

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.

WARNING

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

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)	1/046	. . . . {using reinforcement loops protruding from the elements}
		1/06	. . . the elements being prestressed
		1/08	. . the elements consisting of metal
		1/10	. . the elements consisting of wood
		1/12	. . the elements consisting of other material
		1/14	. . the elements being composed of two or more materials (of reinforced concrete E04B 1/04)
1/0007	. {Base structures; Cellars}		
1/0015	. . {Cellars constructed from prefabricated units}	1/16	. Structures made from masses, e.g. of concrete, cast or similarly formed <u>in situ</u> 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)
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 ; conducts for ventilation, heating systems or air-conditioning F24)}	1/161	. . {with vertical and horizontal slabs, both being partially cast <u>in situ</u> }
1/003	. {Balconies; Decks}	1/162	. . . {with a central core, used as form, in order to form a continuous concrete shell}
1/0038	. . {Anchoring devices specially adapted therefor with means for preventing cold bridging}	1/163	. . {with vertical and horizontal slabs, only the vertical slabs being partially cast <u>in situ</u> (E04B 2/86 takes precedence)}
1/0046	. {Loggias}	1/164	. . {with vertical and horizontal slabs, only the horizontal slabs being partially cast <u>in situ</u> }
2001/0053	. {Buildings characterised by their shape or layout grid}	1/165	. . {with elongated load-supporting parts, cast <u>in situ</u> (E04B 1/161 , E04B 1/163 and E04B 1/164 take precedence)}
2001/0061	. . {Buildings with substantially curved horizontal cross-section, e.g. circular}	1/166	. . {with curved surfaces, at least partially cast <u>in situ</u> in order to make a continuous concrete shell structure (E04B 1/169 takes precedence)}
2001/0069	. . {Prismatic shaped buildings with substantially triangular vertical cross-section}	1/167	. . {with permanent forms made of particular materials, e.g. layered products}
2001/0076	. . {Buildings with specific right-angled horizontal layout grid}	1/168	. . . {flexible}
2001/0084	. . {Buildings with non right-angled horizontal layout grid, e.g. triangular or hexagonal}	1/169	. . . . {inflatable}
2001/0092	. . . {Small buildings with hexagonal or similar horizontal cross-section}		
1/02	. Structures consisting primarily of load-supporting, block-shaped, or slab-shaped elements (E04B 1/32 - E04B 1/36 take precedence)		
1/04	. . the elements consisting of concrete, e.g. reinforced concrete, or other stone-like material		
1/043	. . . {Connections specially adapted therefor}		

