/00 (adjustable or allowing movement F16L 27/00; with fluid cut-off means F16L 29/00; quick-acting F16L 37/00; for double-walled or multi-channel pipes F16L 39/00; connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/00; specially adapted for pipes of brittle material F16L 49/00)**
F16L 25/01	1-Punkt Untergruppe	. specially adapted for realising electrical conduction between the two pipe ends of the joint or between parts thereof (electrically-conductive connections between or with tubular conductors H01R 4/60) [7]
F16L 25/02	1-Punkt Untergruppe	. specially adapted for electrically insulating the two pipe ends of the joint from each other [2]
F16L 25/03	2-Punkt Untergruppe	. . in non-disconnectable pipe joints [7]
F16L 25/04	1-Punkt Untergruppe	. comprising a collar or ring having a threaded pin rigid with the pipe-encircling member [5]
F16L 25/06	1-Punkt Untergruppe	. comprising radial locking means [5]
F16L 25/08	2-Punkt Untergruppe	. . in the form of screws, nails or the like [6]
F16L 25/10	1-Punkt Untergruppe	. Sleeveless joints between two pipes, one being introduced into the other [7]
F16L 25/12	1-Punkt Untergruppe	. Joints for pipes being spaced apart axially [7]
F16L 25/14	1-Punkt Untergruppe	. Joints for pipes of different diameters or cross-section [7]
F16L 27/00	**Hauptgruppe**	**Adjustable joints; Joints allowing movement (of the quick-acting type F16L 37/50; for double-walled or multi-channel pipes or pipe assemblies F16L 39/04; swivel joints in hose lines used for flushing boreholes E21B 21/02) [5]**
F16L 27/02	1-Punkt Untergruppe	. Universal joints, i.e. with mechanical connection allowing angular movement or adjustment of the axes of the parts in any direction
F16L 27/04	2-Punkt Untergruppe	. . with partly-spherical engaging surfaces
F16L 27/047	3-Punkt Untergruppe	. . . held in place by a screwed member having an internal spherical surface [5]
F16L 27/053	3-Punkt Untergruppe	. . . held in place by bolts passing through flanges [5]
F16L 27/06	3-Punkt Untergruppe	. . . with special sealing means between the engaging surfaces
F16L 27/067	4-Punkt Untergruppe	. . . . the sealing means being actuated by the medium pressure [5]
F16L 27/073	4-Punkt Untergruppe	. . . . one of the cooperating surfaces forming the sealing means [5]
F16L 27/08	1-Punkt Untergruppe	. allowing adjustment or movement only about the axis of one pipe
F16L 27/087	2-Punkt Untergruppe	. . Joints with radial fluid passages [6]

Symbol	Typ	Titel
F16L 27/093	3-Punkt Untergruppe	. . . of the "banjo" type, i.e. pivoting right-angle couplings [6]
F16L 27/10	1-Punkt Untergruppe	. comprising a flexible connection only
F16L 27/103	2-Punkt Untergruppe	. . in which a flexible element, e.g. a rubber-metal laminate, which undergoes constraints consisting of shear and flexure, is sandwiched between partly curved surfaces [6]
F16L 27/107	2-Punkt Untergruppe	. . the ends of the pipe being interconnected by a flexible sleeve [5]
F16L 27/108	3-Punkt Untergruppe	. . . the sleeve having the form of a bellows with only one corrugation [6]
F16L 27/11	3-Punkt Untergruppe	. . . the sleeve having the form of a bellows with multiple corrugations [6]
F16L 27/111	4-Punkt Untergruppe	. . . . the bellows being reinforced [6]
F16L 27/113	2-Punkt Untergruppe	. . the ends of the pipe being interconnected by a rigid sleeve [5]
F16L 27/12	1-Punkt Untergruppe	. allowing substantial longitudinal adjustment or movement (by use of screw-thread F16L 15/02)
F16L 29/00	**Hauptgruppe**	**Joints with fluid cut-off means (quick-acting joints with cut-off means F16L 37/28)**
F16L 29/02	1-Punkt Untergruppe	. with a cut-off device in one of the two pipe ends, the cut-off device being automatically opened when the coupling is applied [5]
