

CPC COOPERATIVE PATENT CLASSIFICATION

E FIXED CONSTRUCTIONS

BUILDING

E04 BUILDING (layered materials, layered products in general [B32B](#))

E04B GENERAL BUILDING CONSTRUCTIONS; WALLS, e.g. PARTITIONS; ROOFS; FLOORS; CEILINGS; INSULATION OR OTHER PROTECTION OF BUILDINGS (border constructions of opening in walls, floors or ceilings [E06B 1/00](#); {electromagnetic shielding [H05K 9/0001](#)})

NOTE

In this subclass, the following term is used with the meaning indicated:

- "ceiling" includes all the finishing material concealing the underside of the load-carrying ceiling structure or roof structure.

WARNINGS

- The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

E04B 1/682	covered by	E04B 1/68
E04B 1/684	covered by	E04B 1/68
E04B 1/686	covered by	E04B 1/68
- In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00	Constructions in general; Structures which are not restricted either to walls, e.g. partitions, or floors or ceilings or roofs (scaffolds, shutterings E04G; structures specially adapted for buildings for special purposes, general layout of buildings, e.g. modular co-ordination, E04H; the particular parts of buildings, see the relevant groups for those parts)	1/04	. . the elements consisting of concrete, e.g. reinforced concrete, or other stone-like material
1/0007	. {Base structures; Cellars}	1/043	. . . {Connections specially adapted therefor}
1/0015	. . {Cellars constructed from prefabricated units}	1/046	. . . . {using reinforcement loops protruding from the elements}
1/0023	. {Building characterised by incorporated canalisations (E04B 1/34869 , E03C 1/01 , E04C 2/52 , E04F 17/00 take precedence; canalisation per se F16L ; conduits for ventilation, heating systems or air-conditioning F24)}	1/06	. . . the elements being prestressed
1/003	. {Balconies; Decks}	1/08	. . the elements consisting of metal
1/0038	. . {Anchoring devices specially adapted therefor with means for preventing cold bridging}	1/10	. . the elements consisting of wood
1/0046	. {Loggias}	1/12	. . the elements consisting of other material
2001/0053	. {Buildings characterised by their shape or layout grid}	1/14	. . the elements being composed of two or more materials (of reinforced concrete E04B 1/04)
2001/0061	. . {Buildings with substantially curved horizontal cross-section, e.g. circular}	1/16	. Structures made from masses, e.g. of concrete, cast or similarly formed <i>in situ</i> with or without making use of additional elements, such as permanent forms, substructures to be coated with load-bearing material (E04B 1/32 - E04B 1/36 take precedence)
2001/0069	. . {Prismatic shaped buildings with substantially triangular vertical cross-section}	1/161	. . {with vertical and horizontal slabs, both being partially cast <i>in situ</i> }
2001/0076	. . {Buildings with specific right-angled horizontal layout grid}	1/162	. . . {with a central core, used as form, in order to form a continuous concrete shell}
2001/0084	. . {Buildings with non right-angled horizontal layout grid, e.g. triangular or hexagonal}	1/163	. . {with vertical and horizontal slabs, only the vertical slabs being partially cast <i>in situ</i> (E04B 2/86 takes precedence)}
2001/0092	. . . {Small buildings with hexagonal or similar horizontal cross-section}	1/164	. . {with vertical and horizontal slabs, only the horizontal slabs being partially cast <i>in situ</i> }
1/02	. Structures consisting primarily of load-supporting, block-shaped, or slab-shaped elements (E04B 1/32 - E04B 1/36 take precedence)	1/165	. . {with elongated load-supporting parts, cast <i>in situ</i> (E04B 1/161 , E04B 1/163 and E04B 1/164 take precedence)}
		1/166	. . {with curved surfaces, at least partially cast <i>in situ</i> in order to make a continuous concrete shell structure (E04B 1/169 takes precedence)}
		1/167	. . {with permanent forms made of particular materials, e.g. layered products}
		1/168	. . . {flexible}

- 1/169 {inflatable}
- 1/18 . Structures comprising elongated load-supporting parts, e.g. columns, girders, skeletons ([E04B 1/32](#) - [E04B 1/36](#) take precedence; elongated load-supporting parts as elements, trusses, truss-like structures [E04C 3/00](#))
- 1/185 . . {Connections not covered by [E04B 1/21](#) and [E04B 1/2403](#), e.g. connections between structural parts of different material}
- 1/19 . . Three-dimensional framework structures {(folded structures and grid-like formations acting as shell structures [E04B 7/10](#))}
- 1/1903 . . . {Connecting nodes specially adapted therefor}
- 1/1906 {with central spherical, semispherical or polyhedral connecting element}
- 1/1909 {with central cylindrical connecting element}
- 1/1912 {with central cubical connecting element}
- NOTE**
- Subgroup [E04B 1/19](#) takes precedence over subgroups [E04B 1/20](#) - [E04B 1/30](#)
- 2001/1915 {with strut engaging means at the edges of the cube}
- 2001/1918 {with connecting nodes having flat radial connecting surfaces}
- 2001/1921 {with connecting nodes having radial connecting stubs}
- 2001/1924 . . . {Struts specially adapted therefor}
- 2001/1927 {of essentially circular cross section}
- 2001/193 {with flattened connecting parts, e.g. ends}
- 2001/1933 {of polygonal, e.g. square, cross section}
- 2001/1936 {Winged profiles, e.g. with a L-, T-, U- or X-shaped cross section}
- 2001/1939 {Inflatable struts}
- 2001/1942 {Struts adjustable in length}
- 2001/1945 {Wooden struts}
- 2001/1948 {Concrete struts}
- 2001/1951 {uninterrupted struts situated in the outer planes of the framework}
- 2001/1954 {uninterrupted struts connecting alternately with the outer planes of the framework, e.g. zig-zagging struts}
- 2001/1957 . . . {Details of connections between nodes and struts}
- 2001/196 {Screw connections with axis parallel to the main axis of the strut}
- 2001/1963 {Screw connections with axis at an angle, e.g. perpendicular, to the main axis of the strut}
- 2001/1966 {Formlocking connections other than screw connections}
- 2001/1969 {Ball and socket type connection}
- 2001/1972 {Welded or glued connection}
- 2001/1975 . . . {Frameworks where the struts are directly connected to each other, i.e. without interposed connecting nodes or plates}
- 2001/1978 . . . {Frameworks assembled from preformed subframes, e.g. pyramids}
- 2001/1981 . . . {characterised by the grid type of the outer planes of the framework}
- 2001/1984 {rectangular, e.g. square, grid}
- 2001/1987 {triangular grid}
- 2001/199 . . . {Details of roofs, floors or walls supported by the framework}
- 2001/1993 . . . {Details of framework supporting structure, e.g. posts or walls}
- 2001/1996 {Tensile-integrity structures, i.e. structures comprising compression struts connected through flexible tension members, e.g. cables}
- 1/20 . . the supporting parts consisting of concrete, e.g. reinforced concrete, or other stonelike material
- 1/21 . . . Connections specially adapted therefor
- 1/215 {comprising metallic plates or parts}
- 1/22 . . . with parts being prestressed
- 1/24 . . the supporting parts consisting of metal
- 1/2403 . . . {Connection details of the elongated load-supporting parts}
- 2001/2406 {Connection nodes}
- 2001/2409 {Hooks, dovetails or other interlocking connections}
- 2001/2412 {Keyhole connections}
- 2001/2415 {Brackets, gussets, joining plates}
- 2001/2418 {Details of bolting}
- 2001/2421 {Socket type connectors}
- 2001/2424 {Clamping connections other than bolting or riveting}
- 2001/2427 {using adhesives or hardening masses}
- 2001/243 {Assembling by non resilient deformation other than riveting}
- 2001/2433 {using a removable key}
- 2001/2436 {Snap-fit connections}
- 2001/2439 {Adjustable connections, e.g. using elongated slots or threaded adjustment elements}
- 2001/2442 {Connections with built-in weakness points}
- 2001/2445 {Load-supporting elements with reinforcement at the connection point other than the connector}
- 2001/2448 {Connections between open section profiles}
- 2001/2451 {Connections between closed section profiles}
- 2001/2454 {Connections between open and closed section profiles}
- 2001/2457 {Beam to beam connections}
- 2001/246 {Post to post connections}
- 2001/2463 {Connections to foundations}
- 2001/2466 . . . {Details of the elongated load-supporting parts}
- 2001/2469 {Profile with an array of connection holes}
- 2001/2472 {Elongated load-supporting part formed from a number of parallel profiles}
- 2001/2475 {Profile with an undercut grooves for connection purposes}
- 2001/2478 {Profile filled with concrete}
- 2001/2481 . . . {Details of wall panels}
- 2001/2484 . . . {Details of floor panels or slabs}
- 2001/2487 . . . {Portico type structures}
- 2001/249 . . . {Structures with a sloping roof}
- 2001/2493 . . . {Structures with a vaulted roof}
- 2001/2496 . . . {Shear bracing therefor}
- 1/26 . . the supporting parts consisting of wood
- 1/2604 . . . {Connections specially adapted therefor ([shear dowels E04B 1/486](#), [E04B 1/49](#))}