E04B

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

E04B

- 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 1/355](#) 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 [G21E](#); 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)}	2001/746	. . . . {Recycled materials, e.g. made of used tires, bumpers or newspapers}
1/6804	. . . . {specially adapted for floor parts}	2001/747	. . . . {Corrugated materials}
1/6806	. . . . {Waterstops (E04B 1/6807 takes precedence)}	2001/748	. . . . {Honeycomb materials}
1/6807	. . . . {Expansion elements for parts cast <u>in situ</u> }	1/76	. . . specifically with respect to heat only (heat insulation in general F16L 59/00)
1/6809	. . . . {Reverse side strips}	1/7604	. . . . {fillings for cavity walls}
1/681	. . . . {for free moving parts}	1/7608	. . . . {comprising a prefabricated insulating layer, disposed between two other layers or panels}
1/6812	. . . . {Compressable seals of solid form}	1/7612	. . . . {in combination with an air space}
1/6813	. . . . {Compressable seals of hollow form (E04B 1/6816 takes precedence)}	1/7616	. . . . {with insulation-layer locating devices combined with wall ties}
1/6815	. . . . {Expansion elements specially adapted for wall or ceiling parts}	1/762	. . . . {Exterior insulation of exterior walls}
1/6816	. . . . {Porous tubular seals for injecting sealing material (filling of cracks in existing buildings E04G 23/02)}	1/7625	. . . . {Details of the adhesive connection of the insulation to the wall}
2001/6818	. . . . {Joints with swellable parts}	1/7629	. . . . {Details of the mechanical connection of the insulation to the wall}
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)	1/7633	. . . . {Dowels with enlarged insulation retaining head}
1/7007	. . . {by using electricity, e.g. electro-osmosis (electrochemical desalination or re-alkalisation of reinforced concrete C04B 41/00)}	1/7637	. . . . {Anchoring of separate elements through the lining to the wall}
1/7015	. . . {by heating the ambient air}	1/7641	. . . . {Elements for window or door openings, or for corners of the building}
1/7023	. . . {by collecting water in basements}	1/7645	. . . . {with ventilation means for the insulation}
1/703	. . . {Evacuating water from walls made from hollow bricks}	1/765	. . . . {Bottom edge finishing profile}
1/7038	. . . {Evacuating water from cavity walls, e.g. by using weep holes}	1/7654	. . . . {comprising an insulating layer, disposed between two longitudinal supporting elements, e.g. to insulate ceilings}
1/7046	. . . . {using trays}	1/7658	. . . . {comprising fiber insulation, e.g. as panels or loose filled fibres}
1/7053	. . . . {Grills for weep holes}	1/7662	. . . . {comprising fiber blankets or batts}
1/7061	. . . . {Devices for preventing blockage of weep holes, e.g. a blockage caused by falling mortar}	1/7666	. . . . {Connection of blankets or batts to the longitudinal supporting elements}
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)}	1/767	. . . . {Blankets or batts with connecting flanges}
1/7076	. . . . {Air vents for walls}	1/7675	. . . . {Insulating linings for the interior face of exterior walls}
1/7084	. . . . {with Knappen systems, i.e. atmospheric siphons}	2001/7679	. . . . {Means preventing cold bridging at the junction of an exterior wall with an interior wall or a floor}
1/7092	. . . . {Temporary mechanical ventilation of damp layers, e.g. insulation of a floating floor}	2001/7683	. . . . {Fibrous blankets or panels characterised by the orientation of the fibres}
1/72	. . . Pest control (by keeping dry E04B 1/70 ; impregnation of wood or like materials B27K)	2001/7687	. . . . {Crumble resistant fibrous blankets or panels using adhesives or meltable fibres}
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)	2001/7691	. . . . {Heat reflecting layers or coatings}
2001/741	. . . . {Insulation elements with markings, e.g. identification or cutting template}	2001/7695	. . . . {Panels with adjustable width}
2001/742	. . . . {Use of special materials; Materials having special structures or shape}	1/78	. . . . Heat insulating elements (E04B 1/7662 takes precedence)}
2001/743	. . . . {Animal products, e.g. wool, feathers}	1/80	. . . . slab-shaped
2001/745	. . . . {Vegetal products, e.g. plant stems, barks}	1/803	. . . . {with vacuum spaces included in the slab}
		1/806	. . . . {with air or gas pockets included in the slab}
		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)
		1/8209	. . . . {sound absorbing devices (E04B 1/8218 , E04B 1/8227 take precedence)}
		1/8218	. . . . {soundproof enclosures}

- 1/8227 {screens ([E04B 2/74](#) takes precedence; for road or railway traffic [E01F](#)); Arrangements of sound-absorbing elements, e.g. baffles}
- 1/8236 {Stage shells}
- 2001/8245 {Machines for manufacturing, shaping, piercing or filling sound insulating elements}
- 2001/8254 {Soundproof supporting of building elements, e.g. stairs, floor slabs or beams, on a structure}
- 2001/8263 {Mounting of acoustical elements on supporting structure, e.g. framework or wall surface}
- 2001/8272 {Resiliently mounted wall cladding acting as a diaphragmatic sound damper}
- 2001/8281 {Flat elements mounted parallel to a supporting surface with an acoustically active air gap between the elements and the mounting surface}
- 2001/829 {Flat elements mounted at an angle, e.g. right angle, to the supporting surface}
- 1/84 Sound-absorbing elements
- 1/8404 {block-shaped}
- 1/8409 {sheet-shaped}
- 2001/8414 {with non-planar face, e.g. curved, egg-crate shaped}
- 2001/8419 {Acoustical cones or the like, e.g. for anechoic chambers}
- 2001/8423 {Tray or frame type panels or blocks, with or without acoustical filling}
- 2001/8428 {containing specially shaped acoustical bodies, e.g. funnels, egg-crates, fanfolds}
- 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}
- 2001/8485 {the opening being restricted, e.g. forming Helmholtz resonators}
- 2001/849 {Groove or slot type openings}
- 2001/8495 {the openings going through from one face to the other face of the element}
- 1/86 slab-shaped
- 1/88 Insulating elements for both heat and sound
- 1/90 slab-shaped
- 1/92 Protection against other undesired influences or dangers (buildings providing protection against external dangers [E04H 9/00](#); shielding against dangerous radiation [G21F](#))
- 2001/925 {Protection against harmful electro-magnetic or radio-active radiations, e.g. X-rays}
- 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](#)})
- 1/941 {Building elements specially adapted therefor}
- 1/942 {slab-shaped}
- 1/943 {elongated}
- 1/944 {covered with fire-proofing material}
- 1/945 {Load-supporting structures specially adapted therefor}
- 1/946 {Protection against smoke or toxic gases}
- 1/947 {by closing openings in walls or the like in the case of fire (fire-proof doors [E06B 5/16](#))}
- 1/948 {Fire-proof sealings or joints (for doors or windows [E06B 5/164](#))}
- 2001/949 {Construction elements filled with liquid, e.g. water, either permanently or only in case of fire}
- 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](#))
- 1/985 {involving active or passive dynamic mass damping systems}
- 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](#))
- 1/994 {Acoustical surfaces with adjustment mechanisms}
- 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](#))**
- 2/02 built-up from layers of building elements
- 2002/0202 {Details of connections}
- 2002/0204 {Non-undercut connections, e.g. tongue and groove connections}
- 2002/0206 {of rectangular shape}
- 2002/0208 {of trapezoidal shape}
- 2002/021 {of triangular shape}
- 2002/0213 {of round shape}
- 2002/0215 {with separate protrusions}
- 2002/0217 {of prismatic shape}