F16L 29/04	1-Punkt Untergruppe	. with a cut-off device in each of the two pipe ends, the cut-off devices being automatically opened when the coupling is applied [5]
F16L 31/00	**Hauptgruppe**	**Arrangements for connecting hoses to one another or to flexible sleeves (F16L 33/00 takes precedence)**
F16L 31/02	1-Punkt Untergruppe	. for branching hoses [6]
F16L 33/00	**Hauptgruppe**	**Arrangements for connecting hoses to rigid members (hand tools for inserting fittings into hoses B25B 27/10); Rigid hose-connectors, i.e. single members engaging both hoses (connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics F16L 47/00)**
F16L 33/01	1-Punkt Untergruppe	. specially adapted for hoses having a multi-layer wall [2]
F16L 33/02	1-Punkt Untergruppe	. Hose-clips
F16L 33/025	2-Punkt Untergruppe	. . tightened by deforming radially extending loops or folds [7]
F16L 33/03	2-Punkt Untergruppe	. . Self-locking elastic clips [7]
F16L 33/035	2-Punkt Untergruppe	. . fixed by means of teeth or hooks [7]
F16L 33/04	2-Punkt Untergruppe	. . tightened by tangentially-arranged threaded pin and nut
F16L 33/06	3-Punkt Untergruppe	. . . in which the threaded pin is rigid with the hose-encircling member
F16L 33/08	2-Punkt Untergruppe	. . in which a worm coacts with a part of the hose-encircling member that is toothed like a worm-wheel
F16L 33/10	2-Punkt Untergruppe	. . with a substantially-radial tightening member
F16L 33/12	2-Punkt Untergruppe	. . with a pivoted or swinging tightening or securing member, e.g. toggle lever
F16L 33/14	2-Punkt Untergruppe	. . with a taping-bolt, i.e. winding up the end of the hose-encircling member
F16L 33/16	1-Punkt Untergruppe	. with sealing or securing means using fluid pressure
F16L 33/18	1-Punkt Untergruppe	. characterised by the use of additional sealing means
F16L 33/20	1-Punkt Untergruppe	. Undivided rings, sleeves, or like members contracted on the hose or expanded inside the hose by means of tools; Arrangements using such members

Symbol	Typ	Titel
F16L 33/207	2-Punkt Untergruppe	. . only a sleeve being contracted on the hose [5]
F16L 33/213	2-Punkt Untergruppe	. . only a sleeve being expanded inside the hose [5]
F16L 33/22	1-Punkt Untergruppe	. with means not mentioned in the preceding groups for gripping the hose between inner and outer parts
F16L 33/23	2-Punkt Untergruppe	. . the outer parts being segmented, the segments being pressed against the hose by tangentially arranged members [2]
F16L 33/24	1-Punkt Untergruppe	. with parts screwed directly on or into the hose (F16L 33/22 takes precedence)
F16L 33/26	1-Punkt Untergruppe	. specially adapted for hoses made of metal
F16L 33/28	1-Punkt Untergruppe	. for hoses with one end terminating in a radial flange or collar [5]
F16L 33/30	1-Punkt Untergruppe	. comprising parts inside the hoses only (F16L 33/24 takes precedence) [7]
F16L 33/32	1-Punkt Untergruppe	. comprising parts outside the hoses only (F16L 33/24 takes precedence) [7]
F16L 33/34	1-Punkt Untergruppe	. with bonding obtained by vulcanisation, gluing, melting, or the like [7]
F16L 35/00	**Hauptgruppe**	**Special arrangements used in connection with end fittings of hoses, e.g. safety or protecting devices**
F16L 37/00	**Hauptgruppe**	**Couplings of the quick-acting type (radially-binding sleeves F16L 17/04, F16L 21/06; connecting hoses to rigid members F16L 33/00; connections made automatically when vehicles are brought together B60D, B61G; specially adapted for lubricating devices F16N 21/00)**
F16L 37/02	1-Punkt Untergruppe	. in which the connection is maintained only by friction of the parts being joined (F16L 37/22 takes precedence)
F16L 37/04	2-Punkt Untergruppe	. . with an elastic outer part pressing against an inner part by reason of its elasticity (with locking members F16L 37/08)