- 1/2608 {Connectors made from folded sheet metal ([E04B 1/2612](#) takes precedence)}
- 1/2612 {Joist hangers}
- 2001/2616 {Hinged connections of wooden members}
- 2001/262 {Connection node with interlocking of specially shaped wooden members, e.g. puzzle type connection}
- 2001/2624 {with dovetail-type connections}
- 2001/2628 {Interlocking connectors, e.g. with hooks or dovetails, added to the elongated wooden members}
- 2001/2632 {with dovetail-type connections}
- 2001/2636 {with connectors located in slots of the wooden members}
- 2001/264 {Glued connections}
- 2001/2644 {Brackets, gussets or joining plates ([E04B 2001/2628](#) takes precedence)}
- 2001/2648 {located in slots of the elongated wooden members}
- 2001/2652 {Details of nailing, screwing, or bolting}
- 2001/2656 {Bent or curved bolts}
- 2001/266 {Socket type connectors}
- 2001/2664 {using a removable key}
- 2001/2668 {for members with a round cross-section}
- 2001/2672 {for members formed from a number of parallel sections}
- 2001/2676 {Connector nodes ([E04B 2001/262](#) takes precedence)}
- 2001/268 {Connection to foundations}
- 2001/2684 {with metal connectors}
- 2001/2688 {self adjusting, e.g. for compensation of shrinkage}
- 2001/2692 {End to end connections of elongated members along their common longitudinal axis}
- 2001/2696 {Shear bracing}
- 1/28 . . the supporting parts consisting of other material
- 1/30 . . the supporting parts being composed of two or more materials; Composite steel and concrete constructions ([of reinforced concrete E04B 1/20](#))
- 1/32 . . Arched structures; Vaulted structures; Folded structures ([\(E04B 1/34378](#) takes precedence; [\) vaulted roofs E04B 7/08](#))
- 1/3205 . . {Structures with a longitudinal horizontal axis, e.g. cylindrical or prismatic structures}
- 1/3211 . . {Structures with a vertical rotation axis or the like, e.g. semi-spherical structures}
- 2001/3217 . . {Auxiliary supporting devices used during erection of the arched structures}
- 2001/3223 . . {Theoretical polygonal geometry therefor}
- 2001/3229 . . {constructed using a boom}
- 2001/3235 . . {having a grid frame}
- 2001/3241 . . . {Frame connection details}
- 2001/3247 {Nodes}
- 2001/3252 . . . {Covering details}
- 2001/3258 . . {comprised entirely of a single self-supporting panel}
- 2001/3264 . . . {hardened in situ}
- 2001/327 . . {comprised of a number of panels or blocs connected together forming a self-supporting structure}
- 2001/3276 . . . {Panel connection details}
- 2001/3282 {Panels connected together exclusively at their corners}
- 2001/3288 . . . {Panel frame details, e.g. flanges of steel sheet panels}
- 2001/3294 . . {with a faceted surface}
- 1/34 . . Extraordinary structures, e.g. with suspended or cantilever parts supported by masts or tower-like structures enclosing elevators or stairs; Features relating to the elastic stability ([E04B 1/342](#), [E04B 1/343](#), [E04B 1/348](#) take precedence; for floors [E04B 5/43](#); buildings for special purposes, e.g. withstanding earthquake, [E04H](#))
- 1/3404 . . {supported by masts or tower-like structures}
- 1/3408 . . {Extraordinarily-supported small buildings}
- 1/3412 . . . {mainly supported by a central column or footing ([E04B 1/3416](#) takes precedence)}
- 1/3416 . . {Structures comprising mainly a central support column and a cantilevered roof}
- 1/342 . . Structures covering a large free area, whether open-sided or not, e.g. hangars, halls ([roof trusses E04C 3/00](#); non-structural features for specified purposes, [see the relevant groups of E04H](#))
- 1/343 . . Structures characterised by movable, separable, or collapsible parts, e.g. for transport ([movable roof parts E04B 7/16](#); floatable buildings [B63B](#); small prefabricated buildings, transportable as a whole [E04H 1/12](#); small garages [E04H 6/02](#); tents or canopies, in general [E04H 15/00](#) {; containers [B65G](#)})
- 1/34305 . . {telescopic}
- 1/3431 . . . {with only one level of nesting}
- 1/34315 . . {characterised by separable parts}
- 1/34321 . . . {mainly constituted by panels}
- 1/34326 . . . {mainly constituted by longitudinal elements}
- 1/34331 . . . {mainly constituted by three-dimensional elements}
- 1/34336 . . {Structures movable as a whole}
- 1/34342 . . . {Skirtings therefor}
- 1/34347 . . . {Anchoring means therefor}
- 1/34352 . . . {Base structures or supporting means therefor}
- 1/34357 . . {Foldable or retractable structures}
- 1/34363 . . . {with provisions to raise or lower the whole structure}
- 1/34368 . . . {Wheeled arch-type structures}
- 1/34373 {collapsible}
- 1/34378 . . . {Structures deriving their rigidity from concertina folds}
- 1/34384 . . {Assembling details for foldable, separable, collapsible or retractable structures}
- 2001/34389 . . {Set of building elements forming a self-contained package for transport before assembly}
- 2001/34394 . . {Vertical telescopic structures}
- 1/344 . . with hinged parts
- 1/3441 . . . {with articulated bar-shaped elements}
- 1/3442 . . . {folding out from a core cell}
- 1/3444 {with only lateral unfolding}
- 1/3445 . . . {foldable in a flat stack of parallel panels}
- 1/3447 {Portal- or saddle-shaped structures}
- 1/3448 . . . {with rotating shell-forming segments}
- 1/346 . . Rotary buildings; Buildings with rotary units, e.g. rooms
- 1/3465 . . . {with adapted utilities connections, e.g. for water or electricity}