E04B

2002/0219	. . . . . {of pyramidal 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
2002/0221	. . . . . {of conical shape}		
2002/0223	. . . . . {of cylindrical shape}		
2002/0226	. . . . . {with tongues and grooves next to each other on the end surface}	2/16	. . . using elements having specially-designed means for stabilising the position
2002/0228	. . . . . {with tongues next to each other on one end surface and grooves next to each other on opposite end surface}	2/18	. . . . by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails
2002/023	. . . . . {with rabbets, e.g. stepped}	2/20	. . . . by filling material with or without reinforcements in small channels in, or in grooves between, the elements
2002/0232	. . . {Undercut connections, e.g. using undercut tongues and grooves}		
2002/0234	. . . . . {Angular dovetails}	2/22	. . . 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}	2/24	. . . the walls being characterised by fillings in some of the cavities forming load-bearing pillars or beams
2002/0239	. . . . . {Round dovetails}		
2002/0241	. . . . . {tapered, i.e. dovetail narrows in the direction of tongue or groove}	2/26	. . . the walls being characterised by fillings in all cavities in order to form a wall construction
2002/0243	. . . {Separate connectors or inserts, e.g. pegs, pins or keys}	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
2002/0245	. . . . . {Pegs or pins}		
2002/0247	. . . . . {Strips or bars}		
2002/025	. . . . . {U-shaped, e.g. brackets}		
2002/0252	. . . . . {Dovetail keys}	2/30	. . . using elements having specially designed means for stabilising the position; Spacers for cavity walls {(masonry wall ties E04B 1/4178)}
2002/0254	. . . . . {Tie rods}		
2002/0256	. . {Special features of building elements}		
2002/0258	. . . {Gripping or handling aids}	2/32	. . . . by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails
2002/026	. . . {Splittable building elements}		
2002/0263	. . . {Building elements for making angled walls}		
2002/0265	. . . {Building elements for making arcuate walls}	2/34	. . . . by filling material with or without reinforcements in small channels in, or in grooves between, the elements
2002/0267	. . . {Building elements with the appearance of several bricks}		
2002/0269	. . . {Building elements with a natural stone facing}	2/36	. . . using elements having a general shape differing from that of a parallelepiped
2002/0271	. . . {Building elements with the appearance of rock layers}	2/38	. . . the walls being characterised by fillings in some of the cavities forming load-bearing pillars or beams
2002/0273	. . . {Adhesive layers other than mortar between building elements}		
2002/0276	. . . . . {Separate layers or strips}	2/40	. . . the walls being characterised by fillings in all cavities in order to form a wall construction
2002/0278	. . . . . {forming a unity with the building elements}		
2002/028	. . . {Spacers between building elements}	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
2002/0282	. . . . . {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}	2/44	. . . using elements having specially-designed means for stabilising the position; Spacers for cavity walls {(masonry wall ties E04B 1/4178)}
2002/0291	. . . . . {loose material}		
2002/0293	. . . . . {solid material}	2/46	. . . . by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails
2002/0295	. . {of which the width is equal to the wall thickness}		
2002/0297	. . {of which the width is less than the wall thickness}	2/48	. . . . by filling material with or without reinforcements in small channels in, or in grooves between, the elements
2/04	. . Walls having neither cavities between, nor in, the solid elements	2/50	. . . using elements having a general shape differing from that of a parallelepiped
2/06	. . . using elements having specially-designed means for stabilising the position	2/52	. . . the walls being characterised by fillings in some of the cavities forming load-bearing pillars or beams
2/08	. . . . by interlocking of projections or inserts with indentations, e.g. of tongues, grooves, dovetails	2/54	. . . the walls being characterised by fillings in all cavities in order to form a wall construction
2/10	. . . . by filling material with or without reinforcements in small channels in, or in grooves between, the elements	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)
2/12	. . . using elements having a general shape differing from that of a parallelepiped		