F16L 37/05	3-Punkt Untergruppe	. . . tightened by the pressure of a mechanical organ [5]
F16L 37/06	3-Punkt Untergruppe	. . . tightened by fluid pressure
F16L 37/08	1-Punkt Untergruppe	. in which the connection between abutting or axially-overlapping ends is maintained by locking members (F16L 37/22-F16L 37/26 take precedence)
F16L 37/084	2-Punkt Untergruppe	. . combined with automatic locking [5]
F16L 37/086	3-Punkt Untergruppe	. . . by means of latching members pushed radially by spring-like elements [7]
F16L 37/088	3-Punkt Untergruppe	. . . by means of a split elastic ring [5]
F16L 37/091	3-Punkt Untergruppe	. . . by means of a ring provided with teeth or fingers [7]
F16L 37/092	3-Punkt Untergruppe	. . . by means of elements wedged between the pipe and the frusto-conical surface of the body of the connector [5]
F16L 37/096	3-Punkt Untergruppe	. . . by means of hooks hinged about an axis [5]
F16L 37/098	3-Punkt Untergruppe	. . . by means of flexible hooks [7]
F16L 37/10	2-Punkt Untergruppe	. . using a rotary external sleeve or ring on one part
F16L 37/107	3-Punkt Untergruppe	. . . Bayonet-type couplings [7]
F16L 37/113	3-Punkt Untergruppe	. . . the male part having lugs on its periphery penetrating into the corresponding slots provided in the female part [7]
F16L 37/12	2-Punkt Untergruppe	. . using hooks, pawls, or other movable or insertable locking members (F16L 37/084 takes precedence) [5]

Symbol	Typ	Titel
F16L 37/124	3-Punkt Untergruppe	. . . using bolts, fixed to a flange, which are able to tilt in slots of another flange, and being maintained there by the tightening of nuts [7]
F16L 37/127	3-Punkt Untergruppe	. . . using hooks hinged about an axis [5]
F16L 37/133	3-Punkt Untergruppe	. . . using flexible hooks [5]
F16L 37/138	3-Punkt Untergruppe	. . . using an axially movable sleeve [7]
F16L 37/14	3-Punkt Untergruppe	. . . Joints secured by inserting between mating surfaces an element, e.g. a piece of wire, a pin, a chain
F16L 37/15	4-Punkt Untergruppe	. . . . the element being a wedge [7]
F16L 37/16	3-Punkt Untergruppe	. . . Joints tightened by the action of wedge-shaped hinged hooks
F16L 37/18	3-Punkt Untergruppe	. . . Joints tightened by eccentrics or rotatable cams
F16L 37/20	3-Punkt Untergruppe	. . . Joints tightened by toggle-action levers
F16L 37/22	1-Punkt Untergruppe	. in which the connection is maintained by means of balls, rollers, or helical springs under radial pressure between the parts
F16L 37/23	2-Punkt Untergruppe	. . by means of balls [5]
F16L 37/24	1-Punkt Untergruppe	. in which the connection is made by inserting one member axially into the other and rotating it to a limited extent, e.g. with bayonet-action
F16L 37/244	2-Punkt Untergruppe	. . the coupling being co-axial with the pipe [5]
F16L 37/248	3-Punkt Untergruppe	. . . Bayonet-type couplings [5]
F16L 37/252	3-Punkt Untergruppe	. . . the male part having lugs on its periphery penetrating into the corresponding slots provided in the female part [5]
F16L 37/256	2-Punkt Untergruppe	. . the coupling not being coaxial with the pipe [5]
F16L 37/26	1-Punkt Untergruppe	. in which the connection is made by transversely moving the parts together, with or without their subsequent rotation
F16L 37/28	1-Punkt Untergruppe	. with fluid cut-off means
F16L 37/30	2-Punkt Untergruppe	. . with fluid cut-off means in each of two pipe-end fittings [5]
F16L 37/32	3-Punkt Untergruppe	. . . at least one of two lift valves being opened automatically when the coupling is applied [5]
F16L 37/33	4-Punkt Untergruppe	. . . . the lift valves being of the ball type [7]
F16L 37/34	4-Punkt Untergruppe	. . . . at least one of the lift valves being of the sleeve type, i.e. a sleeve being telescoped over an inner cylindrical wall [5]