- 1/348 . Structures composed of units comprising at least considerable parts of two sides of a room, e.g. box-like or cell-like units closed or in skeleton form
 - 1/34807 . . {Elements integrated in a skeleton}
 - 1/34815 . . {Elements not integrated in a skeleton}
 - 1/34823 . . . {the supporting structure consisting of concrete}
 - 1/3483 . . . {the supporting structure consisting of metal}
 - 1/34838 . . . {the supporting structure consisting of wood}
 - 1/34846 . . . {the supporting structure consisting of other specified material, e.g. of plastics}
 - 1/34853 . . . {the supporting structure being composed of two or more materials}
 - 1/34861 . . . {particular arrangement of habitable rooms or their component parts; modular co-ordination}
 - 1/34869 . . {Elements for special technical purposes, e.g. with a sanitary equipment (combination of baths, douches, sinks, wash-basins, closets or urinals [A47K 4/00](#); plumbing installations for baths, douches, or the like, [E03C 1/01](#); panels serving for locating conduits [E04C 2/521](#); ducts for receiving installation lines [E04F 17/08](#))}
 - 2001/34876 . . {with a sloping or barrel roof}
 - 2001/34884 . . . {creating a living space between several units}
 - 2001/34892 . . {Means allowing access to the units, e.g. stairs or cantilevered gangways}
 - 1/35 . Extraordinary methods of construction, e.g. lift-slab, jack-block ([E04B 1/34](#) takes precedence; falsework, shuttering for shaping walls, floors, ceilings or roofs [in situ](#) [E04G 11/04](#); conveying or assembling of building materials [E04G 21/00](#); working measures on existing buildings [E04G 23/00](#))
 - 1/3505 . . {characterised by the [in situ](#) moulding of large parts of a structure ([E04B 1/3511](#), [E04B 1/3516](#), [E04B 1/3522](#), [E04B 1/3533](#), [E04B 1/3544](#), [E04B 1/3555](#) take precedence)}
 - 1/3511 . . {Lift-slab; characterised by a purely vertical lifting of floors or roofs or parts thereof}
 - 1/3516 . . {characterised by erecting a vertical structure and then adding the floors from top to bottom}
 - 1/3522 . . {characterised by raising a structure and then adding structural elements under it ([E04B 1/3511](#), [E04B 1/3516](#), [E04B 1/3533](#) take precedence)}
 - 1/3527 . . . {the structure being a roof}
 - 1/3533 . . {characterised by the raising of hingedly-connected building elements, e.g. arches, portal frames ([E04B 1/355](#) takes precedence)}
 - 1/3538 . . . {the elements being a floor slab with hingedly-connected wall panels}
 - 1/3544 . . {characterised by the use of a central column to lift and temporarily or permanently support structural elements ([E04B 1/3516](#) and [E04B 1/355](#) take precedence)}
 - 1/355 . . {characterised by the tilting up of whole buildings or sections thereof, e.g. walls, portal frames}
 - 1/3555 . . {Constructions using straw bales}
 - 2001/3561 . . {adding living space above existing structures}
 - 2001/3566 . . {mounting masonry against a forwork}
 - 2001/3572 . . {using templates or jigs to set out buildings or parts thereof}
 - 2001/3577 . . {prefabricating a building and moving it as a whole to the erection site}
 - 2001/3583 . . {using permanent tensioning means, e.g. cables or rods, to assemble or rigidify structures (not pre- or poststressing concrete), e.g. by tying them around the structure}
 - 2001/3588 . . {using special lifting or handling devices, e.g. gantries, overhead conveying rails}
 - 2001/3594 . . . {inflatable lifting or handling devices}
 - 1/36 . Bearings or like supports allowing movement ([for bridges](#) [E01D 19/04](#); [buildings with-standing earthquakes](#) [E04H 9/02](#))
 - 1/38 . Connections for building structures in general
- NOTE**
- Connections specially adapted for particular building parts or for particular building structures are classified in the groups for those parts or structures, e.g. in groups [E04B 1/21](#), [E04B 2/00](#), [E04B 5/00](#), [E04B 7/00](#) or [E04B 9/00](#). Joints not specially adapted for building construction, or of more general application, are classified in the appropriate subclasses, e.g. [F16B](#).
- 1/383 . . {Connection of concrete parts using adhesive materials, e.g. mortar or glue}
 - 2001/386 . . {Nailable or screwable inserts for foam panels}
 - 1/40 . . {Separate connecting elements (for forms, falsework, or shutterings [E04G 17/00](#); releasable clips or clamps, hooks, wedges, wall-dowels, nails, bolts, rivets, screws, wood-screws [F16B](#))}
 - 2001/405 . . . {Brackets}
 - 1/41 . . . Connecting devices specially adapted for embedding in concrete ({joist hangers [E04B 1/2612](#); shear dowels [E04B 1/483](#); spacers {other than masonry wall ties} for cavity walls [E04B 2/30](#), [E04B 2/44](#); connectors for reinforcing elements [E04C 5/16](#); supporting devices for connector reinforcing rods for concrete walls [E04G 21/125](#); fastening frames to the border of openings [E06B 1/56](#))}
 - 1/4107 {Longitudinal elements having an open profile, with the opening parallel to the concrete or masonry surface, i.e. anchoring rails}
 - 1/4114 {Elements with sockets ([E04B 1/4107](#) takes precedence)}
 - 1/4121 {with internal threads or non-adjustable captive nuts}
 - 1/4128 {receiving adjustable or removal nuts}
 - 1/4135 {receiving removal bolt heads ([E04B 1/415](#) takes precedence)}
 - 1/4142 {with transverse hook- or loop-receiving parts ([E04B 1/415](#) takes precedence)}
 - 1/415 {with captive and extendable anchoring parts, e.g. spring-loaded bolts, hanging rings}
 - 1/4157 {Longitudinally-externally threaded elements extending from the concrete or masonry, e.g. anchoring bolt with embedded head}
 - 1/4164 {with an adjustment sleeve}
 - 1/4171 {Nailable or non-threaded screwable elements (dowels [F16B 13/00](#))}
 - 1/4178 {Masonry wall ties ([with insulation-layer locating devices](#) [E04B 1/7616](#); [replacing or adding wall ties](#) [E04G 23/0222](#))}

- 1/4185 {for cavity walls with both wall leaves made of masonry (spacers for permanent forms [E04B 2/86](#))}
- 2001/4192 {attached to concrete reinforcing elements, e.g. rods or wires}
- 1/48 . . . Dowels, i.e. members adapted to penetrate the surfaces of two parts and to take the shear stresses
- 1/483 {Shear dowels to be embedded in concrete}
- 1/486 {Shear dowels for wood ([E04B 1/49](#) takes precedence)}
- 1/49 with self-penetrating parts, e.g. claw dowels {[nail plates F16B 15/0023](#)}
- 1/54 . . {Joints substantially without separate connecting elements, e.g. jointing by inter-engagement (welded, glued, or the like joints, in general [F16B](#))}
- 1/58 . . of bar-shaped building elements {(framework connections [E04B 1/21](#), [E04B 1/2403](#), [E04B 1/2604](#))}
- 1/5806 . . . {with a cross-section having an open profile}
- 1/5812 {of substantially I - or H - form}
- 1/5818 {of substantially U - form}
- 1/5825 . . . {with a closed cross-section}
- 1/5831 {of substantially rectangular form}
- 1/5837 {of substantially circular form}
- 1/5843 {with ends provided with protuberances}
- 1/585 {with separate connection devices}
- 2001/5856 {using the innerside thereof}
- 2001/5862 . . . {Angularly adjustable connections without hinge pin}
- 2001/5868 . . . {Hinged connections}
- 2001/5875 . . . {using exterior clamping plates or shells}
- 2001/5881 . . . {using an undercut groove, e.g. dovetail groove}
- 2001/5887 . . . {using connectors with sockets}
- 2001/5893 . . . {Puzzle type connections}
- 1/61 . . of slab-shaped building elements with each other
- 1/6104 . . . {the overlapping ends of the slabs connected together}
- 1/6108 . . . {the frontal surfaces of the slabs connected together}
- 1/6112 {by clamping, e.g. friction, means on lateral surfaces}
- 1/6116 {by locking means on lateral surfaces}
- 1/612 {by means between frontal surfaces}
- 1/6125 {with protrusions on the one frontal surface co-operating with recesses in the other frontal surface}
- 1/6129 {the connection made by expansion}
- 1/6133 {the connection made by friction-grip}
- 1/6137 {the connection made by formlocking}
- 1/6141 {the connection made by an additional locking key}
- 1/6145 {with recesses in both frontal surfaces co-operating with an additional connecting element}
- 1/615 {the connection made by expansion}
- 1/6154 {the connection made by friction-grip}
- 1/6158 {the connection made by formlocking}
- 1/6162 {the connection made by an additional locking key}
- 1/6166 {with protrusions on both frontal surfaces}
- 1/617 {with one protrusion on each frontal surface}
- 1/6175 {with two or more protrusions on each frontal surface}
- 1/6179 {with protrusions and recesses on each frontal surface}
- 1/6183 {with rotatable locking means co-operating with a recess (similar devices for sliding doors [E05B 65/0817](#))}
- 1/6187 {by means on top and/or bottom surfaces of the slabs}
- 2001/6191 {by means on the corners of the slabs}
- 2001/6195 . . . {the slabs being connected at an angle, e.g. forming a corner}
- 1/62 . . Insulation or other protection; Elements or use of specified material therefor (chemical compositions [C01 - C11](#); implements for applying insulation or sealings [E04F 21/00](#); buildings to withstand or to provide protection against external undesired influences [E04H 9/00](#); sealing pipes in walls or partitions [F16L 5/02](#); shielding against dangerous radiation [G21F](#); constructions of particular parts of buildings, [see the relevant groups for those parts](#))
- 1/625 . . {Sheets or foils allowing passage of water vapor but impervious to liquid water; house wraps}
- 1/64 . . for making damp-proof; Protection against corrosion (sealings [E04B 1/66](#))
- NOTE**
- Group [E04B 1/64](#) is not used for classification. Documents are classified in subgroups only or in groups [E04B 1/66](#), [E04B 1/70](#)
- 1/642 . . . {Protecting metallic construction elements against corrosion (for concrete reinforcing elements made of steel [E04C 5/01](#); anodic or cathodic protection [C23F 13/00](#))}
- 1/644 . . . {Damp-proof courses (in combination with lintels [E04C 3/02](#))}
- 1/646 {obtained by removal and replacement of a horizontal layer of an existing wall}
- 1/648 {obtained by injection or infiltration of water-proofing agents into an existing wall}
- 1/66 . . Sealings ({damp-proof courses [E04B 1/644](#); fire-proof sealings [E04B 1/948](#)}; additions of anti-leak properties to plaster [C04B](#); bituminous sealing masses [C08L 95/00](#); sealings for hydraulic engineering work in general [E02B 3/16](#); against ground humidity or ground water [E02D 31/02](#); coverings against rain or other precipitations of the atmosphere [E04D](#); composition of material or manufacture of sealing foils, [see the relevant classes for these foils](#))
- 1/665 . . . {Sheets or foils impervious to water and water vapor}