- 2/562 . . {with fillings between the load-bearing elongated members}
- 2002/565 . . {with a brick veneer facing}
- 2002/567 . . {with posts or pillars made from a plurality of smaller prefabricated elements}
- 2/58 . . with elongated members of metal
- 2/60 . . . characterised by special cross-section of the elongated members
- 2/62 the members being formed of two or more elements in side-by-side relationship
- 2/64 . . with elongated members of concrete
- 2/66 . . . characterised by special cross-section of the elongated members
- 2/68 . . . made by filling-up wall cavities ([E04B 2/24](#), [E04B 2/38](#), [E04B 2/52](#) take precedence)
- 2/70 . . with elongated members of wood
- 2/701 . . . {with integrated supporting and obturation function}
- 2/702 {with longitudinal horizontal elements ([E04B 2/704](#), [E04B 2/705](#) take precedence)}
- 2/703 {with longitudinal vertical elements}
- 2/704 {with longitudinal horizontal elements shorter than the length of a wall}
- 2/705 {with longitudinal horizontal elements placed between columns}
- 2/706 . . . {with supporting function}
- 2/707 {obturation by means of panels}
- 2/708 {obturation by means of longitudinal elements with a convex external surface}
- 2/709 {obturation by means of longitudinal elements with a plane external surface}
- 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](#))
- 2/721 . . {connections specially adapted therefor}
- 2/723 . . {constituted of gypsum elements}
- 2002/725 . . . {Corner or angle connection details}
- 2002/726 . . . {Clips for butt-joining plasterboards}
- 2002/728 . . . {Butt-joining plasterboards in the space between two studs}
- 2/74 . . Removable non-load-bearing partitions; Partitions with a free upper edge ([framed panels E04C 2/38](#)) {modular coordination}
- 2/7401 . . {assembled using panels without a frame or supporting posts, with or without upper or lower edge locating rails}
- 2/7403 . . . {with special measures for sound or thermal insulation including fire protection}
- 2/7405 . . . {with free upper edge, e.g. for use as office space dividers}
- 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)}
- 2/7409 . . . {special measures for sound or thermal insulation, including fire protection}
- 2/7411 {Details for fire protection}
- 2/7412 {Posts or frame members specially adapted for reduced sound or heat transmission}
- 2/7414 {Posts or frame members with projections for holding sound or heat insulating fillings}
- 2/7416 . . . {with free upper edge, e.g. for use as office space dividers}
- 2002/7418 {Accessories supported on the free upper edge, e.g. auxiliary panels, noise abatement devices}
- 2002/742 {Details of panel top cap}
- 2/7422 {with separate framed panels without intermediary support posts}
- 2/7424 {Glazing details}
- 2/7425 {Details of connection of panels ([E04B 2/7427](#) takes precedence)}
- 2/7427 {with adjustable angular connection of panels}
- 2/7429 {using flexible hinges}
- 2/7431 {using hinges having two parallel rotation axes}
- 2/7433 {with panels and support posts}
- 2/7435 {Glazing details}
- 2/7437 {with panels hooked onto posts ([E04B 2/7438](#) takes precedence)}
- 2/7438 {with adjustable angular connection of panels to posts}
- 2/744 {using angularly-spaced longitudinal grooves of the posts}
- 2/7442 {hinged connections ([E04B 2/7444](#) takes precedence)}
- 2/7444 {panels hooked onto the rim or in a groove of circular posts}
- 2002/7446 {Post-like profiles for connecting panels at an angle}
- 2/7448 . . . {with separate framed panels without intermediary posts, extending from floor to ceiling}
- 2/745 {Glazing details}
- 2/7451 {with false tongue joints}
- 2/7453 . . . {with panels and support posts, extending from floor to ceiling}
- 2/7455 {Glazing details}
- 2/7457 {with wallboards attached to the outer faces of the posts, parallel to the partition ([E04B 2/7459](#) takes precedence)}
- 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}