F16L 37/35	4-Punkt Untergruppe	. . . . at least one of the valves having an axial bore communicating with lateral apertures [7]
F16L 37/36	3-Punkt Untergruppe	. . . with two lift valves being actuated to initiate the flow through the coupling after the two coupling parts are locked against withdrawal [5]
F16L 37/367	3-Punkt Untergruppe	. . . with two gate valves or sliding valves [7]
F16L 37/373	3-Punkt Untergruppe	. . . with two taps or cocks [7]
F16L 37/38	2-Punkt Untergruppe	. . with fluid cut-off means in only one of two pipe-end fittings [5]
F16L 37/40	3-Punkt Untergruppe	. . . with a lift valve being opened automatically when the coupling is applied [5]

Symbol	Typ	Titel
F16L 37/407	4-Punkt Untergruppe	. . . . the lift valve being of the ball type [7]
F16L 37/413	4-Punkt Untergruppe	. . . . the lift valve being of the sleeve type, i.e. a sleeve being telescoped over an inner cylindrical wall [7]
F16L 37/42	4-Punkt Untergruppe	. . . . the valve having an axial bore communicating with lateral apertures [5]
F16L 37/44	3-Punkt Untergruppe	. . . with one lift valve being actuated to initiate the flow through the coupling after the two coupling parts are locked against withdrawal [5]
F16L 37/46	3-Punkt Untergruppe	. . . with a gate valve or sliding valve [5]
F16L 37/47	3-Punkt Untergruppe	. . . with a tap or cock [7]
F16L 37/48	1-Punkt Untergruppe	. for fastening a pipe on the end of a tap [5]
F16L 37/50	1-Punkt Untergruppe	. adjustable; allowing movement of the parts joined [5]
F16L 37/52	2-Punkt Untergruppe	. . Universal joints, i.e. with a mechanical connection allowing angular movement or adjustment of the axes of the parts in any direction [5]
F16L 37/53	2-Punkt Untergruppe	. . allowing adjustment or movement only about the axis of one pipe [7]
F16L 37/54	2-Punkt Untergruppe	. . for pipes under pressure which are supported only on one side [5]
F16L 37/56	1-Punkt Untergruppe	. for double-walled or multi-channel pipes [5]
F16L 37/58	1-Punkt Untergruppe	. the extremities of the two halves of the joint being pressed against each other without being locked in position [5]
F16L 37/60	1-Punkt Untergruppe	. with plug and fixed wall housing [7]
F16L 37/62	1-Punkt Untergruppe	. pneumatically or hydraulically actuated [7]
F16L 39/00	**Hauptgruppe**	**Joints or fittings for double-walled or multi-channel pipes or pipe assemblies**
F16L 39/02	1-Punkt Untergruppe	. for hoses
F16L 39/04	1-Punkt Untergruppe	. allowing adjustment or movement
F16L 39/06	1-Punkt Untergruppe	. of the multiline swivel type, e.g. comprising a plurality of axially mounted modules [7]
F16L 41/00	**Hauptgruppe**	**Branching pipes; Joining pipes to walls (F16L 39/00 takes precedence; connections not designed for conveying fluid F16B 9/00; joints suitable for connecting together pipe ends, see the relevant groups)**
F16L 41/02	1-Punkt Untergruppe	. Branch units, e.g. made in one piece, welded, riveted
F16L 41/03	2-Punkt Untergruppe	. . comprising junction pieces for four or more pipe members [5]
F16L 41/04	1-Punkt Untergruppe	. Tapping pipe walls, i.e. making connections through the walls of pipes while they are carrying fluids; Fittings therefor (apparatus or operations relating to metal-working steps, see the relevant classes for metal-working)
F16L 41/06	2-Punkt Untergruppe	. . making use of attaching means embracing the pipe
F16L 41/08	1-Punkt Untergruppe	. Joining pipes to walls or pipes, the joined pipe axis being perpendicular to the plane of a wall or to the axis of another pipe (F16L 41/02 takes precedence) [2]
F16L 41/10	2-Punkt Untergruppe	. . the extremity of the pipe being screwed into the wall [5]
F16L 41/12	2-Punkt Untergruppe	. . using attaching means embracing the pipe [5]