- 1/68 . . . of joints, e.g. expansion joints ([packing for joints in roads or airfields E01C 11/02](#); expansion joints for bridges [E01D 19/06](#); sealing joints between foundation piles [E02D 5/14](#); joints in foundation structures [E02D 29/16](#); devices for sealing the spaces or joints between roof-covering elements [E04D 1/36](#); sealing joints between roof-covering elements [E04D 3/38](#); {construction of joints for flooring or floor layers composed of a number of similar elements [E04F 15/02005](#)}; construction of joints for flooring or floor layers made of masses [in situ E04F 15/14](#))
- 1/6801 {Fillings therefor}
- 1/6803 {Joint covers ([E04B 1/6815](#) takes precedence)}
- 1/6804 {specially adapted for floor parts}
- 1/6806 {Waterstops ([E04B 1/6807](#) takes precedence)}
- 1/6807 {Expansion elements for parts cast [in situ](#)}
- 1/6809 {Reverse side strips}
- 1/681 {for free moving parts}
- 1/6812 {Compressable seals of solid form}
- 1/6813 {Compressable seals of hollow form ([E04B 1/6816](#) takes precedence)}
- 1/6815 {Expansion elements specially adapted for wall or ceiling parts}
- 1/6816 {Porous tubular seals for injecting sealing material ([filling of cracks in existing buildings E04G 23/02](#))}
- 2001/6818 {Joints with swellable parts}
- 1/70 . . Drying or keeping dry, e.g. by air vents ({[using damp-proof courses E04B 1/644](#); [using sealings, e.g. sealing masses or foils, E04B 1/66](#)}; during erection [E04G 21/28](#))
- 1/7007 . . . {by using electricity, e.g. electro-osmosis ([electrochemical desalination or re-alkalisation of reinforced concrete C04B 41/00](#))}
- 1/7015 . . . {by heating the ambient air}
- 1/7023 . . . {by collecting water in basements}
- 1/703 . . . {Evacuating water from walls made from hollow bricks}
- 1/7038 . . . {Evacuating water from cavity walls, e.g. by using weep holes}
- 1/7046 {using trays}
- 1/7053 {Grills for weep holes}
- 1/7061 {Devices for preventing blockage of weep holes, e.g. a blockage caused by falling mortar}
- 1/7069 . . . {by ventilating ([means for ventilating in floors E04B 5/48](#), in ceilings [E04B 9/02](#), in building blocks [E04C 1/392](#), in building panels [E04C 2/521](#), in roofs [E04D 13/16](#); ventilating wall coverings [E04F 13/007](#))}
- 1/7076 {Air vents for walls}
- 1/7084 {with Knappen systems, i.e. atmospheric siphons}
- 1/7092 {Temporary mechanical ventilation of damp layers, e.g. insulation of a floating floor}
- 1/72 . . Pest control ([by keeping dry E04B 1/70](#); [impregnation of wood or like materials B27K](#))
- 1/74 . . Heat, sound or noise insulation, absorption, or reflection ([forms of, or arrangements in, rooms for influencing or directing sound E04B 1/99](#)). Other building methods affording favourable thermal or acoustical conditions, e.g. accumulating of heat within walls ([fire protection E04B 1/94](#); elements chiefly adapted for structural purposes [E04C 1/00 - E04C 3/00](#); chiefly adapted for surface coverings [E04F 13/00](#); as underlayers for floor coverings [E04F 15/18](#); closures for wall or like openings [E06B](#))
- 2001/741 {Insulation elements with markings, e.g. identification or cutting template}
- 2001/742 {Use of special materials; Materials having special structures or shape}
- 2001/743 {Animal products, e.g. wool, feathers}
- 2001/745 {Vegetal products, e.g. plant stems, barks}
- 2001/746 {Recycled materials, e.g. made of used tires, bumpers or newspapers}
- 2001/747 {Corrugated materials}
- 2001/748 {Honeycomb materials}
- 1/76 . . . specifically with respect to heat only ([heat insulation in general F16L 59/00](#))
- 1/7604 {fillings for cavity walls}
- 1/7608 {comprising a prefabricated insulating layer, disposed between two other layers or panels}
- 1/7612 {in combination with an air space}
- 1/7616 {with insulation-layer locating devices combined with wall ties}
- 1/762 {Exterior insulation of exterior walls}
- 1/7625 {Details of the adhesive connection of the insulation to the wall}
- 1/7629 {Details of the mechanical connection of the insulation to the wall}
- 1/7633 {Dowels with enlarged insulation retaining head}
- 1/7637 {Anchoring of separate elements through the lining to the wall}
- 1/7641 {Elements for window or door openings, or for corners of the building}
- 1/7645 {with ventilation means for the insulation}
- 1/765 {Bottom edge finishing profile}
- 1/7654 {comprising an insulating layer, disposed between two longitudinal supporting elements, e.g. to insulate ceilings}
- 1/7658 {comprising fiber insulation, e.g. as panels or loose filled fibres}
- 1/7662 {comprising fiber blankets or batts}
- 1/7666 {Connection of blankets or batts to the longitudinal supporting elements}
- 1/767 {Blankets or batts with connecting flanges}
- 1/7675 {Insulating linings for the interior face of exterior walls}
- 2001/7679 {Means preventing cold bridging at the junction of an exterior wall with an interior wall or a floor}
- 2001/7683 {Fibrous blankets or panels characterised by the orientation of the fibres}
- 2001/7687 {Crumble resistant fibrous blankets or panels using adhesives or meltable fibres}
- 2001/7691 {Heat reflecting layers or coatings}
- 2001/7695 {Panels with adjustable width}