E04B

- 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 therefore; 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 thereof [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](#))}
- 7/026 . . {consisting of prefabricated modules, e.g. box-like or cell-like units ([E04B 7/24](#) takes precedence)}
- 7/028 . . {consisting of structures of pyramidal or conical shape}
- 7/04 . . supported by horizontal beams or the equivalent resting on the walls ([E04B 7/06](#) takes precedence)

- 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](#))}
- 7/06 . . Constructions of roof intersections or hipped ends
- 7/063 . . . {Hipped ends}
- 2007/066 {for conservatories}
- 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 in situ [E04G 11/04](#))
- 7/10 . . Shell structures, e.g. of hyperbolic-parabolic shape; Grid-like formations acting as shell structures; Folded structures {(buildings [E04B 1/32](#))}
- 7/102 . . . {Shell structures}
- 7/105 . . . {Grid-like structures}
- 7/107 . . . {Folded structures}
- 7/12 . formed in bays, e.g. sawtooth roofs ([E04B 7/10](#) takes precedence)
- 7/14 . Suspended roofs (suspended tents or canopies in general [E04H 15/04](#))
- 7/16 . Roof structures with movable roof parts (buildings for special purposes [E04H](#))
- 7/163 . . {characterised by a pivoting movement of the movable roof parts ([E04B 7/166](#) takes precedence)}
- 7/166 . . {characterised by a translation movement of the movable roof part, with or without additional movements}
- 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](#))
- 7/20 . Roofs consisting of self-supporting slabs, e.g. able to be loaded
- 7/205 . . {the slabs having non-structural supports for roofing materials (for slaps having insulating properties [E04B 7/225](#))}
- 7/22 . . the slabs having insulating properties, e.g. laminated with layers of insulating material
- 7/225 . . . {the slabs having non-structural supports for roofing materials}
- 7/24 . . the slabs being collapsible {or retractable}, e.g. for transport
- 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](#))**
- 9/001 . {characterised by provisions for heat or sound insulation}
- 9/003 . {with movable parts, e.g. pivoting panels, access doors}
- 9/005 . {composed of imitation beams or beam coverings}
- 9/006 . {with means for hanging lighting fixtures or other appliances to the framework of the ceiling}
- 9/008 . {with means for connecting partition walls or panels to the ceilings}
- 9/02 . having means for ventilation or vapour discharge
- 9/023 . . {comprising drainage gutters for condensed water or grease}
- 2009/026 . . {the supporting ceiling grid acting as air diffusers}
- 9/04 . comprising slabs, {panels,} sheets or the like
- 9/0407 . . {being stiff and curved}
- 9/0414 . . {being foldable, curvable or rollable}
- 9/0421 . . {comprising ducts}
- 9/0428 . . {having a closed frame around the periphery}
- 9/0435 . . {having connection means at the edges}
- 9/0442 . . {having a honeycomb core}
- 9/045 . . {being laminated}
- 9/0457 . . {having closed internal cavities}
- 9/0464 . . {having irregularities on the faces, e.g. holes, grooves}
- 9/0471 . . {having a trapezoidal cross section}
- 9/0478 . . {of the tray type}
- 9/0485 . . . {containing a filling element}
- 2009/0492 . . . {with fabrics tensioned on frames}
- 9/06 . characterised by constructional features of the supporting construction {, e.g. cross section or material of framework members}
- 9/061 . . {supporting construction for curved ceilings}
- 2009/062 . . {Caps covering visible surfaces of the supporting construction}
- 9/064 . . {comprising extruded supporting beams}
- 9/065 . . {comprising supporting beams having a folded cross-section}
- 9/067 . . . {with inverted T-shaped cross-section}
- 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}
- 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}

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- 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