F16L 41/14	2-Punkt Untergruppe	. . by screwing an intermediate part against the inside or outside of the wall [5]

Symbol	Typ	Titel
F16L 41/16	2-Punkt Untergruppe	. . the branch pipe comprising fluid cut-off means [5]
F16L 41/18	1-Punkt Untergruppe	. the branch pipe being movable [7]
F16L 43/00	**Hauptgruppe**	**Bends; Siphons (with cleaning apertures F16L 45/00; siphons for water-closets E03D 11/18; siphons in general F04F 10/00)**
F16L 43/02	1-Punkt Untergruppe	. adapted to make use of special securing means
F16L 45/00	**Hauptgruppe**	**Pipe units with cleaning aperture and closure therefor**
F16L 47/00	**Hauptgruppe**	**Connecting arrangements or other fittings specially adapted to be made of plastics or to be used with pipes made of plastics (packing, for joints, adapted to sealing by fluid pressure F16L 17/00)**
F16L 47/02	1-Punkt Untergruppe	. Welded joints; Adhesive joints
F16L 47/03	2-Punkt Untergruppe	. . Welded joints with an electrical resistance incorporated in the joint [7]
F16L 47/04	1-Punkt Untergruppe	. with a swivel nut or collar engaging the pipe [2]
F16L 47/06	1-Punkt Untergruppe	. with sleeve or socket formed by or in the pipe end [2]
F16L 47/08	2-Punkt Untergruppe	. . with sealing rings arranged between the outer surface of one pipe end and the inner surface of the sleeve or socket, the sealing rings being placed previously in the sleeve or socket [7]
F16L 47/10	3-Punkt Untergruppe	. . . the sealing rings being maintained in place by additional means [7]
F16L 47/12	2-Punkt Untergruppe	. . with additional locking means [7]
F16L 47/14	1-Punkt Untergruppe	. Flanged joints [7]
F16L 47/16	1-Punkt Untergruppe	. Screw-threaded joints [7]
F16L 47/18	1-Punkt Untergruppe	. Adjustable joints; Joints allowing movement [7]
F16L 47/20	1-Punkt Untergruppe	. based principally on specific properties of plastics [7]
F16L 47/22	2-Punkt Untergruppe	. . using shrink-down material [7]
F16L 47/24	2-Punkt Untergruppe	. . for joints between metal and plastics pipes [7]
F16L 47/26	1-Punkt Untergruppe	. for branching pipes; for joining pipes to walls; Adaptors therefor [7]
F16L 47/28	2-Punkt Untergruppe	. . Joining pipes to walls or to other pipes, the axis of the joined pipe being perpendicular to the wall or to the axis of the other pipe [7]
F16L 47/30	3-Punkt Untergruppe	. . . using attaching means embracing the pipe [7]
F16L 47/32	2-Punkt Untergruppe	. . Branch units, e.g. made in one piece, welded, riveted [7]
F16L 47/34	2-Punkt Untergruppe	. . Tapping pipes, i.e. making connections through walls of pipes while carrying fluids; Fittings therefor [7]
F16L 49/00	**Hauptgruppe**	**Connecting arrangements, e.g. joints, specially adapted for pipes of brittle material, e.g. glass, earthenware**
F16L 49/02	1-Punkt Untergruppe	. Joints with a sleeve or socket [5]
F16L 49/04	1-Punkt Untergruppe	. Flanged joints [5]
F16L 49/06	1-Punkt Untergruppe	. Joints in which sealing surfaces are pressed together by means of a member, e.g. swivel nut, screwed on, or into, one of the joint parts [7]
F16L 49/08	1-Punkt Untergruppe	. Adjustable joints; Joints allowing movement [7]
F16L 51/00	**Hauptgruppe**	**Expansion-compensation arrangements for pipe-lines (telescopic pipes F16L 27/12)**

Symbol	Typ	Titel
F16L 51/02	1-Punkt Untergruppe	. making use of a bellows or an expansible folded or corrugated tube
F16L 51/03	2-Punkt Untergruppe	. . comprising two or more bellows [5]
F16L 51/04	1-Punkt Untergruppe	. making use of bends, e.g. lyre-shaped
F16L 53/00	**Hauptgruppe**	**Heating or cooling pipes or pipe systems (preventing freezing of pipes, thawing frozen pipes E03B 7/12, E03B 7/14; pipe-line systems, pipe-lines F17D)**