1/78	. . . .	Heat insulating elements (E04B 1/7662 takes precedence)	2001/8485	. . . . .	{the opening being restricted, e.g. forming Helmholtz resonators}
1/80	. . . . .	slab-shaped	2001/849	. . . . .	{Groove or slot type openings}
1/803	. . . . .	{with vacuum spaces included in the slab}	2001/8495	. . . . .	{the openings going through from one face to the other face of the element}
1/806	. . . . .	{with air or gas pockets included in the slab}	1/86	. . . . .	slab-shaped
1/82	. . .	specifically with respect to sound only ({of floors or ceilings E04B 9/001 ; of flooring E04F 15/20 }; noise damping in ducts or channels E04F 17/00 ; {sound damping devices for pipes F16L 55/033 }; noise damping in general G10K 11/00)	1/88	. . .	Insulating elements for both heat and sound
1/8209	. . . .	{sound absorbing devices (E04B 1/8218 , E04B 1/8227 take precedence)}	1/90	. . . .	slab-shaped
1/8218	. . . .	{soundproof enclosures}	1/92	. .	Protection against other undesired influences or dangers (buildings providing protection against external dangers E04H 9/00 ; shielding against dangerous radiation G21F)
1/8227	. . . .	{screens (E04B 2/74 takes precedence; for road or railway traffic E01F); Arrangements of sound-absorbing elements, e.g. baffles}	2001/925	. . .	{Protection against harmful electro-magnetic or radio-active radiations, e.g. X-rays}
1/8236	. . . . .	{Stage shells}	1/94	. . .	against fire ({fire protection of partitions E04B 2/7403 , E04B 2/7409 ; supporting constructions for ceilings having the capability of expansion in case of fire E04B 9/08 }; fire-fighting A62C , {e.g. fire prevention or containment A62C 2/00 }; impregnation of wood or similar materials B27K ; {fireproof paints C09D 5/18 ; fireproofing materials C09K 21/00 ; flame-resistant papers D21H 5/0002 ; coverings or linings, e.g. for walls or ceilings, in general E04F 13/00 }; fireproof doors E06B 5/16 ; {firebreak devices for pipes or the like passing through walls F16L 5/04 ; protection of pipes by means of non-inflammable material F16L 57/04)}
2001/8245	. . . . .	{Machines for manufacturing, shaping, piercing or filling sound insulating elements}	1/941	. . . . .	{Building elements specially adapted therefor}
2001/8254	. . . . .	{Soundproof supporting of building elements, e.g. stairs, floor slabs or beams, on a structure}	1/942	. . . . .	{slab-shaped}
2001/8263	. . . . .	{Mounting of acoustical elements on supporting structure, e.g. framework or wall surface}	1/943	. . . . .	{elongated}
2001/8272	. . . . .	{Resiliently mounted wall cladding acting as a diaphragmatic sound damper}	1/944	. . . . .	{covered with fire-proofing material}
2001/8281	. . . . .	{Flat elements mounted parallel to a supporting surface with an acoustically active air gap between the elements and the mounting surface}	1/945	. . . . .	{Load-supporting structures specially adapted therefor}
2001/829	. . . . .	{Flat elements mounted at an angle, e.g. right angle, to the supporting surface}	1/946	. . . . .	{Protection against smoke or toxic gases}
1/84	. . . . .	Sound-absorbing elements	1/947	. . . . .	{by closing openings in walls or the like in the case of fire (fire-proof doors E06B 5/16)}
1/8404	. . . . .	{block-shaped}	1/948	. . . . .	{Fire-proof sealings or joints (for doors or windows E06B 5/164)}
1/8409	. . . . .	{sheet-shaped}	2001/949	. . . . .	{Construction elements filled with liquid, e.g. water, either permanently or only in case of fire}
2001/8414	. . . . .	{with non-planar face, e.g. curved, eggcrate shaped}	1/98	. . .	against vibrations or shocks (on foundations E02D 31/08); against mechanical destruction, e.g. by air-raids (against incendiary damage only E04B 1/94 ; finishing work therefor E04F ; buildings withstanding earthquake or the like, shelters, arrangements of splintercatching walls E04H 9/00)
2001/8419	. . . . .	{Acoustical cones or the like, e.g. for anechoic chambers}	1/985	. . . . .	{involving active or passive dynamic mass damping systems}
2001/8423	. . . . .	{Tray or frame type panels or blocks, with or without acoustical filling}	1/99	. .	Room acoustics, i.e. forms of, or arrangements in, rooms for influencing or directing sound (E04B 1/82 takes precedence; acoustics in general G10K 11/00 ; electric signal processing for producing a reverberation or echo sound G10K 15/08)
2001/8428	. . . . .	{containing specially shaped acoustical bodies, e.g. funnels, egg-crates, fanfolds}	1/994	. .	{Acoustical surfaces with adjustment mechanisms}
2001/8433	. . . . .	{with holes in their face}			
2001/8438	. . . . .	{Slot shaped holes}			
2001/8442	. . . . .	{Tray type elements}			
2001/8447	. . . . .	{with two facing trays}			
2001/8452	. . . . .	{with peripheral frame members}			
2001/8457	. . . . .	{Solid slabs or blocks}			
2001/8461	. . . . .	{layered}			
2001/8466	. . . . .	{with an intermediate layer formed of lines or dots of elastic material}			
2001/8471	. . . . .	{with non-planar interior transition surfaces between layers, e.g. faceted, corrugated}			
2001/8476	. . . . .	{with acoustical cavities, with or without acoustical filling}			
2001/848	. . . . .	{the cavities opening onto the face of the element}			

2/00	Walls, e.g. partitions, for buildings; Wall construction with regard to insulation; Connections specially adapted to walls (connections for building structures in general E04B 1/38; insulation for buildings in general E04B 1/62; building elements of relatively thin form for parts of buildings E04C 2/00)	2002/0295	. . {of which the width is equal to the wall thickness}
		2002/0297	. . {of which the width is less than the wall thickness}
2/02	. built-up from layers of building elements	2/04	. . Walls having neither cavities between, nor in, the solid elements
2002/0202	. . {Details of connections}	2/06	. . . using elements having specially-designed means for stabilising the position
2002/0204	. . . {Non-undercut connections, e.g. tongue and groove connections}	2/08	. . . . by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails
2002/0206	. . . . {of rectangular shape}	2/10	. . . . by filling material with or without reinforcements in small channels in, or in grooves between, the elements
2002/0208	. . . . {of trapezoidal shape}	2/12	. . . using elements having a general shape differing from that of a parallelepiped
2002/021	. . . . {of triangular shape}	2/14	. . Walls having cavities in, but not between, the elements, i.e. each cavity being enclosed by at least four sides forming part of one single element
2002/0213	. . . . {of round shape}	2/16	. . . using elements having specially-designed means for stabilising the position
2002/0215	. . . . {with separate protrusions}	2/18	. . . . by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails
2002/0217	. . . . . {of prismatic shape}	2/20	. . . . by filling material with or without reinforcements in small channels in, or in grooves between, the elements
2002/0219	. . . . . {of pyramidal shape}	2/22	. . . using elements having a general shape differing from that of a parallelepiped
2002/0221	. . . . . {of conical shape}	2/24	. . . the walls being characterised by fillings in some of the cavities forming load-bearing pillars or beams
2002/0223	. . . . . {of cylindrical shape}	2/26	. . . the walls being characterised by fillings in all cavities in order to form a wall construction
2002/0226	. . . . {with tongues and grooves next to each other on the end surface}	2/28	. . Walls having cavities between, but not in, the elements; Walls of elements each consisting of two or more parts kept in distance by means of spacers, all parts being solid
2002/0228	. . . . {with tongues next to each other on one end surface and grooves next to each other on opposite end surface}	2/30	. . . using elements having specially designed means for stabilising the position; Spacers for cavity walls {(masonry wall ties E04B 1/4178)}
2002/023	. . . . {with rabbets, e.g. stepped}	2/32	. . . . by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails
2002/0232	. . . {Undercut connections, e.g. using undercut tongues and grooves}	2/34	. . . . by filling material with or without reinforcements in small channels in, or in grooves between, the elements
2002/0234	. . . . {Angular dovetails}	2/36	. . . using elements having a general shape differing from that of a parallelepiped
2002/0236	. . . . . {tapered, i.e. dovetail narrows in the direction of tongue or groove}	2/38	. . . the walls being characterised by fillings in some of the cavities forming load-bearing pillars or beams
2002/0239	. . . . {Round dovetails}	2/40	. . . the walls being characterised by fillings in all cavities in order to form a wall construction
2002/0241	. . . . . {tapered, i.e. dovetail narrows in the direction of tongue or groove}	2/42	. . Walls having cavities between, as well as in, the elements; Walls of elements each consisting of two or more parts, kept in distance by means of spacers, at least one of the parts having cavities
2002/0243	. . . {Separate connectors or inserts, e.g. pegs, pins or keys}	2/44	. . . using elements having specially-designed means for stabilising the position; Spacers for cavity walls {(masonry wall ties E04B 1/4178)}
2002/0245	. . . . {Pegs or pins}		
2002/0247	. . . . {Strips or bars}		
2002/025	. . . . {U-shaped, e.g. brackets}		
2002/0252	. . . . {Dovetail keys}		
2002/0254	. . . . {Tie rods}		
2002/0256	. . {Special features of building elements}		
2002/0258	. . . {Gripping or handling aids}		
2002/026	. . . {Splittable building elements}		
2002/0263	. . . {Building elements for making angled walls}		
2002/0265	. . . {Building elements for making arcuate walls}		
2002/0267	. . . {Building elements with the appearance of several bricks}		
2002/0269	. . . {Building elements with a natural stone facing}		
2002/0271	. . . {Building elements with the appearance of rock layers}		
2002/0273	. . . {Adhesive layers other than mortar between building elements}		
2002/0276	. . . . {Separate layers or strips}		
2002/0278	. . . . {forming a unity with the building elements}		
2002/028	. . . {Spacers between building elements}		
2002/0282	. . . . {Separate spacers}		
2002/0284	. . . . {forming a unity with the building elements}		
2002/0286	. . . {Building elements with coatings}		
2002/0289	. . . {Building elements with holes filled with insulating material}		
2002/0291	. . . . {loose material}		
2002/0293	. . . . {solid material}		