F16L 55/00	**Hauptgruppe**	**Devices or appurtenances for use in, or in connection with, pipes or pipe systems (F16L 1/00-F16L 53/00, F16L 57/00, F16L 59/00 take precedence; repairing or joining pipes on or under water F16L 1/26; nozzles B05B; cleaning of pipes B08B 9/02, e.g. removal of blockages B08B 9/027; devices for preventing bursting of water pipes by freezing E03B 7/10; for domestic plumbing installations E03C 1/00; arrangements for sealing leaky tubes or conduits of heat-exchangers F28F 11/00)**
F16L 55/02	1-Punkt Untergruppe	. Energy absorbers; Noise absorbers (in valves F16K 47/00)
F16L 55/027	2-Punkt Untergruppe	. . Throttle passages (influencing fluid flow F15D 1/00; control of fluid flow G05D 7/00) [5]
F16L 55/033	2-Punkt Untergruppe	. . Noise absorbers (F16L 55/027 takes precedence) [5]
F16L 55/035	3-Punkt Untergruppe	. . . in the form of specially adapted hangers or supports [7]
F16L 55/04	1-Punkt Untergruppe	. Devices damping pulsations or vibrations in fluids
F16L 55/045	2-Punkt Untergruppe	. . specially adapted to prevent or minimise the effects of water hammer [5]
F16L 55/05	3-Punkt Untergruppe	. . . Buffers therefor (accumulators F15B 1/04) [5]
F16L 55/052	4-Punkt Untergruppe	. . . . Pneumatic reservoirs [7]
F16L 55/053	5-Punkt Untergruppe	. . . . . the gas in the reservoir being separated from the fluid in the pipe [7]
F16L 55/054	6-Punkt Untergruppe	. . . . . . the reservoir being placed in or around the pipe from which it is separated by a sleeve-shaped membrane [7]
F16L 55/055	3-Punkt Untergruppe	. . . Valves therefor [5]
F16L 55/07	1-Punkt Untergruppe	. Arrangement or mounting of devices, e.g. valves, for venting or aerating or draining (arrangement of draining devices in water-supply systems E03B 7/08; apparatus for draining F16K, F16T; venting or aerating devices per seF16K 24/00) [2]
F16L 55/09	1-Punkt Untergruppe	. Air-conditioning, e.g. de-watering, in pneumatic systems (in general F24)
F16L 55/10	1-Punkt Untergruppe	. Means for stopping flow in pipes or hoses (F16L 29/00, F16L 37/28 take precedence; for covering leaks F16L 55/16; valves F16K) [1, 7]
F16L 55/103	2-Punkt Untergruppe	. . by temporarily freezing liquid sections in the pipe [7]
F16L 55/105	2-Punkt Untergruppe	. . Closing devices introduced radially into the pipe or hose [5]
F16L 55/11	2-Punkt Untergruppe	. . Plugs [5]
F16L 55/115	2-Punkt Untergruppe	. . Caps [5]
F16L 55/12	2-Punkt Untergruppe	. . by introducing into the pipe a member expandable in situ (inflatable cut-off valves F16K 7/10)
F16L 55/124	3-Punkt Untergruppe	. . . introduced radially into the pipe or hose [5]
F16L 55/128	3-Punkt Untergruppe	. . . introduced axially into the pipe or hose [5]
F16L 55/13	4-Punkt Untergruppe	. . . . the closure device being a plug fixed by plastic deformation [7]
F16L 55/132	4-Punkt Untergruppe	. . . . the closure device being a plug fixed by radially deforming the packing [5]

Symbol	Typ	Titel
F16L 55/134	5-Punkt Untergruppe	. . . . . by means of an inflatable packing [7]
F16L 55/136	4-Punkt Untergruppe	. . . . the closure device being a plug fixed by radially expanding or deforming a split ring, hooks or the like [5]
F16L 55/16	1-Punkt Untergruppe	. Devices for covering leaks in pipes or hoses, e.g. hose-menders [1, 7]
F16L 55/162	2-Punkt Untergruppe	. . from inside the pipe (specially adapted for bends, branch units, branching pipes, or the like F16L 55/179) [5, 7]
F16L 55/163	3-Punkt Untergruppe	. . . a ring, a band or a sleeve being pressed against the inner surface of the pipe [7]
F16L 55/164	3-Punkt Untergruppe	. . . a sealing fluid being introduced in the pipe (F16L 55/1645 takes precedence) [7]
F16L 55/1645	3-Punkt Untergruppe	. . . a sealing material being introduced inside the pipe by means of a tool moving in the pipe [7]
F16L 55/165	3-Punkt Untergruppe	. . . a pipe being inserted in the damaged section [5, 7]