2/46	. . . . by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails	2/7401	. . {assembled using panels without a frame or supporting posts, with or without upper or lower edge locating rails}
2/48	. . . . by filling material with or without reinforcements in small channels in, or in grooves between, the elements	2/7403	. . . {with special measures for sound or thermal insulation including fire protection}
2/50	. . . using elements having a general shape differing from that of a parallelepiped	2/7405	. . . {with free upper edge, e.g. for use as office space dividers}
2/52	. . . the walls being characterised by fillings in some of the cavities forming load-bearing pillars or beams	2/7407	. . {assembled using frames with infill panels or coverings only; made-up of panels and a support structure incorporating posts (E04B 2/78 and E04B 2/80 take precedence)}
2/54	. . . the walls being characterised by fillings in all cavities in order to form a wall construction	2/7409	. . . {special measures for sound or thermal insulation, including fire protection}
2/56	. {Load-bearing} walls of framework or pillarwork; Walls incorporating load-bearing elongated members (E04B 2/74 , E04B 2/88 take precedence; pillars E04C 3/30)	2/7411	. . . . {Details for fire protection}
2/562	. . {with fillings between the load-bearing elongated members}	2/7412	. . . . {Posts or frame members specially adapted for reduced sound or heat transmission}
2002/565	. . {with a brick veneer facing}	2/7414	. . . . {Posts or frame members with projections for holding sound or heat insulating fillings}
2002/567	. . {with posts or pillars made from a plurality of smaller prefabricated elements}	2/7416	. . . {with free upper edge, e.g. for use as office space dividers}
2/58	. . with elongated members of metal	2002/7418	. . . . {Accessories supported on the free upper edge, e.g. auxiliary panels, noise abatement devices}
2/60	. . . characterised by special cross-section of the elongated members	2002/742	. . . . {Details of panel top cap}
2/62	. . . . the members being formed of two or more elements in side-by-side relationship	2/7422	. . . . {with separate framed panels without intermediary support posts}
2/64	. . with elongated members of concrete	2/7424	. . . . . {Glazing details}
2/66	. . . characterised by special cross-section of the elongated members	2/7425	. . . . . {Details of connection of panels (E04B 2/7427 takes precedence)}
2/68	. . . made by filling-up wall cavities (E04B 2/24 , E04B 2/38 , E04B 2/52 take precedence)	2/7427	. . . . . {with adjustable angular connection of panels}
2/70	. . with elongated members of wood	2/7429	. . . . . {using flexible hinges}
2/701	. . . {with integrated supporting and obturation function}	2/7431	. . . . . {using hinges having two parallel rotation axes}
2/702	. . . . {with longitudinal horizontal elements (E04B 2/704 , E04B 2/705 take precedence)}	2/7433	. . . . . {with panels and support posts}
2/703	. . . . {with longitudinal vertical elements}	2/7435	. . . . . {Glazing details}
2/704	. . . . {with longitudinal horizontal elements shorter than the length of a wall}	2/7437	. . . . . {with panels hooked onto posts (E04B 2/7438 takes precedence)}
2/705	. . . . {with longitudinal horizontal elements placed between columns}	2/7438	. . . . . {with adjustable angular connection of panels to posts}
2/706	. . . {with supporting function}	2/744	. . . . . {using angularly-spaced longitudinal grooves of the posts}
2/707	. . . . {obturation by means of panels}	2/7442	. . . . . {hinged connections (E04B 2/7444 takes precedence)}
2/708	. . . . {obturation by means of longitudinal elements with a convex external surface}	2/7444	. . . . . {panels hooked onto the rim or in a groove of circular posts}
2/709	. . . . {obturation by means of longitudinal elements with a plane external surface}	2002/7446	. . . . {Post-like profiles for connecting panels at an angle}
2/72	. {Non-load-bearing} walls of elements of relatively thin form {with respect to the thickness of the wall} (E04B 2/56 , E04B 2/74 , E04B 2/88 take precedence; with joint fillings acting as framework or pillars E04B 2/68 ; elements E04C 2/00)	2/7448	. . . {with separate framed panels without intermediary posts, extending from floor to ceiling}
2/721	. . {connections specially adapted therefor}	2/745	. . . . {Glazing details}
2/723	. . {constituted of gypsum elements}	2/7451	. . . . {with false tongue joints}
2002/725	. . . {Corner or angle connection details}	2/7453	. . . {with panels and support posts, extending from floor to ceiling}
2002/726	. . . {Clips for butt-joining plasterboards}	2/7455	. . . . {Glazing details}
2002/728	. . . {Butt-joining plasterboards in the space between two studs}	2/7457	. . . . {with wallboards attached to the outer faces of the posts, parallel to the partition (E04B 2/7459 takes precedence)}
2/74	. Removable non-load-bearing partitions; Partitions with a free upper edge (framed panels E04C 2/38) {modular coordination}	2/7459	. . . . {with telescoping posts to compensate for floor or ceiling irregularities}
		2002/7461	. . {Details of connection of sheet panels to frame or posts}
		2002/7462	. . . {using resilient connectors, e.g. clips}