F16L 55/168	2-Punkt Untergruppe	. . from outside the pipe (specially adapted for bends, branch units, branching pipes, or the like F16L 55/179) [5, 7]
F16L 55/17	3-Punkt Untergruppe	. . . by means of rings, bands or sleeves pressed against the outside surface of the pipe or hose (hose-clips for connecting hoses to rigid members F16L 33/02) [5, 7]
F16L 55/172	4-Punkt Untergruppe	. . . . the ring, band or sleeve being tightened by a tangentially arranged threaded pin and a nut [5, 7]
F16L 55/175	3-Punkt Untergruppe	. . . by using materials which fill a space around the pipe before hardening [5, 7]
F16L 55/178	3-Punkt Untergruppe	. . . by clamping an outer gasket against a joint with sleeve or socket [5, 7]
F16L 55/179	2-Punkt Untergruppe	. . specially adapted for bends, branch units, branching pipes or the like [7]
F16L 55/18	1-Punkt Untergruppe	. Appliances for use in repairing pipes (F16L 55/10 takes precedence)
F16L 55/24	1-Punkt Untergruppe	. Preventing accumulation of dirt or other matter in pipes, e.g. by traps, by strainers
F16L 55/26	1-Punkt Untergruppe	. Pigs or moles, i.e. devices movable in a pipe or conduit with or without self-contained propulsion means (tunnel railway systems B61B 13/10; conveying articles through pipes or tubes, e.g. tube mail systems, B65G 51/00) [5]
F16L 55/28	2-Punkt Untergruppe	. . Constructional aspects [6]
F16L 55/30	3-Punkt Untergruppe	. . . of the propulsion means, e.g. towed by cables [6]
F16L 55/32	4-Punkt Untergruppe	. . . . being self-contained [6]
F16L 55/34	5-Punkt Untergruppe	. . . . . the pig or mole being moved step by step [6]
F16L 55/36	5-Punkt Untergruppe	. . . . . jet driven [6]
F16L 55/38	4-Punkt Untergruppe	. . . . driven by fluid pressure [6]
F16L 55/40	3-Punkt Untergruppe	. . . of the body [6]
F16L 55/42	4-Punkt Untergruppe	. . . . gelled or degradable [6]
F16L 55/44	4-Punkt Untergruppe	. . . . expandable [6]
F16L 55/46	2-Punkt Untergruppe	. . Launching or retrieval of pigs or moles [6]
F16L 55/48	2-Punkt Untergruppe	. . Indicating the position of the pig or mole in the pipe or conduit [6]
F16L 57/00	**Hauptgruppe**	**Protection of pipes or objects of similar shape against external or internal damage or wear (supporting of pipes inside other pipes or sleeves F16L 7/00; used in connection with end fittings of hoses F16L 35/00; protection of pipes or pipe fittings against corrosion or incrustation F16L**

Symbol	Typ	Titel
		58/00; protection thereof during transport B65D, e.g. B65D 59/00)
F16L 57/02	1-Punkt Untergruppe	. against cracking or buckling [7]
F16L 57/04	1-Punkt Untergruppe	. against fire or other external sources of extreme heat [7]
F16L 57/06	1-Punkt Untergruppe	. against wear (F16L 57/04 takes precedence) [7]
F16L 58/00	**Hauptgruppe**	**Protection of pipes or pipe fittings against corrosion or incrustation (supporting of pipes inside other pipes or sleeves F16L 7/00; compound tubes F16L 9/14; cleaning pipes or tubes B08B 9/02)**
F16L 58/02	1-Punkt Untergruppe	. by means of internal or external coatings (coatings for thermal insulation F16L 59/00; methods or machines for applying coatings, see the relevant places, e.g. B28B 21/94) [2]
F16L 58/04	2-Punkt Untergruppe	. . Coatings characterised by the materials used (F16L 58/16 takes precedence; compositions, see the relevant classes, e.g. C04B) [2]
F16L 58/06	3-Punkt Untergruppe	. . . by cement, concrete, or the like [2]
F16L 58/08	3-Punkt Untergruppe	. . . by metal [2]
F16L 58/10	3-Punkt Untergruppe	. . . by rubber or plastics [2]
F16L 58/12	3-Punkt Untergruppe	. . . by tar or bitumen [2]
F16L 58/14	3-Punkt Untergruppe	. . . by ceramic or vitreous materials [2]
F16L 58/16	2-Punkt Untergruppe	. . the coating being in the form of a bandage (apparatus for covering cores by winding B65H 81/00) [2]
F16L 58/18	1-Punkt Untergruppe	. specially adapted for pipe fittings [2]
F16L 59/00	**Hauptgruppe**	**Thermal insulation in general (heat, sound insulation in buildings E04B; heat insulation of steam engines F01B 31/08; heat insulation in rotary piston machines or engines F01C 21/06; heat insulation of pumps F04C 29/04; thermal insulation of pressure vessels F17C 1/12; vessels not under pressure, with provision for insulation F17C 3/02)**
F16L 59/02	1-Punkt Untergruppe	. Shape or form of insulating materials, with or without coverings integral with the insulating materials (chemical aspects, see the relevant classes)
F16L 59/04	1-Punkt Untergruppe	. Arrangements using dry fillers, e.g. using slag wool
F16L 59/05	2-Punkt Untergruppe	. . in prefabricated shells or covers [2]
F16L 59/06	1-Punkt Untergruppe	. Arrangements using an air layer or vacuum
F16L 59/065	2-Punkt Untergruppe	. . using vacuum (F16L 59/075 takes precedence) [7]
F16L 59/07	2-Punkt Untergruppe	. . the air layer being enclosed by one or more layers of insulation [7]
F16L 59/075	2-Punkt Untergruppe	. . the air layer or the vacuum being delimited by longitudinal channels distributed around the circumference of a tube [7]
F16L 59/08	1-Punkt Untergruppe	. Means for preventing radiation, e.g. with metal foil
F16L 59/10	1-Punkt Untergruppe	. Bandages or covers for the protection of the insulation, e.g. against the influence of the environment or against mechanical damage (integral with insulating materials F16L 59/02)
F16L 59/11	2-Punkt Untergruppe	. . Rigid covers for elbows [7]
F16L 59/12	1-Punkt Untergruppe	. Arrangements for supporting insulation from the wall or body insulated, e.g. by means of spacers between pipe and heat-insulating material; Arrangements specially adapted for supporting insulated bodies
F16L 59/125	2-Punkt Untergruppe	. . Helical spacers [7]

Symbol	Typ	Titel
F16L 59/13	2-Punkt Untergruppe	. . Resilient supports [7]
F16L 59/135	2-Punkt Untergruppe	. . Hangers or supports specially adapted for insulated pipes [7]
F16L 59/14	1-Punkt Untergruppe	. Arrangements for the insulation of pipes or pipe systems (F16L 59/02-F16L 59/12 take precedence)
F16L 59/147	2-Punkt Untergruppe	. . the insulation being located inwardly of the outer surface of the pipe [5]
F16L 59/15	2-Punkt Untergruppe	. . for underground pipes [7]
F16L 59/153	2-Punkt Untergruppe	. . for flexible pipes [5]
F16L 59/16	2-Punkt Untergruppe	. . Arrangements specially adapted to local requirements at flanges, junctions, valves, or the like (means in or on valves for heating or cooling F16K 49/00)
F16L 59/18	3-Punkt Untergruppe	. . . adapted for joints [5]
F16L 59/20	4-Punkt Untergruppe	. . . . for non-disconnectable joints [5]
F16L 59/21	3-Punkt Untergruppe	. . . adapted for expansion-compensation devices [7]
F16L 59/22	3-Punkt Untergruppe	. . . adapted for bends [5]
		Indexing scheme associated with groups F16L 55/26-F16L 55/48, relating to uses and applications of pigs or moles. [6]
F16L 101/00	**Hauptgruppe**	**Uses or applications of pigs or moles [6]**
F16L 101/10	1-Punkt Untergruppe	. Treating the inside of pipes [6]
F16L 101/12	2-Punkt Untergruppe	. . Cleaning [6]
F16L 101/14	2-Punkt Untergruppe	. . Drying [6]
F16L 101/16	2-Punkt Untergruppe	. . Coating by application of fluent materials, e.g. painting [6]
F16L 101/18	2-Punkt Untergruppe	. . Lining other than coating [6]
F16L 101/20	1-Punkt Untergruppe	. Expelling gases or fluids [6]
F16L 101/30	1-Punkt Untergruppe	. Inspecting, measuring or testing [6]
F16L 101/40	1-Punkt Untergruppe	. Separating transported fluids [6]
F16L 101/50	1-Punkt Untergruppe	. Pulling cables or the like [6]
F16L 101/60	1-Punkt Untergruppe	. Stopping leaks [6]
F16L 101/70	1-Punkt Untergruppe	. Drill-well operations [6]