- 2002/7464 {clasping a flange of a profile}
- 2002/7466 . . . {using hooks}
- 2002/7468 . . . {using magnets}
- 2002/747 . . . {using hook and loop-type fasteners}
- 2002/7472 . . . {using adhesives}
- 2002/7474 . . . {using releasable connectors actuatable with a key or a tool}
- 2002/7475 . . . {using connectors with claws penetrating the sheet panels}
- 2002/7477 . . . {Details of connections using screws or nails}
- 2002/7479 . . {Details of connection of flexible sheets to frame or posts}
- 2002/7481 . . {Locating rails with adjustable curvature}
- 2002/7483 . . {Details of furniture, e.g. tables or shelves, associated with the partitions}
- 2002/7485 . . . {Load supports therefor placed between wall studs}
- 2002/7487 . . {Partitions with slotted profiles}
- 2002/7488 . . {Details of wiring}
- 2002/749 . . {Partitions with screw-type jacks}
- 2002/7492 . . . {used in partitions extending from floor to ceiling}
- 2002/7494 {the jacks being located at the top or the side of the partition}
- 2002/7496 . . {using wedges to level or hold the partition in place}
- 2002/7498 . . {Partitions for clean rooms}
- 2/76 . . with framework or posts of metal {(details of connections, thresholds or skirtings [E04B 2/82](#))}
- 2/761 . . . {L-connections}
- 2/762 . . . {Cross connections}
- 2/763 {with one continuous profile, the perpendicular one passing continuously through the first one}
- 2/764 {with two interrupted profiles}
- 2/765 {with one continuous profile, the perpendicular one being interrupted}
- 2/766 . . . {T-connections}
- 2/767 {Connections between wall studs and upper or lower locating rails}
- 2/768 {allowing vertical movement of upper rail with respect to the stud, e.g. by using slots in the rail or stud}
- 2/78 . . . characterised by special cross-section of the frame-members {as far as important for securing wall panels to a framework with or without the help of cover-strips (separate connecting means, e.g. clip [E04B 2/74](#); connections between uprights and cross-members [E04B 2/76](#))}
- 2/7809 {of single or multiple tubular form}
- 2/7818 {of substantially rectangular form}
- 2/7827 {with all four sides of the profiles having substantially similar undercut grooves or connecting projections}
- 2/7836 {with only two sides of the profiles having substantially similar undercut grooves or connecting projections}
- 2/7845 {of curved cross-section, e.g. circular}
- 2/7854 {of open profile}
- 2/7863 {of substantially I - section with web perpendicular to plane of partition}
- 2/7872 {of substantially H - section with flanges perpendicular to plane of partition}
- 2/7881 {of substantially S - or Z - section; having a shape or cross-section adapted for gripping or overlapping panels by means of at least partially complementary shaped parallel elements}
- 2/789 {of substantially U- or C- section}
- 2/80 . . with framework or posts of wood
- 2/82 . . characterised by the manner in which edges are connected to the building; Means therefor; Special details of easily-removable partitions {as far as related to the connection with other parts of the building}
- 2/821 . . . {Connections between two opposed surfaces (i.e. floor and ceiling) by means of a device offering a restraining force acting in the plane of the partition}
- 2/822 {Elastic connections, e.g. inflated joints}
- 2/824 {restrained elastically at one surface and inelastically at the opposing surface}
- 2/825 . . . {the connection between the floor and the ceiling being achieved without any restraining forces acting in the plane of the partition}
- 2/827 . . . {Partitions constituted of sliding panels}
- 2/828 . . . {Connections between partitions and structural walls}
- 2/84 . . Walls made by casting, pouring, or tamping in situ ([E04B 2/02](#), [E04B 2/56](#) take precedence; forms therefor [E04G 11/06](#); working of concrete or similar masses able to be cast or poured in situ [E04G 21/02](#))
- 2/842 . . {by projecting or otherwise applying hardenable masses to the exterior of a form leaf}
- 2/845 . . . {the form leaf comprising a wire netting, lattice or the like}
- 2/847 . . . {the form leaf comprising an insulating foam panel}
- 2/86 . . made in permanent forms
- 2/8605 . . . {without spacers}
- 2/8611 . . . {with spacers being embedded in at least one form leaf}
- 2/8617 {with spacers being embedded in both form leaves}
- 2/8623 . . . {with spacers and at least one form leaf being monolithic}
- 2/8629 {with both form leaves and spacers being monolithic}
- 2/8635 . . . {with ties attached to the inner faces of the forms ([E04B 2/8611](#) and [E04B 2/8623](#) take precedence)}
- 2/8641 {using dovetail-type connections}
- 2/8647 . . . {with ties going through the forms}
- 2/8652 . . . {with ties located in the joints of the forms}
- 2/8658 . . . {using wire netting, a lattice or the like as form leaves}
- 2/8664 . . . {using flexible material as form leaves ([E04B 2/8658](#) takes precedence)}
- 2002/867 . . . {Corner details}
- 2002/8676 . . . {Wall end details}
- 2002/8682 . . . {Mixed technique using permanent and reusable forms}
- 2002/8688 . . . {Scaffoldings or removable supports therefor}
- 2002/8694 . . . {with hinged spacers allowing the formwork to be collapsed for transport}
- 2/88 . . Curtain walls {(fixing of glass panes [E06B 3/54](#))}

- 2/885 . . {comprising a supporting structure for flush mounted glazing panels}
- 2/90 . . comprising panels directly attached to the structure {[\(E04B 2/885 takes precedence\)](#)}
- 2/92 . . . Sandwich-type panels
- 2/94 . . . Concrete panels [\(E04B 2/92 takes precedence\)](#)
- 2/96 . . comprising panels attached to the structure through mullions or transoms {[\(E04B 2/885 takes precedence\)](#)}
- 2/962 . . . {with angles or corners in the curtain wall}
- 2/965 . . . {Connections of mullions and transoms}
- 2/967 . . . {Details of the cross-section of the mullions or transoms [\(E04B 2/965 takes precedence\)](#)}
- 5/00 Floors; Floor construction with regard to insulation; Connections specially adapted therefor (elements for floors, e.g. bricks, stones, filling bodies, girders, [E04C](#); flooring as finishing work, insulation of flooring, sectional false floors, e.g. for computers [E04F 15/00](#))**
- 5/02 . . Load-carrying floor structures formed substantially of prefabricated units [\(E04B 5/43 - E04B 5/48 take precedence\)](#)
- 5/023 . . {Separate connecting devices for prefabricated floor-slabs}
- 5/026 . . {with beams or slabs of plastic}
- 5/04 . . with beams {or slabs} of concrete or other stone-like material, e.g. asbestos cement [\(E04B 5/08, E04B 5/14 take precedence\)](#)
- 5/043 . . . {having elongated hollow cores}
- 5/046 . . . {with beams placed with distance from another}
- 5/06 . . . {with beams} placed against one another {optionally with pointing-mortar}
- 5/08 . . assembled of block-shaped elements, e.g. hollow stones [\(E04B 5/14 takes precedence; floors composed of reinforced brickwork \[E04B 5/44\]\(#\)\)](#)
- 5/10 . . with metal beams or girders, e.g. with steel lattice girders [\(E04B 5/14 takes precedence\)](#)
- 5/12 . . with wooden beams [\(E04B 5/14 takes precedence\)](#) {also means for supporting beams; (shores or struts [E04G 25/00](#))}
- 5/14 . . with beams or girders laid in two directions
- 5/16 . . Load-carrying floor structures wholly or partly cast or similarly formed *in situ* [\(E04B 5/43 - E04B 5/48 take precedence; floors merely characterised by the prefabricated elements \[E04C\]\(#\)\)](#)
- 5/17 . . Floor structures partly formed *in situ*
- 2005/173 . . . {with permanent forms for the floor edges}
- 2005/176 . . . {with peripheral anchors or supports}
- 5/18 . . . with stiffening ribs or other beam-like formations wholly cast between filling members
- 5/19 . . . the filling members acting as self-supporting permanent forms [\(E04B 5/21 takes precedence\)](#)
- 5/21 . . . Cross-ribbed floors
- 5/23 . . . with stiffening ribs or other beam-like formations wholly or partly prefabricated (with all load-carrying parts substantially consisting of prefabricated units [E04B 5/02](#) {; beams built-up by elements joined in line [E04C 3/22](#)})
- 2005/232 . . . {with special provisions for connecting wooden stiffening ribs or other wooden beam-like formations to the concrete slab}
- 2005/235 {Wooden stiffening ribs or other wooden beam-like formations having a special form}
- 2005/237 {Separate connecting elements}
- 5/26 with filling members between the beams [\(E04B 5/28 takes precedence\)](#)
- 5/261 {Monolithic filling members}
- 5/263 {with a flat lower surface [\(E04B 5/265 takes precedence\)](#)}
- 5/265 {with one or more hollow cores}
- 5/266 {Filling members covering the undersurface of the beams}
- 5/268 {End filling members to be placed between the floor and the wall, e.g. thermal breaks}
- 5/28 Cross-ribbed floors
- 5/29 the prefabricated parts of the beams consisting wholly of metal [\(E04B 5/28 takes precedence\)](#)
- 5/32 . . Floor structures wholly cast *in situ* with or without form units or reinforcements
- 2005/322 . . . {with permanent forms for the floor edges}
- 2005/324 . . . {with peripheral anchors or supports}
- 5/326 . . . {with hollow filling elements}
- 5/328 {the filling elements being spherical}
- 5/36 . . . with form units as part of the floor
- 5/38 with slab-shaped form units acting simultaneously as reinforcement; Form slabs with reinforcements extending laterally outside the element {(beams placed against one another and acting as permanent forms [E04B 5/23](#))}
- 5/40 with metal form-slabs
- 5/43 . . Floor structures of extraordinary design; Features relating to the elastic stability; Floor structures specially designed for resting on columns only, e.g. mushroom floors {(anchoring devices for balconies with means for preventing cold bridging [E04B 1/0038](#)); extraordinary constructions in general [E04B 1/34](#)}
- 5/44 . . Floors composed of stones, mortar, and reinforcing elements (with inserts of glass [E04B 5/46](#))
- 5/46 . . Special adaptation of floors for transmission of light, e.g. by inserts of glass (of ceilings [E04B 9/32](#), block-shaped elements [E04C 1/42](#); slab- or sheet-shaped elements [E04C 2/54](#); for roof covering [E04D 3/06](#))
- 5/48 . . Special adaptations of floors for incorporating ducts, e.g. for heating or ventilating (in block-shaped elements [E04C 1/39](#); in slab- or sheet-shaped elements [E04C 2/52](#))
- 7/00 Roofs; Roof construction with regard to insulation (structures for roofs as well as for floors [E04B 5/00](#); ceilings [E04B 9/00](#); greenhouses [A01G 9/14](#); large containers having floating covers [B65D 88/34](#); roof trusses, trusslike structures, joists [E04C 3/02](#); roof covering [E04D](#))**
- 7/02 . . with plane sloping surfaces, e.g. saddle roofs {(canopies [E04F 10/00](#);) [E04B 7/12 takes precedence](#)}
- 7/022 . . {consisting of a plurality of parallel similar trusses or portal frames}

7/024	. . . {the trusses or frames supporting load-bearing purlins, e.g. braced purlins (battens, supports for battens E04D 12/00)}	9/005	. {composed of imitation beams or beam coverings}
7/026	. . {consisting of prefabricated modules, e.g. box-like or cell-like units (E04B 7/24 takes precedence)}	9/006	. {with means for hanging lighting fixtures or other appliances to the framework of the ceiling}
7/028	. . {consisting of structures of pyramidal or conical shape}	9/008	. {with means for connecting partition walls or panels to the ceilings}
7/04	. . supported by horizontal beams or the equivalent resting on the walls (E04B 7/06 takes precedence)	9/02	. having means for ventilation or vapour discharge
7/045	. . . {with connectors made of sheet metal for connecting the roof structure to the supporting wall (connectors made of sheet metal for wooden elongated load-supporting elements in general E04B 1/2608)}	9/023	. . {comprising drainage gutters for condensed water or grease}
7/06	. . Constructions of roof intersections or hipped ends	2009/026	. . {the supporting ceiling grid acting as air diffusers}
7/063	. . . {Hipped ends}	9/04	. comprising slabs, {panels,} sheets or the like
2007/066	. . . . {for conservatories}	9/0407	. . {being stiff and curved}
7/08	. Vaulted roofs (E04B 7/14 takes precedence ; vaulted structures in general E04B 1/32 ; inflatable tents or canopies, in general E04H 15/20 ; inflatable forms for shaping <i>in situ</i> E04G 11/04)	9/0414	. . {being foldable, curvable or rollable}
7/10	. . Shell structures, e.g. of hyperbolic-parabolic shape; Grid-like formations acting as shell structures; Folded structures (buildings E04B 1/32)}	9/0421	. . {comprising ducts}
7/102	. . . {Shell structures}	9/0428	. . {having a closed frame around the periphery}
7/105	. . . {Grid-like structures}	9/0435	. . {having connection means at the edges}
7/107	. . . {Folded structures}	9/0442	. . {having a honeycomb core}
7/12	. formed in bays, e.g. sawtooth roofs (E04B 7/10 takes precedence)	9/045	. . {being laminated}
7/14	. Suspended roofs (suspended tents or canopies in general E04H 15/04)	9/0457	. . {having closed internal cavities}
7/16	. Roof structures with movable roof parts (buildings for special purposes E04H)	9/0464	. . {having irregularities on the faces, e.g. holes, grooves}
7/163	. . {characterised by a pivoting movement of the movable roof parts (E04B 7/166 takes precedence)}	9/0471	. . {having a trapezoidal cross section}
7/166	. . {characterised by a translation movement of the movable roof part, with or without additional movements}	9/0478	. . {of the tray type}
7/18	. Special structures in or on roofs, e.g. dormer windows (in connection with roof coverings E04D 13/00 , especially domes E04D 13/03)	9/0485	. . . {containing a filling element}
7/20	. Roofs consisting of self-supporting slabs, e.g. able to be loaded	2009/0492	. . {with fabrics tensioned on frames}
7/205	. . {the slabs having non-structural supports for roofing materials (for slabs having insulating properties E04B 7/225)}	9/06	. characterised by constructional features of the supporting construction {, e.g. cross section or material of framework members}
7/22	. . the slabs having insulating properties, e.g. laminated with layers of insulating material	9/061	. . {supporting construction for curved ceilings}
7/225	. . . {the slabs having non-structural supports for roofing materials}	2009/062	. . {Caps covering visible surfaces of the supporting construction}
7/24	. . the slabs being collapsible {or retractable}, e.g. for transport	9/064	. . {comprising extruded supporting beams}
9/00	Ceilings; Construction of ceilings, e.g. false ceilings; Ceiling construction with regard to insulation (ceilings used as forms for making floors E04B 5/00 ; coverings or linings for ceilings E04F 13/00)	9/065	. . {comprising supporting beams having a folded cross-section}
9/001	. {characterised by provisions for heat or sound insulation}	9/067	. . . {with inverted T-shaped cross-section}
9/003	. {with movable parts, e.g. pivoting panels, access doors}	9/068	. . . . {with double web}
		9/08	. . having the capability of expansion {, e.g. in case of fire}
		9/10	. . Connections between parallel members of the supporting construction (E04B 9/08 takes precedence)
		9/12	. . Connections between non-parallel members of the supporting construction (E04B 9/08 takes precedence)
		9/122	. . . {one member passing through the other member, both members laying at least partly in the same plane}
		9/125	. . . . {both members being continuous members}
		9/127	. . . {one member being discontinuous and abutting against the other member}
		9/14	. . . all the members being discontinuous and laying at least partly in the same plane
		9/16	. . . the members lying in different planes
		9/18	. Means for suspending the supporting construction
		9/183	. . {having a lower side adapted to be connected to a channel of the supporting construction}
		2009/186	. . {with arrangements for damping vibration}
		9/20	. . adjustable
		9/205	. . . {by means of a resilient clip}
		9/22	. Connection of slabs, {panels,} sheets or the like to the supporting construction
		9/225	. . {with the slabs, panels, sheets or the like hanging at a distance below the supporting construction}

E04B

- 9/24 . . with the slabs, {panels,} sheets or the like positioned on {the upperside of}, or held against {the underside of the} horizontal flanges of the supporting construction {or accessory means connected thereto}
- 9/241 . . . {with the slabs, panels, sheets or the like positioned on the upperside of the horizontal flanges of the supporting construction}
- 9/242 {with separate retaining elements}
- 9/244 {comprising sealing means between the supporting construction and the slabs, panels, sheets or the like}
- 9/245 . . . {by means of screws, bolts or clamping strips held against the underside of the supporting construction ([E04B 9/26 takes precedence](#))}
- 9/247 . . . {by means of sliding or pivoting locking elements, held against the underside of the supporting construction}
- 9/248 . . . {by means of permanent magnetic force held against the underside of the supporting construction}
- 9/26 . . . by means of snap action of elastically deformable elements {held against the underside of the supporting construction}
- 9/28 . . with the slabs, {panels,} sheets or the like having grooves engaging with horizontal flanges of the supporting construction or accessory means connected thereto
- 9/30 . characterised by edge details of the ceiling; e.g. securing to an adjacent wall
- 9/303 . . {for flexible tensioned membranes}
- 9/306 . . . {Tensioning hand tools therefor}
- 9/32 . Translucent ceilings, i.e. permitting both the transmission and diffusion of light ([E04B 9/303](#) and [E04B 9/34](#) take precedence; details of lighting devices, of general application [F21V](#); screens [F21V 11/00](#))
- 9/34 . {Grid-like or} open-work ceilings, e.g. lattice type {boxlike modules, acoustic baffles} ([E04B 9/30](#) takes precedence, grids for lighting devices [F21V](#))
- 9/345 . . {consisting of non-parallel slats, e.g. grids}
- 9/36 . . consisting of parallel slats
- 9/363 . . . {the principal plane of the slats being horizontal}
- 9/366 . . . {the principal plane of the slats being vertical}

2103/00 Material constitution of slabs, sheets or the like

- 2103/02 . of ceramics, concrete or other stone-like material
- 2103/04 . of plastics, fibrous material or wood
- 2103/06 . of metal